

PASSWORD



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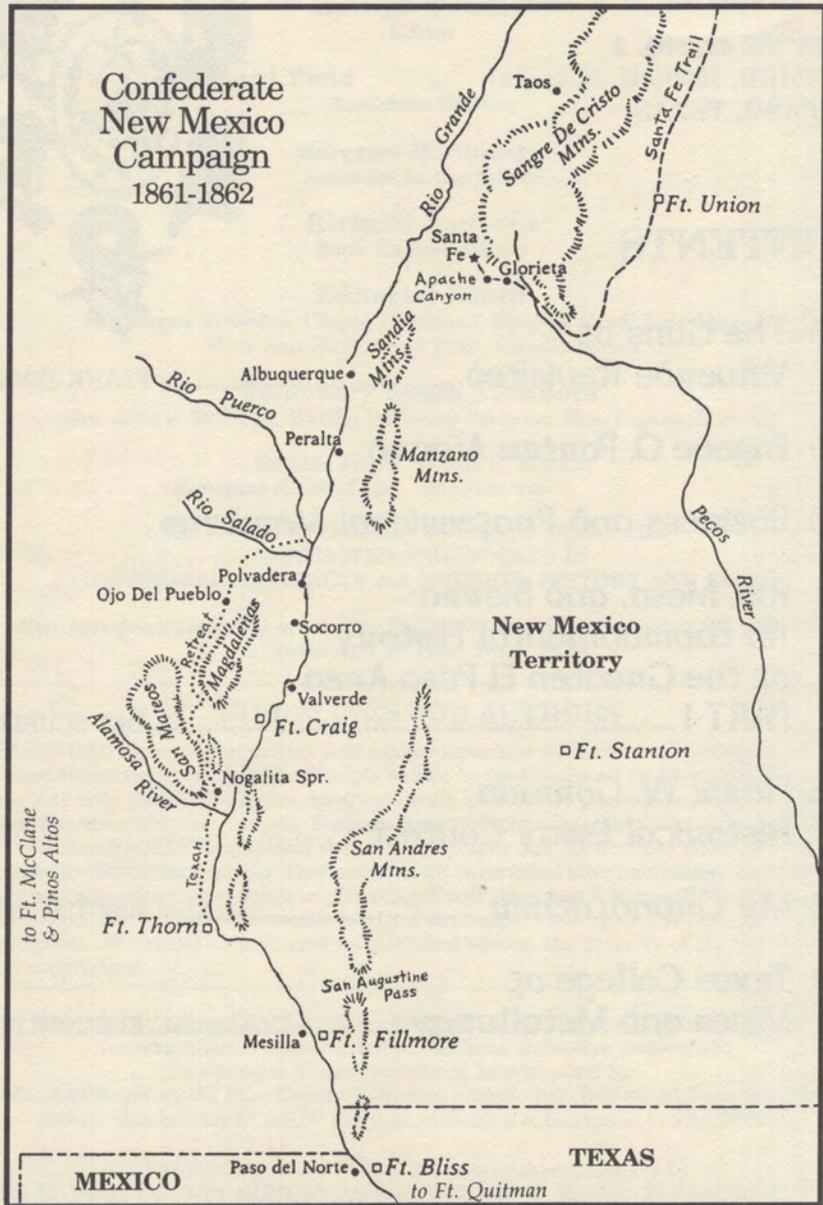
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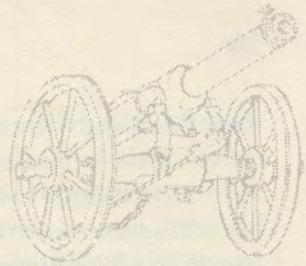


*Adapted from Rebels on the Rio Grande
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The Guns of Valverde Revisited

By Frank Jenkins

In 1968 a vintage Civil War howitzer languishing in storage at the University of Texas at El Paso was resurrected, restored, and proudly given a place of honor at Eastwood High School. The commemorative plaque beside the cannon indicated that it was thought to be one of those captured from Federal forces by Confederates at the Battle of Valverde, New Mexico, on 21 February 1862. This conclusion was heavily influenced by a 1960 *Password* article, "The Guns of Valverde," by Richard McMaster and George Ruhlen.

The Pioneers Association of El Paso County, owner of the howitzer since 1905, conveyed it to the school on indefinite loan, on condition that security be provided for it and that it be kept in good repair.¹

By the fall of 1996, the gun's wooden wheels and carriage had deteriorated from exposure to the elements. It had been kept in an outdoor patio behind the main hallway of the school. A movement to effect the howitzer's restoration caught the attention of Civil War buffs throughout the Southwest. It also aroused long-held doubts as to the legitimacy of the claim that it had functioned at Valverde.

The markings and configurations of the Eastwood cannon indisputably identify it as a 12-pounder bronze field howitzer Series 1841, cast at the N. P. Ames Foundry of Springfield, Massachusetts, in 1846. Army Ordnance Inspector James Wolfe Ripley's initials – JWR – and Inspection Sequence number 39 are stamped

Editor's Note: *The subject of this article has been in contention by many authorities for many years. The editorial staff of Password passes no judgment. We leave it to you to draw your own conclusions. Our thanks go to Nancy Hamilton who provided her editorial skills.*

into the metal. Another stamping on the hardware indicates that at one time it was at the "Washington Arsenal."

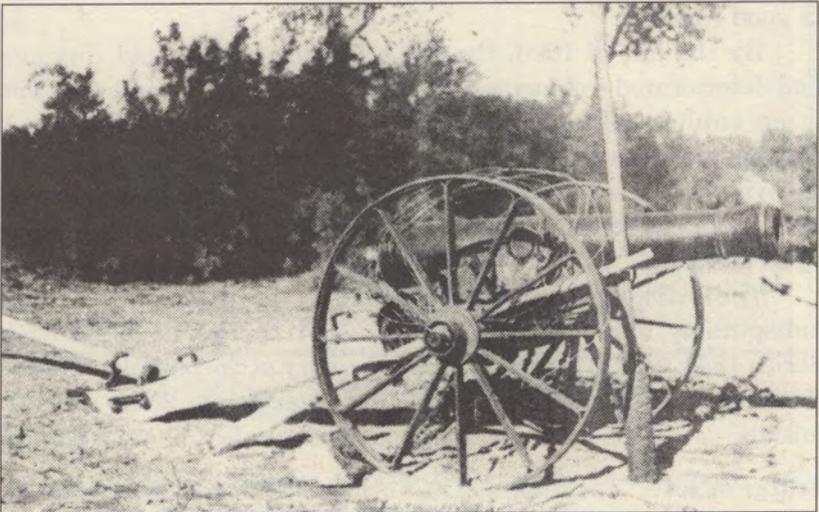
How it came to be in El Paso is the question herein confronted.

This howitzer and another piece, a 6-pounder later lost to the World War II scrap metal drive, first came to the attention of El Pasoans in the 1890's. Discovered in a warehouse, the pieces became the possession of the McGinty Club, a civic group that occasionally fired them on special occasions. Upon the disbanding of the McGinty Club, the cannon were given to the Pioneers.

With the pieces went the verbal tradition that they had been used in the Battle of Valverde and indeed one was said to be stained with the blood of Captain Alexander McRae for whom, by coincidence, the street in front of Eastwood High School had been named.

Because of these long-held beliefs, it would be prudent to determine first whether these guns had been part of the ordnance brought to El Paso by units of the Sibley Brigade's New Mexico incursion of 1861-62.

Even before the voters had ratified Texas' secession from the Union, militant citizens moved to arm themselves for the coming fray. On 16 February 1861, Texas Ranger Ben McCulloch and 400 volunteers bullied Union General David Twiggs into surrendering the Federal Arsenal at San Antonio. The Texas rebels now had at their disposal ten 6-pounder guns and twelve mountain howitzers.²



The Blue Whistler cannon won a degree of fame during the Mexican Revolution. Courtesy El Paso Public Library

In May 1861, Confederate Colonel Earl Van Dorn sent advance troops westward to secure the frontier forts evacuated by Union forces. They took cannon from the forts along the way to provide the necessary ordinance for an artillery battery. By mid-June old Indian fighter Colonel John Baylor and the Second Texas Mounted Rifles, accompanied by Captain (later Major) Trevanion Teel and his artillerists, were on their way west to El Paso. By 4 July Baylor and his men had occupied Fort Bliss. Van Dorn wrote: "I have mustered a company of artillery and put them at Fort Bliss, with instructions to defend it with the six pieces now there."³

It is not clear, aside from Teel's known four 6-pounders, what the other guns mentioned by Van Dorn were. Subsequent evidence suggests at least one was a 6-pounder, and we are assured by McMaster and Ruhlen that "The artillery surrendered by Federal garrisons in the Southwest did not include any 12-pounder [field] howitzers."⁴

Baylor did not dally at Fort Bliss. By 23 July he was in Mesilla and two days later repelled an attack by Union troops from nearby Fort Fillmore. On 27 July, Baylor overtook and forced the surrender of Union Major Isaac Lynde and the entire Fillmore garrison as it was retreating eastward through San Augustine* Pass. Among the spoils were three howitzers according to Donald Frazier. Martin Hardwick Hall states that Baylor captured "four pieces of artillery." Whatever the number, they were mountain howitzers, not 12-pounder field howitzers. Baylor sent "a piece of artillery" to Pinos Altos for defense of the gold miners there. It may have been a 6-pounder from Fort McLane near Santa Rita, which Major Lynde had abandoned.⁵

Thus, while he was putting down Indian uprisings and awaiting the arrival of the Sibley Brigade from San Antonio, Baylor had at his disposal Teel's four 6-pounders and possibly four mountain howitzers and two unidentified pieces from the surrendered forts.

On 8 December a Union second lieutenant, Juan Arroyo, reported four howitzers and one gun in the plaza at Mesilla and another cannon at San Elizario. His scouting report was dated a full week before Sibley's Brigade arrived at the pass. This leads to the conclusion that Lieutenant Arroyo must have spied Teel's 6-pounders and the mountain howitzers captured at the surrender

* NOTE: According to *New Mexico Place Names* by T. M. Pearce, this has varied spellings: San Augustin, San Agustín, or San Augustine.



To the right of the tree (highlighted) are Whistler and Long Tom. Postcard loaned by Fred Morales

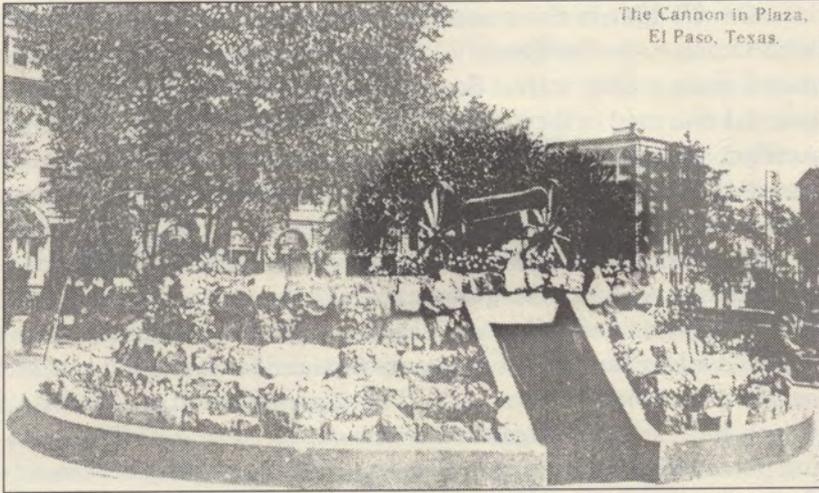
of Fort Fillmore. The gun at Mesilla may have been brought up from Fort Bliss.⁶

Finally, on 23 October, after much delay, Sibley's Brigade departed San Antonio for El Paso. All sources agree that the artillery he took with him consisted of a total of eight mountain howitzers, but no 12-pounder field howitzer.⁷

Sibley's Brigade began arriving at the pass on 17 December and slowly filtered northward up the Rio Grande to Fort Thorn, 80 miles below the Union's Fort Craig, which would be their first roadblock. By the time they began their detour around Fort Craig on 20 February, Private James Franklin Starr, of Reily's Battery, 4th Regiment, wrote: "We had fifteen pieces of artillery, all of these were 12-pound [mountain] howitzers except four, which were 6-pounder field pieces." This indicates that Sibley had added the Fillmore howitzers to his arsenal.⁸

Colonel Richard Canby, commanding Fort Craig, and a later historian recorded that Sibley had "fifteen pieces of artillery." They included Teel's four 6-pounder guns and eleven mountain howitzers, eight of Sibley's and three from Fort Fillmore.⁹

In recounting details of the Battle of Valverde Ford on 21 February 1862, focus needs to center only on the capture by Confederate forces of the six-piece artillery battery of Union Captain Alexander McRae.



The Cannon in Plaza,
El Paso, Texas.

The Rockery in San Jacinto Plaza with Blue Whistler (highlighted) atop. Postcard loaned by Fred Morales

McMaster and Ruhlen, in their *Password* account, conclude that McRae's battery consisted of four 12-pounder field howitzers and two 6-pounder guns when they "marched out of the gates of Fort Craig to their rendezvous with destiny."¹⁰

Contradicting these figures, however, is the Fort Craig post return for February 1862 which clearly states:

Lost in action at the Battle of Valverde February 21, 1862:
list of pieces being 2-12 lb. howitzers, 3-6 lb. guns and one
mountain howitzer.¹¹

Historians John Taylor and Martin Hardwick Hall agree with the post return. The post return can be presumed to be correct and that there were two 12-pounder field howitzers in what Sibley would later christen "The Valverde Battery." After the battle, Frank Starr wrote, "We now have 21 pieces of artillery."¹² In that total were seven 6-pounder guns (four of Teel's and three of McRae's), twelve mountain howitzers (eleven of Sibley's and one of McRae's), and two 12-pounder field howitzers of McRae's.

Once Sibley moved north from Valverde, the tracing of his ordnance became more difficult. After firing a thirteen-gun salute upon entering Albuquerque, he sent Major Charles L. Pyron and two 6-pounders to Santa Fe. Pyron proceeded to Apache Canyon, where he was surprised by Federals from Fort Union. He withdrew and sent for help. Lieutenant Colonel William R. Scurry, with two guns, rushed to his aid.

On 28 March their combined forces renewed engagement with Union forces in Glorieta Pass after leaving one 6-pounder to guard their wagon train. Scurry wrote, "Leaving a small wagon guard, I marched in their direction . . . with three pieces of artillery." Artifact evidence collected from the battlefield indicates that two of these pieces were the 12-pounder howitzers captured from McRae at Valverde.¹³

During the battle, Federal artillery "dismounted" a "Confederate howitzer" by striking it squarely in the muzzle with a round shot. Historian Don Alberts concludes that the disabled piece was not a howitzer but in fact "the only 6-pounder on the field, based on the personnel killed on it." The 6-pounder left at Johnson's Ranch to guard the wagon train was captured by a Union flanking party, "spiked," and rolled down a hill, destroying or severely damaging its carriage.¹⁴

There is no evidence in the literature that these two pieces were abandoned on the field by the Rebels, so for the time being

There is no evidence in the literature that these two pieces were abandoned on the field by the rebels, so for the time being the presumption is that they were returned to Santa Fe with the still serviceable pieces.

the presumption is that they were returned to Santa Fe with the still serviceable pieces. By 30 March Scurry and the Rebels were back in Santa Fe licking their wounds. The next day Colonel Thomas Green left Albuquerque to join them, taking two mountain howitzers with him. Captain Teel, Baylor's artilleryman, must have gone with him. So, now at Santa Fe there are two 6-pounders, two mountain howitzers, and two field howitzers, for a total of six.¹⁵

In a letter published by an Albuquerque newspaper in 1889, Teel recalled that his command had buried some pieces at Santa Fe. He could not remember

the exact location or the quantity, but he said, "The pieces were interred in the night and much snow fell. . . I think about a mile north of the government corral." Howard Bryan, who wrote about Teel and his cannon, discovered another version of the Santa Fe burial dating from 1925. This account reads: "Major Teel, who buried them, stated that they were six feet underground in the western part of town on the road to Santo Domingo." Bryan says, "This would put the burial place on the opposite side of town

from the government corral." Don Alberts locates the site beneath Paseo de Peralta at the foot of Fort Marcy hill. Franklin Smith states that "A search for the location in the 1960's placed them well below the fill beneath a subdivision." Alberts concluded that "It is almost certain that what Teel buried were the garrison pieces from Fort Marcy which had been abandoned by the Federals and undoubtedly made seriously unserviceable."

In 1899, the year Teel died, he remembered the number as being ten pieces. Bryan makes it an even dozen. Given the difficulty of equipping Forts Craig and Union with artillery, as revealed by a careful reading of McMaster and Ruhlen, these numbers are questionable. It seems unlikely that when Union Major Donaldson evacuated Santa Fe, he would have abandoned so many pieces to the enemy. Perhaps Teel's memory was playing tricks on him.¹⁷

On 6 April Green learned of Canby's approach from the south and rushed back to Albuquerque with "two guns." The later losses of mountain howitzers in Sibley's retreat south lead to the belief that they were the same ones Green had taken to Santa Fe. And what of Pyron's two 6-pounders? Later evidence shows that one of these pieces was brought down with McRae's field howitzers. This leads to the presumption that the 60-pounder spiked by the Federals at Johnson's Ranch was left buried at Santa Fe.¹⁸

As Sibley departed Albuquerque on 12 April, his ordnance tally was: six 6-pounders (three of Teel's, three of McRae's), four mountain howitzers (eight remained buried at Albuquerque), and two field howitzers (McRae's), for a total of twelve. As the Rebels moved slowly down the Rio Grande, they were overtaken and surprised at Peralta on 14 April by Canby's Union forces, which captured one of their mountain howitzers.¹⁹

New Mexico's Union Governor Henry Connelly wrote from Santa Fe on 20 April to Secretary of State William H. Seward in Washington, D.C., of Sibley's retreat south of Peralta as having "artillery numbering some eighteen pieces." Evidently this information had been furnished to him based on Sibley's inventory in Albuquerque before burying the eight howitzers. If accurate, however, it might indicate that Sibley had only five 6-pounders with him, a possibility for later speculation.²⁰

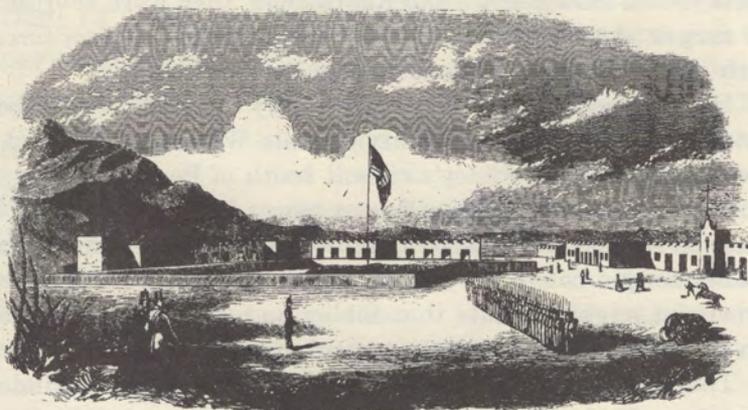
The current total, then, was eleven pieces—six 6-pounders (three from Teel, three from McRae), three mountain howitzers (one of them captured at Peralta), and two field howitzers (both McRae's).

Sibley reached the confluence of the Rio Puerco and the Rio Grande on 17 April. There the fateful decision was made to detour through the wilderness west of Fort Craig. Moving away from the river in a southwesterly direction, the brigade arrived at a point near where La Jencia Creek flows into the Rio Salado. Union Scout Paddy Graydon retraced Sibley's detour route, in reverse, two weeks after the Rebel brigade reached the Mesilla Valley. He reported Sibley's abandonment of equipment along the way, particularly near Rio Salado on La Jencia Creek where "they blew up and burned . . . one 12-pounder howitzer and two mountain howitzer carriages . . . I think they left 3 howitzers, one 12-pounder and two mountain."²¹

According to historian Jerry Thompson: "One of the 12-pounder mountain howitzers, which had been spiked, was dug up and removed to Polvadera by citizens of that village. That gun was later taken to Fort Craig and eventually sent to Fort Union."²²

Union Colonel Benjamin S. Roberts reported a week after Graydon "Two pieces of [their] artillery have fallen into our hands." One of these must have been the mountain howitzer captured earlier by Canby at Peralta and the other the one unearthed at the Salado by Mexicans from Polvadera. Another of the mountain howitzers buried at Salado was retrieved in the 1950's and was in private hands in Socorro, New Mexico, as recently as 1959.²³

The other piece, thought by Graydon to have been buried at Salado, has never surfaced. Graydon presumed from the burned



Painting of old Fort Bliss as done by artist with Bartlett circa 1849. The post opposite El Paso del Norte. Courtesy El Gringo: New Mexico and Her People. W.W.H. Davis

carriage remnants that the third gun was a 12-pounder field howitzer, but since Franklin Smith states the carriage for that piece was interchangeable with the one for a 6-pounder gun, it cannot be presumed that a field howitzer was actually buried at this site, especially since later reports indicate that the Valverde Battery remained intact. Thus is left hanging the question of a third burial at Rio Salado.

Now the known total of cannon is nine: six 6-pounders (five from Rio Salado), one mountain howitzer (two buried at Salado), and two field howitzers. At this point, says Confederate diarist A. B. Peticolas, that, as they were climbing up out of the La Jencia creek bottom,

Scurry got down from his horse, called for volunteers to help pull the artillery up the hill and took hold of the cannon rope himself. Men flocked to the piece and all five were soon drawn safely to the top of the hill. Green has the other battery.

It is not known how many guns Green and Teel were pulling. They were behind Scurry, who was in the lead.²⁴

The next day, at Ojo del Pueblo, writes Peticolas, "Some talk of spiking the artillery and leaving it. . . Green . . . gotten tired of helping their battery along, but it was not done." At this point Colonel Scurry apparently took charge and consolidated the Valverde Battery. "Scurry has command now of Baylor's men [and] the fragment of 'the other regiments.' [He] will not consent to leave behind us the only trophies we have been able to keep of our victories." Frank Starr also mentioned in a letter that the 4th Regiment had taken charge of nine field pieces.²⁵

The following day the brigade crossed the valley southwest of the Magdalenas and continued along the lower slopes of the San Mateos. At one point, wrote Peticolas, they "passed in sight of Ft. Craig" and then "climbed a high steep hill, dragging up the 8 [9] heavy guns" near Turkey Springs.²⁶

The reference in Peticolas' diary to "8 [9] heavy guns" near Turkey Springs includes an interpolation by the editor, Don Alberts, to bring the tally into conformity with the reference to nine guns the following day: "He [Scurry] informed us that he had committed to us the guns and that we were to be responsible for their safe passage through. We have 9 guns."²⁷

There is another intriguing possibility. In the previously cited 1889 letter from Teel to an Albuquerque newspaper, he recollects: "The pieces buried in the mountains opposite Fort Craig

... are large pieces, field guns, 6's and 12's brass." He does not say how many. Could he, twenty-seven years after the event, have been confusing the burial at Rio Salado with "the mountains opposite Fort Craig?" Perhaps, even though an old military map of 1864 clearly distinguishes between the Magdalena mountains west of Socorro and the San Mateo mountains west of Fort Craig to the south. Since the Magdalenas run in an overlapping parallel to the San Mateos, it is possible the two ranges were thought of as one by Teel; however, the Salado site lies not "opposite Fort Craig" but some forty-eight miles north and west.²⁸

If Teel buried some pieces in the San Mateos opposite the fort, that most likely would have been during the trek between

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Turkey and Nogalita springs on 22 April. The topography was especially tortuous for the guns and the men. Don Alberts says, "The route crossed the head of every one of the numerous parallel canyons that run eastward from the San Mateo range." Paddy Graydon's report testifies to the incredible desperation of the brigade at this point in finding "three dead bodies half buried" and "bones of a man's arm, half eaten by wolves."²⁹

Although Peticolas makes one last entry this date—"We have 9 guns"—we do not necessarily have to conclude that none were buried by Teel that day. The guns likely

were not bunched up in close file on the trail and Peticolas may have made his diary entry in the morning when Teel, lagging behind, was unnoticed. The men, half-crazed with thirst, did not reach Nogalita Spring until "late in the evening after sundown," according to Peticolas. Teel could have been tempted to abandon guns not belonging to the prized Valverde Battery; if so, Paddy Graydon did not mention finding the guns' carriages later, so the mystery remains.

The community of San Marcial was relocated in 1866 from the east side to the west side of the Rio Grande near the Valverde battleground. With the coming of the railroads it was the second largest town in Socorro County from 1890 to 1920. In 1929 a flood destroyed both San Marcial and the adjacent New San Marcial where the post office was located. The *San Marcial Bee* in 1899 carried a news item that was reprinted by the *El Paso Daily Herald* of 10 March:

The six pieces of brass cannon buried near San Marcial after the Battle of Valverde have been located by Jim Bird, our old time colored citizen. . . this information . . . will be yielded up by Jim on receipt of a valuable consideration for his trouble.

Major Teel's response to this was: "I buried four or six guns at San Marcial, eight at Albuquerque and ten at Santa Fe." This response was made in the year that Teel died at age 75, so his memory may have been faulty. There is no evidence that Jim ever collected his "valuable consideration."³⁰

In 1937 Mary Teel Harper, the major's widow, wrote to an El Paso newspaper to tell for "the first time the true story of the McGinty Cannon," a gun that figures later in this article. The letter is replete with historical inaccuracies which are generally corrected by Conrey Bryson in his book *Down Went McGinty*, a history of the McGinty Club. One of her statements, however, still lingers:

. . . cannon were buried near San Marcial. Capt. Teel made a map showing their exact location . . . I still have it. They are still buried there.

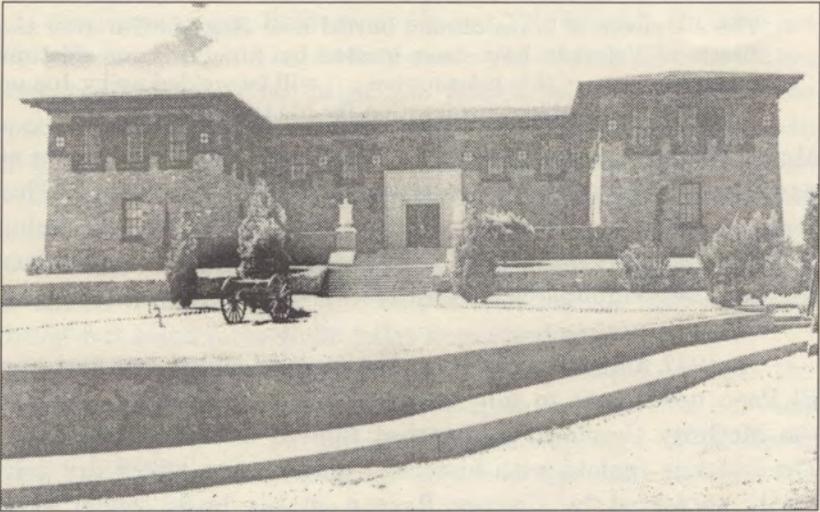
One of Teel's daughters said in the 1950's that her father had had a map showing various burial places of cannon, but that her mother destroyed most of his papers after he died.³¹

For whatever they are worth, these tidbits must relate to burial at Rio Salado and possibly the San Mateos, for Teel and the brigade passed many miles west of San Marcial in order to avoid Fort Craig.

The brigade stumbled down to the Rio Grande on 25 April and by 5 May was resting at Fort Bliss. Frank Starr wrote from there on 6 May: "The only benefits arising from the campaign were . . . the fine battery of six guns taken from the enemy at Valverde and 800 or 1000 stand of small arms." Hall quotes a soldier's letter to a Houston newspaper: "We have brought down six pieces of cannon, the Valverde Trophy." Canby reports: "They reached the Mesilla with six guns and seven wagons." According to Noel, "the guns captured at Valverde alone were kept."³²

These reports do not necessarily lend credence to Teel's burial of 6-pounders in the San Mateos, but they are worthy of attention.

The possibility of a third piece buried at Salado remains unresolved, as does the possible burial of pieces in the San Mateos,



McGinty-Pioneers Howitzer (highlighted) at Centennial Museum. From "Flowsheet" College of Mines 1943.

so the tally upon returning to the Mesilla Valley appears to be eight or nine guns, more or less in conformity with Don Alberts' appraisal.

A week after the brigade returned to the Mesilla Valley, the captured McRae Battery was reorganized and manned. In late May, Pyron and his men commenced escorting the newly christened "Valverde Battery" back to San Antonio.³³

This leads to the question: Was one gun, a 12-pounder field howitzer, left behind to become the McGinty-Pioneers-Eastwood cannon?

The early weeks of June saw the remnants of the brigade moving toward San Antonio. Colonel William Steele, with his men and a few pieces of artillery, were left as rear guard to cover the evacuation from the territory.

None of the accounts agree as to how many men or guns were left with Steele. Hall says that Sibley ordered Steele to remain with about 630 men; no guns are mentioned. Jerry Thompson refers to half of Steele's 7th Regiment and no guns. The *Houston Tri-Weekly Telegraph* reported on 27 June Steele was left with 400 men and Teel's artillery. Donald Frazier sums it up: "three hundred men of the 7th Texas Mounted Volunteers and three of Maj. Trevanion Teel's six-pounders remained to hold the territory."³⁴

Time was running out for Steele and his men. The advance units of Union General James H. Carleton's California Column

were fast approaching the Mesilla Valley. The 4th and 5th Sibley regiments and part of the 7th had already started down the road to San Antonio, taking nearly all remaining means of transportation with them. As Steele's need for food and transportation became desperate, his men made brutal foraging sorties into Mexican villages. A raid was made on Socorro, Texas, just south of El Paso, on 15 June. A Rebel private wrote, "We killed 20, wounded many, besides destroying their church and otherwise damaging the town. Two 6-pounder field pieces, belonging to Capt. Teel's battery, were engaged in the fight."³⁵

Except for a tantalizing report from General Carleton before entering El Paso, this is the last mention of Steele's guns. Another raid on Socorro on 3 July was reported by the same private in a letter to a Houston newspaper: "We were surrounded and charged upon by 50 Mexicans, who killed one of our men and took all the rest but five prisoners."³⁶

Finally, on 12 July Steele and his men—and presumably his guns—began to evacuate El Paso. He wrote to Richmond, "a considerable quantity of stores that could not be sold and which were too weighty for transportation, such as horse and mule shoes, cannon ammunition, tents, etc." were abandoned and left behind. He mentions no guns.³⁷

On 22 July General Carleton, writing from Tucson, said: "It is said that Teel's Battery, the one taken at Valverde, had been attacked some 30 miles below Ft. Bliss and taken by the people, who hovered around it to the number of 1500." He was repeating what he had heard from a Union officer who had been Steele's prisoner at Mesilla and was released before the retreat to San Antonio. This apparently exaggerated rumor might have pertained to the second raid on Socorro, which is fifteen, not thirty miles below Fort Bliss, and the "1500 Mexicans" may have numbered fifty, as in the Rebel's letter.³⁸

Carleton reported on 9 September to Canby: "I marched with a small cavalry force down the Rio Grande to a point below Fort Quitman. I recovered at El Paso some 12 wagon loads of hospital and quartermaster stores." He did not report any guns found

This apparently exaggerated rumor might have pertained to the second raid on Socorro, which is fifteen, not thirty, miles below Fort Bliss, and the "1500 Mexicans" may have numbered fifty, as in the Rebel's letter.

abandoned by Steele. Nor did the California Column bring any 12-pounder field howitzers with its accompanying Light Battery A, 3rd Artillery.³⁹

If Carleton did not recover any Valverde cannon, what became of them?

The *San Antonio Herald* of 12 July 1862 reported:

The splendid battery captured . . . at Valverde arrived in town last Monday. It consists of six brass pieces, two twelve-pound field pieces, three six-pound guns and one twelve-pound howitzer.

This count matches the Fort Craig report of loss at Valverde; the battery was intact.

The Confederate Research Center of Hillsboro, Texas, has generously provided material covering the history of the battery after its return from New Mexico.

In mid-July of 1862 the remnants of the Sibley Brigade were furloughed, but the Valverde Battery was not; it proceeded to Marshall, Texas, reportedly with its six-gun battery intact. By March of 1863 the unit was in southern Louisiana with the reactivated Sibley Brigade, fending off Union forces under General Nathaniel Banks and a significant factor in the April 1863 capture of the Federal gunboat *Diana*. It was later recaptured by the Federals, who also took one gun from the Valverde Battery, presumably the mountain howitzer, since no more is heard of it. This left three 6-pounders and two 12-pounders. By June 1863 the Federals pulled back and General Sibley was succeeded by Tom Green as brigade commander. The Valverde Battery returned to Texas to wait out the winter.⁴⁰

In December 1863 a new battery, the *Grosse Tete*, was formed and two 12-pounder howitzers were taken from the Valverde to help outfit it. The Valverde Battery retained three 6-pounders and gained two 3-inch rifled guns captured from the enemy. The battery was in the thick of the Red River Campaign of March and April 1864, when General Banks was soundly whipped and Texas was safe.⁴¹

At war's end, the Valverde Battery, minus one 6-pounder lost in battle, returned to Fairfield in East Texas and the four remaining guns were buried. They were later exhumed and the two brass 6-pounders captured at Valverde in 1862 were sold for scrap to save an old Confederate veteran from a life of penury. The two 3-inch iron rifles are on display at Fairfield and Mexia, Texas.⁴²

And what of the two Valverde 12-pounder howitzers given to

the Grosse Tete Battery? Teamed with two 10-pounder Parrott rifles, they became a formidable force at Pleasant Hill, harassed Banks' Federals retreating down the Red River, forced the capture of a transport steamer and two gunboats, and generally wreaked havoc on the retreating Federals until the surrender on 1 June 1865 at Alexandria on the Red River.

And now for a surprise: the Confederate armies had a tradition of engraving on artillery pieces captured from the enemy the names of their own men who died in the action of the capture. In an inventory report from the Grosse Tete Battery, their two 12-pounder field howitzers are identified by founder, year, and muzzle face number. Both were cast by N. P. Ames of Springfield, [Massachusetts] who also cast the Eastwood piece.⁴³

The 12-pounder cast in 1846 bears the muzzle number 38 and the inscription:

No. 1 Valverde Lt. Col. Sutton
Capt. Buckholts Feb 21st 62

Lieutenant Colonel Sutton was second in command of Colonel Steele's 7th Regiment, Sibley Brigade, killed at Valverde. Captain Buckholts was in command of Company E of Colonel Reily's 4th Regiment, killed at Glorieta.

The 12-pounder cast in 1842 bears the muzzle number 12 and the inscription:

No. 2 Valverde Maj. Lockridge
Capt. Adair Feby 21st 62

Major Lockridge was third in command of Colonel Green's 5th Regiment, Sibley Brigade, and was killed at Valverde. Captain Adair, mortally wounded at Glorieta, commanded Company H of Steele's 7th Regiment.⁴⁴

This information identifies the Grosse Tete 12-pounder howitzers as the ones taken from Captain Alexander McRae at the Battle of Valverde on 21 February 1862.

More than 180 12-pounder field howitzers survived the War Between the States, but the two with the Grosse Tete Battery did not. Perhaps they were thrown into the Red River at Alexandria, Louisiana, before the surrender, giving rise to the story told by Teel and others of the final resting place of the Valverde guns.

In a 1960 letter to *Password*, referring to the McMaster and Ruhlen article, Martin Hardwick Hall asked if the Eastwood High

School cannon was not part of the Valverde Battery, where did it come from?⁴⁵

Following the war, when Union forces reoccupied Fort Bliss, the first post return was filed for October 1865. It listed as ordnance inventory "1-6# gun & 1-12# howitzer." Absent evidence to the contrary, we must presume these guns were brought in by the reoccupying Federals. The returns from this year forward list ordnance as a "6-pounder and a 12-pounder howitzer" or just as "two field pieces."⁴⁶

In 1867 the Rio Grande flooded, washing away many of the adobe buildings at Fort Bliss which was at Magoffinsville. The post was moved to higher ground and designated as Camp Concordia in March 1868. The "two field pieces" continued to be carried in inventory.⁴⁷

Camp Concordia proved to be an unsatisfactory location and the garrison was relocated near downtown El Paso. The field pieces were sold at that time, according to the *El Paso Times* of 4 July 1895:

When old Fort Bliss at Concordia was abandoned in 1876, two brass cannons, among other government property, were sold at auction and Joseph Schutz bought them, expecting to sell them to the Mexican Government. The cannons were never sold, and in 1877 Lt. T. F. Davis of the U.S. Army borrowed one of the guns and took it to San Elizario to be used in suppressing the Salt Riot.⁴⁸

The cannon next were mentioned in a 1905 news article on the occasion of the presentation of the guns to the Pioneers Association of El Paso County.

About the year 1894 D. W. Reckhart, President of the famous McGinty Club, was one day rummaging around in the building which was formerly the U.S. Customs House and ran across the carriages of these guns in a corner and after a search unearthed the two cannons hidden under the floor. Investigation brought to light that they belonged to Samuel and Joseph Schutz, who were prevailed upon to turn them over to the McGinty Club.⁴⁹

In the meantime Trevanion Teel, Baylor's artilleryman, had resumed his law practice after the Civil War and had found it convenient to settle in the El Paso area by the year 1885. Consequently, he was in town to hear of and possibly witness the 1894 discovery of the old guns by Dan Reckhart of the McGinty Club. Teel's memory shifted into gear and he began spinning his version of the history of the cannon.⁵⁰

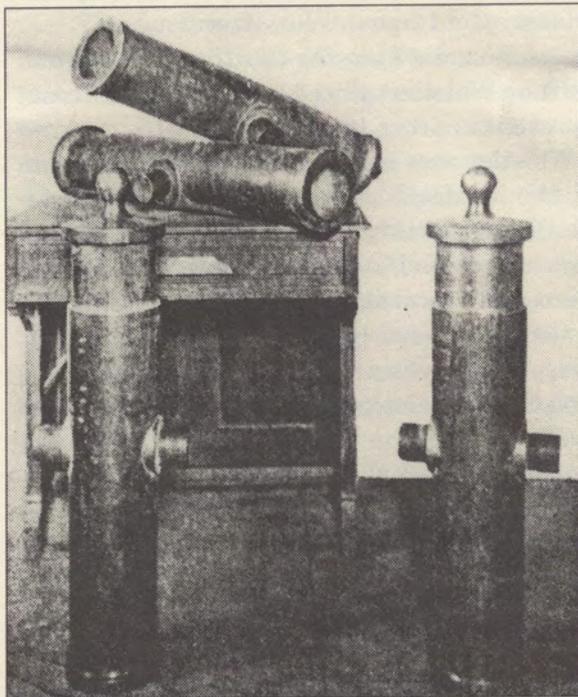
An account of Teel's pointing out bloodstains from the Valverde battle on one of the guns is found in Whitford's *Colorado Volunteers*, published in 1906. Unfortunately, he does not mention the caliber of the gun, only that Teel maintained that "the axle of one of the guns had been weakened by a round shot" and for that reason it was left in El Paso. Teel indicated the bloodstains were those of Union Captain McRae and Confederate Major Lockridge, "both of whose bodies sank and rested across this gun." This account was used by McMaster and Ruhlen to validate the authenticity of the Eastwood howitzer.⁵¹

Yet, according to the 1905 news story cited above, Teel had given a different description of the bloodstained cannon:

Major Teel pointed out these bloodstains on one of the cannons to Mr. Reckhart. He said the cannon was known as the "Blue Whistler" and he remembered it well. It is a brass piece of about 3½ inch caliber and somewhat different in shape at the muzzle from the other, which is of 4¾ inch caliber and shoots about a 12-pound round shot.

This is obviously the description of a 6-pounder gun, not a 12-pounder field howitzer.⁵²

Two news accounts from the 1890's would indicate that the McGinty Club already had the 12-pounder in 1894 when plans



Four of the brass howitzers buried by General Sibley at Albuquerque while on his retreat down the Rio Grande valley. From Whitford, William C., Colorado Volunteers in the Civil War: The New Mexico Campaign of 1862.

called for it to be fired from McGinty knob at sunrise of 4 July. A year later, according to the *Herald*, Samuel Schutz presented the club a 6-pound brass cannon "cast by N. P. Ames, Founder, Springfield, Mass., in 1845." It was to be fired in celebration of the Fourth of July that year.⁵³

For the ten years the McGinty Club had the two cannon, they roared for Independence Day, welcomed visiting dignitaries and presidents, and were photographed with the McGinty Band dressed in full regalia.

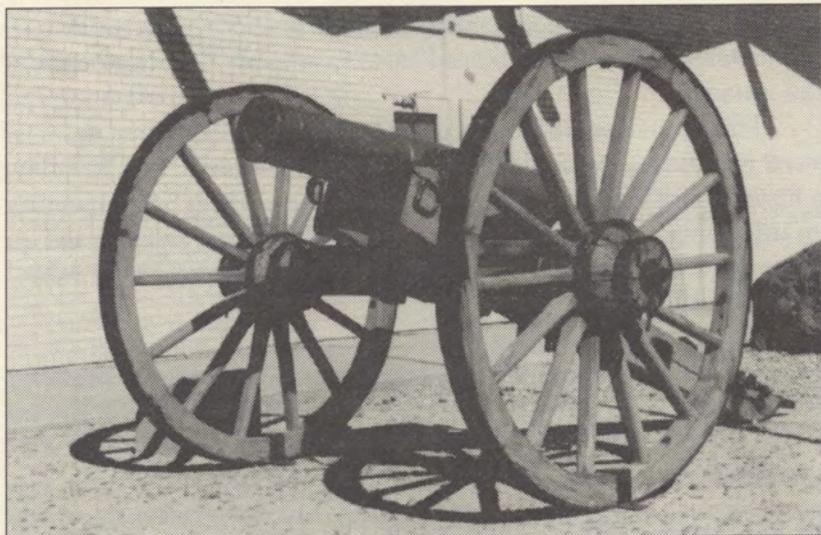
Another five years passed before the Pioneers Association took possession of the guns. By March 1911 the 6-pounder Blue Whistler was in place beside the El Paso City Hall, only to be purloined in the predawn hours of St. Patrick's Day with the help of Teel's widow and two local physicians. The gun was delivered in Mexico to Francisco Madero's revolutionary army which promptly put it to use.⁵⁴

Coincidentally, the next day another newspaper reported the "Big Brother" of the stolen cannon was safely in the basement of the Chamber of Commerce where the Pioneers had an exhibit of early El Paso relics. It was described as a "five inch [4³/₄] bore brass-barreled gun on rickety old wheels with a number of spokes fallen out." It is obviously the 12-pound howitzer.⁵⁵

The Pioneers Association, not knowing that Teel's widow and friends had stolen the Blue Whistler, placed a guard on the Chamber of Commerce to prevent another theft.⁵⁶

While the Blue Whistler was seeing revolutionary action in southern Chihuahua, the Mexicans gifted El Paso with a home-made cannon used in their capture of Ciudad Juárez. On 18 August 1911, the forces of Porfirio Diaz having been cleared out of Chihuahua, the Madero army returned the Blue Whistler, which resumed its place in City Hall Park beside "Long Tom," the gift cannon. The next year, a "rockery" was built in San Jacinto Plaza, on which the Blue Whistler was displayed until 1929, when there was another short-lived revolution in Mexico. The old piece was then relegated to Washington Park.⁵⁷

The El Paso Times in 1936 reported that the Whistler had been moved back downtown to the front yard of the American Legion Home on Santa Fe Street. Dr. Ira J. Bush, who had been its kidnapper in 1911, was appealing that it be returned to its former position in San Jacinto Plaza. A small controversy arose as to whether this gun or another "in the basement of the court-



The Pioneer-Eastwood Howitzer. Photo by the author, 1995

house” was an authentic McGinty piece. The 12-pounder with the rotten wheels was still there, “along with other venerable relics,” and Dr. Bush made it clear that both had belonged to the McGintys many years earlier.⁵⁸

The famous Blue Whistler, along with two of the mountain howitzers unearthed by Major Teel in Albuquerque and many other pieces of statuary and ordnance from parks around the nation became victims of patriotic zeal during World War II and were melted down to make modern weapons.⁵⁹

The same year that Dr. Bush appealed in vain for the city fathers to remount the Whistler in the Plaza, a benevolent fate stepped in to save the crippled 12-pounder howitzer from a future of oblivion. In 1936, the centennial of Texas’ independence from Mexico, money was appropriated by the Legislature for a local project, the building of the Centennial Museum on the grounds of the Texas College of Mines and Metallurgy, now University of Texas at El Paso.⁶⁰

The Pioneers Association, still the owner of the gun, fitted it with a new set of wheels and placed it on the lawn in front of the new museum. The Association also lent a number of other artifacts for display inside. Scarcely a decade later, the 12-pounder fell victim to the annual football rivalry between the Miners and New Mexico A&M, now New Mexico State University. It was lassoed and given a wild midnight ride by the boys from New

Mexico, resulting in appreciable damage to the wheels and carriage. Once again it was stored in a basement, this time that of the museum.

The cannon sat forgotten until McMaster and Ruhlen in *Password* certified it as one of "The Guns of Valverde." Bob Bradley, a history buff and then principal of Eastwood High School, acting on information in the article, had, by 20 June 1967, negotiated an agreement with the Pioneers to display the cannon at his school on indefinite loan.⁶¹

Students at Eastwood raised a large sum of money for restoration of the cannon to its original condition. On 24 September

Much as those who had ancestors at the Battle of Valverde would like to believe that the Eastwood/Pioneers cannon was one of McRae's guns, the evidence indicates otherwise. They must for now content themselves in knowing that this one is the only howitzer of its kind in Texas...

1968 a formal dedication ceremony was well attended by dignitaries and history buffs. The speaker was Dr. Eugene Porter, history professor at the college and the first editor of *Password*.⁶²

From that day on, the howitzer became known as the "Blue Whistler," despite the fact that the gun known by that name in 1911 had been a 6-pounder and had gone to the World War II scrap drive. Photos of the piece that served in the Mexican Revolution show a different muzzle configuration from the one at the school.

The howitzer gained national recognition in 1973 in an article in *American West* magazine titled "The Blue Whistler," which drew on Mary Teel Harper's 1937 article.⁶³

In 1997 students, faculty, staff, and alumni of Eastwood High School joined the Pioneers Association in contributing funds toward a much-needed restoration of the cannon. It was placed inside the building on a platform in the foyer, no longer at the mercy of the elements.

Much as those who had ancestors at the Battle of Valverde would like to believe that the Eastwood/Pioneers cannon was one of McRae's guns, the evidence indicates otherwise. They must for now content themselves in knowing that this one is the only howitzer of its kind in Texas and deserves to be given a public place of honor.

After all, it was a McGinty gun and that's no small part of El Paso history. One can almost hear it volunteering to sound off again on the Fourth of July.

FRANK JENKINS is a retired fourth-generation Texan and longtime El Paso-
an who attended valley schools, completed high school in east Texas and at-
tended Texas College of Mines and Metallurgy now The University of Texas at
El Paso. He was a photographer in the United States Navy during World War
II. Postwar years were spent in California as a printer for the United States
Immigration service, the Apollo Moon Project, and various commercial estab-
lishments. His interest in history began with the discovery late in life that six
of his ancestors had been Confederate soldiers, two of whom had been with the
Sibley Brigade in its New Mexico and Louisiana campaign.

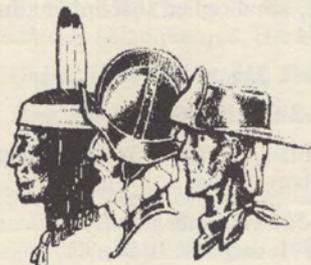
ENDNOTES

1. Franklin G. Smith, "Muzzle-Loading Cannon in El Paso: The Artillerist's View," unpublished ms., 1996, in possession of the author. Smith, now retired, was long associated with the National Park Service in its restorations of Fort Union, Fort Davis, and other historic sites in the Southwest. He is considered an authority on period ordnance. He prefers to distinguish between a "gun" and a "howitzer," but since the men who fired them used the terms interchangeably, those uses will be applied here. Richard McMaster and George Ruhlen, "The Guns of Valverde," *Password*, vol. 5 no. 1 (January 1960).
2. Jerry Thompson, *From Desert to Bayou: The Civil War Journal and Sketches of Morgan Wolfe Merrick* (El Paso: Texas Western Press, 1991), 6, 102n8.
3. Van Dorn to "RIP" Ford, 27 May 1861, and Van Dorn to Montgomery, Alabama, 3 June 1861, *War of the Rebellion: A Compilation of the Official Records of the Union and Confederate Armies* (Washington: U.S. Government Printing Office, 1880-1901), Series 1, 1883. Hereafter, O.R.
4. McMaster and Ruhlen, 33.
5. Donald Frazier, *Blood and Treasure—Confederate Empire in the Southwest* (College Station: Texas A&M Press, 1995), 60. Frazier is quoting Major Lynde, O.R.-4, p. 6. Martin Hardwick Hall, *Sibley's New Mexico Campaign* (Austin: University of Texas Press, 1960), 27. Hall prefers Colonel Baylor's report, O.R.-4, p. 16. Baylor to Magruder, 29 December 1862, O.R.-15, p. 916. Hubert Curry, "Sun Rising on the West," Crosby County Pioneer Memorial, 1979, 65.
6. Jerry Thompson, *Desert Tiger—Captain Paddy Graydon and the Civil War in the Far Southwest* (El Paso: Texas Western Press, 1992), 28.
7. Hall, Frazier, Thompson.
8. David B. Gracy II, ea., "New Mexico Campaign Letters of Frank Starr, 1861-1862." *Texas Military History* 4 (Fall 1964), 175.

9. William Clarke Whitford, *Colorado Volunteers in the Civil War: The New Mexico Campaign in 1862* (Glorieta, NM: Rio Grande Press, 1971; orig. pub. 1906), 57.
10. McMaster and Ruhlen, 27; Whitford, 138.
11. Microfilm files, Confederate Research Center, Hillsboro, TX.
12. John Taylor, *Bloody Valverde* (Albuquerque: University of New Mexico Press, 1995), 153-54. Hall, 99. David Gracy, "New Mexico Campaign Letters of Frank Starr, 1861-1862," *Texas Military History*, Fall 1964.
13. Scurry to Jackson, 31 March 1862, O.R.-9, p. 543. Don E. Alberts, editor of *Rebels on the Rio Grande: The Civil War Journal of A. B. Peticolas* (Albuquerque: University of New Mexico Press, 1984), has explored on the ground much of the trail of the Sibley Brigade and has published definitive studies of the Battle of Glorieta and the skirmish at Peralta. Personal correspondence, June 1997.
14. Alberts, correspondence. Ovando Hollister, *Boldy They Rode* (Golden, CO: Golden Press, 1949), 61. Whitford, 108. Hall, 149.
15. Franklin Smith says a Santa Fe merchant named Candelaria recovered much of the abandoned equipment from Glorieta, some of which was at the Santa Fe Museum until given to the World War II scrap drive. Frazier, 228-29. Hall, 166, 172.
16. Teel letter to *Albuquerque Daily Citizen*, 26 August 1889, quoted in Howard Bryan, "The Man Who Buried the Cannons." *New Mexico Magazine* (January 1962), 13-15, 35. Whitford alludes to a Santa Fe burial, 129-30. Ralph E. Twitchell, *Old Santa Fe* (Santa Fe: Santa Fe Publishing, 1925), 385. Howard Bryan personal correspondence, February 1997. Alberts correspondence June 1997. Smith ms.
17. Donaldson to Paul, 10 March 1862, O.R.-9, p. 527.
18. Whitford, 137; photograph of four of the howitzers opposite page 138; Bryan, "The Man," 14, lists founder dates for eight howitzers unearthed 19 August 1889; William A. Keleher, *Turmoil in New Mexico* (Albuquerque: University of New Mexico Press, 1952), 207, 208. The Keleher account, although presumably based on newspaper versions of the event, is flawed in stating only six guns were recovered. Writing in 1952, Keleher apparently had forgotten that two of the pieces had been given to the World War II scrap drive. See Smith ms.
19. Hollister, 92, 93; Hall, 181, 182; Canby to Headquarters, *Union Army Operations in the Southwest* (Albuquerque: Horn & Wallace, 1961), 37.
20. Connelly to Seward, *Union Army Operations*, 101.
21. Graydon to Paul, 14 May, *Union Army Operations*, 107.
22. Thompson, *Desert Tiger*, 77n187.
23. Roberts to Thomas, 23 April, *Union Army Operations*, 102; Don E. Alberts, ed., *Rebels on the Rio Grande: The Civil War Journal of A.B. Peticolas* (Albuquerque: University of New Mexico Press, 1984), 110; Smith, "Muzzle Loading Cannon," reports this howitzer's tube markings were noted in 1959 and it "is almost certainly a Sibley piece."
24. Alberts, 111.

25. Alberts, 113; Gracy, *Starr Campaign Letters*, 181.
26. Alberts, 113, 114.
27. Alberts, 114; Alberts correspondence June 1977.
28. See map folded into *Union Army Operations in the Southwest*.
29. Alberts, 114n87.
30. Taylor, *Bloody Valverde*, 120; *El Paso Daily Herald*, 10 March 1899; Robert Julyan, *The Place Names of New Mexico* (Albuquerque: University of New Mexico Press, 1996), 317.
31. *El Paso Times*, 14 March 1937; Howard Bryan, correspondence with author, February 1997.
32. Hall, *Sibley's Campaign*, 215; Gracy, *Starr Letters*, 182; Canby to Washington, 18 May, *Union Army Operations*, 108; Theophilus Noel, *A Campaign from Santa Fe to the Mississippi* (Houston, Texas: Stagecoach Press, 1961), 42.
33. Alberts, 129; Frazier, *Blood and Treasure*, 273.
34. Martin Hardwick Hall, "Native Mexican Relations in Confederate Arizona, 1861-1862," *Journal of Arizona History* Autumn 1967: 175.
35. Hall, "Native Mexican," 171-78.
36. Hall, "Native Mexican," 171-78.
37. Steele to Cooper, 18 July, O.R.-9, 721-22.
38. Carleton to Drum, 22 July, O.R.-9, 554.
39. Carleton to Canby, 9 September, O.R.-9, 696; McMaster and Ruhlen, "Guns," 33.
40. "Captain T. D. Nettles and the Valverde Battery," *Texana*, vol. 3 no. 3 (Fall 1964): 1-23; Banks to Halleck, 23 April 1863, O.R.15, 300. Trevanion Teel was not attached to the battery while it was in Louisiana but must have heard of its action with these remaining guns and concluded late in life that only five returned from New Mexico.
41. *Guide to Louisiana Confederate Military Units*, 26, 27.
42. "Captain Nettles," 18, 19.
43. E. T. Sykes, "Names Inscribed on Captured Artillery," *Confederate Veteran*, vol. 28, p. 128; hand-copied inscriptions from *Grosse Tete Battery Report*, 17 June 1864.
44. Martin Hardwick Hall, 215.
45. *Password*, vol. 5 no. 2 (April 1960): 79-80.
46. Post Returns, Fort Bliss, Texas, 1354-1871, microfilm, Confederate Research Center, Hillsboro, Texas.
47. Richard McMaster, *Musket, Saber and Missile: A History of Fort Bliss* (El Paso: Complete Printing, 1962), 28, 30.
48. Conrey Bryson, *Down Went McGinty* (El Paso: Texas Western Press, 1977), 50.

49. Pioneers Association of El Paso County Scrapbook, El Paso County Historical Society Archives, p. 88.
50. Nancy Hamilton, "Tales of Major Teel," unpublished ms. in possession of author.
51. Whitford, 138-40. Teel may have been remembering the 6-pounder struck on the muzzle at Glorieta and "dismounted." One could speculate that this gun's tube was placed in a wagon at the Salado burial site and its carriage burned, as noted by Paddy Graydon.
52. It is reasonable to assume that there were bloodstains on the 6-pounder Teel examined, as there might have been on the howitzer McMaster and Ruhlen saw at Texas Western College, but there is no evidence to suggest that either piece had been a McRae gun.
53. Bryson, 49, 64, 65.
54. Pioneers Scrapbook, interview with Dr. I. J. Bush from *El Paso Herald*, 6 June 1911.
55. Pioneers Scrapbook, *El Paso Herald*, 18 March 1911.
56. McGinty Club File, El Paso Public Library, citing *El Paso Herald*, 10 April 1911.
57. McGinty Club File, citing *El Paso Times*, 3 June and 19 August 1911 and 22 April 1929 and *El Paso Herald*, 29 February 1912.
58. McGinty Club File, citing *El Paso Times*, 7 January 1936.
59. *Albuquerque Journal*, 10 August 1942; *El Paso Herald-Post*, 24 September 1942.
60. Author interviews with student witnesses.
61. Bryson, 60; Pioneers Association files, "Agreement between the Pioneers Association of El Paso County, Texas, and Eastwood High School and Ysleta Independent School District, 20th day of June, A.D. 1967."
62. Bryson, 61, 62.
63. *American West*, vol. 10 no. 3 (May 1973): 32-35.



Eugene O. Porter Award

The Eugene O. Porter Award, which was established in 1975 in memory of the first editor of *Password*, was awarded at the quarterly meeting of the El Paso Historical Society held on May 16, 1999. This award is made each year to the author of the article deemed outstanding of those articles published during that year.

It is financed by contributions to the Porter Memorial Award Fund. The award for the year 1998 was given for the article "Don Santiago Magoffin" written by Robert W. Miles, who was born in Marfa, Texas and attended schools in Alpine, Fort Davis, and El Paso. He earned a bachelor of arts degree in journalism and a masters degree in history, both from the University of Texas at El Paso. He was a reporter for the *El Paso Times* and served as a staff writer for the *Pipelinier*, the house organ for the El Paso Natural Gas Company. Bob Miles was one of the founding members of the El Paso Corral of the Westerners. He was the first park superintendent at the Magoffin Home State Historical Park. He also served at Hueco Tanks State Historical Park and at Balmorhea State Park. He retired recently from state service, lives in Fort Davis, Texas, and is doing free-lance writing.

The selection is made each year by the Editorial Board of *Password*, the Associate Editors, and the Editor.



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Río, Mesa, and Sierra: An Environmental History of the Greater El Paso Area

PART I

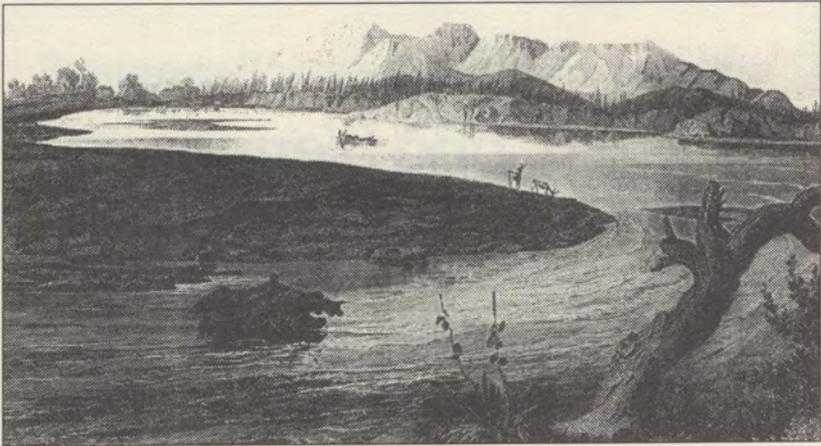
By Dan Scurlock

The greater El Paso area encompasses the Rio Grande Valley from Las Cruces to Fabens, the adjacent bajadas and mesas extending northward to the Organ Mountains, eastward to the Hueco Mountains, westward across the Franklin Mountains to the Potrillo Mountains, and southward to the Juarez Mountains, or Sierra de Guadalupe, in northern Chihuahua. Historically, this area was more ecologically diverse and dynamic than it is today, experiencing cyclic wet periods and droughts, and a variety of human-generated modifications of the environment over a period of more than three centuries. Environmental impacts and changes have become progressively severe over time in west Texas and southern New Mexico due to the steady growth of human population and the advance of technology which has become more complex and more efficient in order to meet the ever-growing demands for various resources.

Geology-Physiography

The Fort Bliss-El Paso-Las Cruces area is characterized by alternating desert basins, such as the Hueco Bolson, and block-faulted mountain ranges, such as the Franklins. The Hueco Mountains and the Sierra de Juarez as well as the Franklin Mountains were formed about forty-seven million years ago. The other major feature of this landscape is the Rio Grande Valley and the associated terraces.¹

Three of the major mountain ranges in the area consist of sedimentary formations overlying a base or core of igneous rock.



The Rio Grande near Frontera. Engraving by James D. Smilie. Courtesy of the El Paso Public Library.

These sedimentary formations were deposited across the area by episodic appearances and retreats of shallow marine seas which occurred about one billion years ago.

The Potrillo Mountains, located about 35 miles west of Fort Bliss, are volcanic in origin. Basalt flows and cinder cones from eruptions of about 100 volcanoes make up this volcanic field, the oldest part of which is several hundred thousand years in age. Lava from these sources periodically flowed until about 40,000 years ago.²

The block-faulted ranges are still gradually rising, while the Hueco Bolson, located between the Franklins and Huecos, is slowly sinking. This basin was formed about forty-seven million years ago when the Franklins were thrust upward and the deep, sedimentary strata to the east began to sink. A huge, shallow lake, named for the Spaniard Cabeza de Vaca, subsequently filled much of the basin. Some twenty-seven million years later the basin began to fill with sediments transported by the ancestral Rio Grande and those derived from numerous landslides from the east side of the Franklin Mountains. River and lake deposits, up to 9000 feet, lie under Fort Bliss.³

At one time, the ancestral Rio Grande flowed on the east side of the Franklins. As this river moved southward, across the El Paso area, it cut downward into thick beds of the sand and mud previously deposited. More than one million years ago Lake Cabeza de Vaca overflowed near the Quitman Mountains southeast of Fort Bliss, at which time the river began to form its present valley, which

is now about 400 feet deep in sediments. As the river continued to down-cut, sands some 1,500 feet thick were deposited by the river and subsequently filled with fresh ground water which is the major source of water supply for Fort Bliss and El Paso today.⁴

A "blue limestone," mined by the Mount Franklin Quarry Company in 1913-1915, is probably El Paso Limestone or Hueco Limestone.⁵ This limestone was used in construction of some of the early buildings at Fort Bliss, while Bliss sandstone, also found in the Franklin Mountains, was also used as an early construction material at the post.⁶

Clay for fired bricks, which were used as a construction material at the post and in town between the 1880s and 1920s came from deposits near the Rio Grande. Two local companies, El Paso Brick and International Brick, furnished bricks to Fort Bliss under an army contract. Some of the bricks supplied by these companies were of poor quality, so the army also contracted with the St. Louis Pressed Brick Company and a company from Ennis, Texas. These were delivered to Bliss via the Missouri Pacific Railroad.⁷

In the late 19th and early 20th centuries, severe overgrazing, interacting with periodic droughts, caused wind-blown erosion of the sandy, desert soils. Over much of this Chihuahuan desert area, dunes have formed, which are now generally stabilized by mesquite or scrub oak thickets.⁸

Climatology

Climatic elements such as precipitation types and patterns, temperature patterns, wind, solar radiation, frosts and freezes, and/or evaporation affect other environmental components, activity, and health. Effects of intense rain, drought, floods, deep snow, hail, freezes, lightning, and intense heat on such activities as hunting, fishing, gathering, farming, ranching, mining, and travel have been a relatively longtime interest of archeologists, climatologists, and environmental historians working in the Southwest. The siting of camps, dwellings, fields, villages, livestock facilities, mining operations, trails, roads, and military posts were generally related, at least in part, to one or more of these climatological elements. This is also generally true for design and orientation of buildings and other structures.⁹

The historical relationship between climate and human health has been investigated in the Southwest for some time. Smallpox

epidemics occurred during extreme droughts. The "treatment" of tuberculosis by moving those affected to the drier and sunnier climate of the region was recommended by health professionals beginning at the end of the last century.

Variations within precipitation and other weather phenomena, coupled with various human activities, have led to serious environmental problems such as wind and runoff erosion, more intensive and frequent flooding on the Rio Grande, fluctuations or exhaustion of surface or shallow ground water supplies, and depletion of game animals.

The earliest climatic observations for the El Paso area, albeit anecdotal, date to the first Spanish entradas in the late 1500's, subsequent Spanish travel and trade from 1600 to 1800, the missionization and settlement from 1659 to 1800, and early Anglo-American travel and trade from 1822 to 1850. The earliest scientific temperature and precipitation records were made by the United States military personnel at Fort Bliss beginning in 1850.¹⁰ Later, a United States Weather Service station was established at El Paso to observe and record the local weather. Salient characteristics of this high desert include an average annual precipitation below ten inches, low relative humidity, high solar radiation, and moderate but wide ranges of day and night temperatures as well as seasonal temperatures, and high evaporation and transpiration rates.¹¹



El Paso Brick Company in 1909. Courtesy of the El Paso Public Library.

Summer precipitation results from the Bermuda pressure cell which circulates moist, unstable air from the Gulf of Mexico over the region. Convictional heating of this moisture produces intense, sometimes violent thunderstorms, which can cause flash flooding. Winter moisture, primarily rain, comes from wet, Pacific fronts moving easterly.¹² Snow in the area is rare today, but during some periods of the "Little Ice Age" between 1430 and 1860, snowfall probably was greater during winters that were longer than those of today. Almost half of the average annual rainfall for the area falls from July to September, during the growing season.¹³ Most summer rain is of high intensity and is associated with thunderstorms.

Lower temperatures, averaging probably a few degrees Fahrenheit less than those of today, prevailed intermittently over most of the years between 1430 and 1860. Since this "Little Ice Age" there has been a general warming trend. This period of the cooler temperatures, shorter growing season, and relatively heavy snowfall, has been attributed to large-scale volcanic and/or sunspot activities.¹⁴ In northern Mexico and the Southwest these more severe climatic conditions adversely affected agriculture and the gathering of wild plants, as well as ranching and travel.

The hottest temperature ever recorded in El Paso, 113° Fahrenheit, occurred on June 28, 1944, and the longest period of consecutive days of 100° or above were recorded from June 10th through the 30th in 1980. In recent years there has been an average of eighteen days when the temperature reached 100° or above in the summer.¹⁵

These high temperatures are due to a relatively low elevation, southerly location, and to the frequent and intense daily, seasonal, and annual solar radiation. Situated within the sun belt, El Paso has received 88.3 percent of potential sunshine annually in recent decades. On the average, only 15 days are cloudy each year.¹⁶

Winds of the area are generally from the west, although in July they are east-southeast, and average eight miles per hour. April winds are the strongest, averaging ten miles per hour from the west-southwest. January and October winds average seven miles per hour and are from the northwest and south-southwest respectively.

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The Rio Grande and its Valley

The Rio Grande, the fifth largest river in North America, flows 1,885 miles from southern Colorado to extreme southern Texas, where the river empties into the Gulf of Mexico. Its discharge area is 32,207 square miles. The Rio Grande flows for about 65 miles through the El Paso Valley from Mesilla, New Mexico to Fabens, Texas with a total drainage area of 8,000 square miles. There are no major tributary drainages in the El Paso area.¹⁷

Early in the historic period members of the various Spanish expeditions applied different names to the Rio Grande:¹⁸

<u>YEAR</u>	<u>EXPEDITION</u>	<u>NAME</u>
1540	Coronado	Tiguex
1540	Coronado	Tibex
1540	Coronado	Nuestra Señora
1581	Rodriquez- Chamuscado	Guadalquivir
1582-83	Espejo	Rio del Norte, Rio Turbio
1590	Sosa	Rio Bravo
1598	Oñate	Rio Bravo and Rio del Norte

From 1598 until the arrival of the Europeans, the river above El Paso was generally known as the Rio del Norte. In 1776, Fray Dominguez explained:

The river is called the Rio del Norte because it comes from the north many leagues beyond Taos. . . . It is so many leagues long that even though the settlers of these regions have penetrated very far north for various purposes again and again, they have not found the source of this river.¹⁹

The reach of the river from El Paso to the confluence with the Rio Concho was generally called the Rio Bravo del Norte in the colonial period. From this point to the Gulf of Mexico, the river was known as the Rio Grande.²⁰

As a dynamic river in the historic period, the Rio Grande below El Paso meandered across its four to six mile wide flood-plain during periodic floods, altering its course and sometimes moving into old channels, forming a degrading stream with numerous but short-lived islands and sandbars. The prominent meanders, or *muleros*, of the river were called *Las Vueltas del Rio* by the Spanish explorer Espejo in early 1583.²¹ Channels would be scoured of sediments, and new materials would be deposited on the valley floor during these high flows. New *esteros* (swamps), *ciénegas*

(marshes), and *charcos* (ponds) would be created and existing ones would be recharged with water. Old river channels were sometimes partially or totally filled with flood-water during a change in the course of the river.²²

These periodic floods washed away churches, homes, agricultural fields, and *acequias* until the early part of this century before construction of upstream flood control structures in southern New Mexico. High flood water also adversely affected river fords, which were sometimes destroyed, covered with "quicksand," or totally abandoned when the river shifted.²³

Some of the periodic floods resulted in the formation of a new channel, such as that of 1773, when the river's course near Socorro del Sur was changed. Perhaps the most dramatic channel shift "moved" Socorro, San Elizario, and Ysleta from the Mexico side of the river to the United States side in 1829. The three communities were actually left on an island, *La Isla*, some twenty miles in length and two to four miles in width, as the former river channel to the north of these villages was usually filled with standing or flowing water. Three major historic channels, now on the Texas side of the river, have been documented by the 19th century testimony, by maps, and by aerial photographs of the San Elizario area.²⁴

The mean flow of the Rio Grande began to diminish in the 1870s due to upstream diversions and a series of severe droughts. From that time to the early part of this century, a shortage of water for domestic and agricultural use and channel changes due to major floods drew the attention of governmental officials on both sides of the river. Discussions about a flood control dam, equitable water appropriation, and property rights to land whose boundaries were altered by the shifting riverbed followed. There was an increase in sediment loads carried by the Rio Grande due to intensive grazing, logging, and so on upstream, and this process, added to the decrease in the volume and velocity of flow of water, caused the riverbed to rise, or aggrade. This led to more intensive and extensive flooding as runoff was faster on the decimated, and in many locations, largely denuded vegetation across the watershed. Flood-waters from the shallow bed of the river overflowed the river banks more frequently. As a result, property damage became more frequent and severe. In addition, as the river aggraded, the associated shallow water table below the flood plain rose.²⁵

In some locations in the El Paso Valley during this period of 1870 to 1920, the roots of fruit trees reached this shallow ground



"Big" flood in May 1897. Photo taken from the dome of the County Court House on First Street between South Campbell and South Florence. Courtesy of the El Paso Public Library.

water, precluding the need for irrigation. In other locales, where the level rose near to the ground surface, trees and grape vines were killed and topsoil became waterlogged. Drainage of excess water from irrigation had been a problem since the colonial period, and contributed to the water logging of agricultural land. Conversely, as the water table dropped due to drainage canal construction and the deepening of major *acequias* in the early 1900s, the roots of these perennials could no longer draw moisture from the lowered water table.²⁶

The International Boundary and Water Commission was reorganized in early 1889 to study Rio Grande channel shifts caused by erosion of river banks both slow and rapid. In 1905, the Convention for the Elimination of Bancos was established. "Bancos" are the land enclosed by sharp bends or meanders in the river. This eventually led to the major rectification project by the Bureau of Reclamation in 1935-40.²⁷ Two years later, a channel was dug along the island on the United States side in order to keep 12,000 to 13,000 acres in Texas.²⁸

Floods

Floods, due either to spring runoff resulting from the melting mountain snow pack or from intense summer rains in the watershed above El Paso, have played a significant environmental role in the Rio Grande's hydrology and associated land use activities during the historic period. Prior to the construction of major flood

control structures on the river in New Mexico, flooding of the valley in late spring, summer, and sometimes early fall, was common in years of average or above normal precipitation. These floods were generally destructive to human endeavors, damaging or destroying crops, fields, and structures; and livestock and human lives were sometimes lost. However, prehistoric and historic flooding produced beneficial effects such as the deposition of rich, alluvial soils across the valley flood plain, which, when irrigated, commonly produced abundant harvests. These flood waters also leached from soils salts which had built up due to repeated irrigation. Maintenance of various stable, riparian plant and animal communities were also dependent upon these seasonal flood waters.

Some seventy-two floods have been documented for the El Paso Valley in the period extending from 1665 to 1942, or one about every 3.85 years. Since flood data are scant for the early colonial period, flooding may have occurred more often. Better records exist for the post-1725 period; sixty-nine floods occurred, or one every three years. For the best documented period, 1846 to 1942, there were fifty-one floods, or one every 1.9 years. As previously mentioned, more floods may have occurred during this time as a result of land misuse. At the same time, more water was being diverted upstream from the 1870s to early 1900s, thus reducing the river's normal late spring flows.



Another view from the dome of the County Court House in 1897. Note the southeast tower of the Court House in the foreground with its many lightening rods. Courtesy of the El Paso Public Library.

Upstream diversion and flood control dams and irrigation and drainage canals were constructed above El Paso between 1905 and 1917. These included the Leasburg and Elephant Butte dams. Construction on the Elephant Butte dam was begun by the United States Reclamation Service in 1912, and work was completed in 1916. This structure and its reservoir was built primarily for flood control and to provide water for downstream irrigation projects. Associated work by this agency also included the building of drainage canals and levees in the valley below El Paso, beginning in 1915.²⁹

Because flooding continued even after completion of Elephant Butte Dam and other water control facilities, Caballo Dam was built below Elephant Butte in 1935 to 1938. It was constructed also to help stabilize the international boundary and to impound water for power generation and irrigation.³⁰

Drought

Probably the single most significant climactic factor adversely affecting human populations in the area during the historic period was drought. Region-wide and local droughts damaged or destroyed crops and rangelands, decimated wildlife population, and depleted water supplies. These impacts sometimes resulted in widespread loss of human life and the shifting of human populations to sites or areas with more dependable water supplies. For example, the dry years of 1561 to 1590, 1640, 1663 to 1669, the 1670s, and 1680 to 1684 contributed to or caused nomadic Indian raids, general unrest, starvation, and/or the abandonment of pueblos in the Salinas Province, central New Mexico, in Suma and Manso camps, and in the Spanish-Pueblo refugee villages in the El Paso area.³¹ In 1691 Governor-General Diego de Vargas found the El Paso area colonists in a deplorable condition due to drought and related nomadic Indian raids.³²

Historical documentation from the mid seventeenth century to the late nineteenth century substantiates more recent detailed weather records indicating the occurrence of a major drought in the region every twenty to twenty-five years, and moderate ones every ten to eleven years.³³ Especially severe droughts struck the region in 1748 to 1751, 1755 to 1757, 1771 to 1779, 1845 to 1847, the 1850s through the 1860s, 1870s, and the 1880s, 1890 through 1904, 1917 to 1920, and 1951 to 1956. These periodic droughts, the increasing use of surface and ground waters, and the intensive

grazing have generally resulted in relatively dramatic reductions in crop harvests, changes in the native flora, and the erosion of the landscape.

Fire

Woodland and grassland wildfires caused by lightning were a common phenomenon during the period of greatest lightning strike-frequency which was, and is, July to September. The more intense and larger fires in a given location generally occurred during an extended dry period, following a year of more of above-normal precipitation which generally produced a dense build-up of herbaceous and woody plants which would fuel a fire.³⁴ In the prehistoric and his-

toric periods, Native Americans and Spaniards used fire as one method of clearing the *bosque* for cultivation. Apaches, Comanches, and probably the Suma and Manso, burned grasslands and upland shrublands, woodlands or forests in the area to drive game animals to a location where they might be more easily killed, and to cover their escape from an enemy, as well as to stimulate new plant growth. Hispanics also burned these plant communities to create "pasture" for their livestock.³⁵

Only in this century have lightning-caused or incendiary fires in riparian woodlands and grasses, desert grasslands, shrub lands, and woodlands been suppressed in the region by farmers, ranchers, and government personnel. As a result, woody trees or shrubs such as the exotic salt cedar, creosote bush and fourwing saltbush, the exotic Russian olive, and small tree species such as mesquite and juniper have encroached on flood plain, terrace, *bajada*, and foothill grasslands adjacent to the valley. Range fires generally kill small woody species while grass regeneration is stimulated. Removal or decimation of dense stands of grasses by overgrazing reduced available fuel for range fires and provided open areas where woody plants could grow.³⁶ Periodic droughts have exacerbated the impacts of these two environmental phenomena. Prophetically, in 1844, Santa Fe Trail pioneer Josiah Gregg³⁷ suggested that the grasslands of the Southwest would eventually be invaded by shrubs and trees due to suppression of range fires.

Only in this century have lightning-caused or incendiary fires in riparian woodlands and grasses, desert grasslands, shrub lands, and woodlands been suppressed in the region by farmers, ranchers, and government personnel.

**Part II of this article will appear in the
Fall issue of *Password*.**

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Frank W. Gorman Historical Essay Contest

The Frank W. Gorman Memorial Historical Essay Contest is sponsored annually by the El Paso County Historical Society. It began in 1961, with the prizes donated by Frank W. Gorman. He funded the contest until his death in 1974. The Gormans have continued their support for the contest, which is open to seventh, eighth, and ninth graders. Cash awards are given for the top three essays.

This year's winners, announced at the Society's quarterly meeting on May 16, 1999, were:

First place: Joshua Larkin, Eastwood Middle School
Teacher: Gay Stewart

Second place: Eddie Garcia, Canutillo High School
Teacher: A. Candelaria

Third place: Megan Chilson, Eastwood Middle School
Teacher: Tonda Frady

One of the aims of the Gorman Historical Essay Contest is to have young people research and write about the differences in the interests and lifestyles between young persons and their ancestors. Joshua Larkin's essay, "My Grandfather," is printed on the following pages just as he wrote it. In forthcoming issues some of the "gems" gleaned from the other essays submitted will be published.



My Grandfather

By Joshua Larkin



My grandfather, Robert F. White, was born on September 18, 1919 in Fort Stockton, Texas. He and his parents moved to San Elizario, Texas in 1921 where they farmed. He started school in San Elizario in the building that used to be a Spanish garrison. After two years, he was sent to Clint for school where there were more English-speaking students. This was a problem for him since he did not know English very well because most everyone spoke Spanish in San Elizario. Since my grandfather lived in San Elizario, he had to ride his horse three miles to school in Clint.

School was much different then. He had to answer the teacher with "Yes, Sir" or "Yes, Ma'am," address his teachers as Mr., Miss, or Mrs. Teachers wore suits and dresses. There was no eating candy, chewing gum, or horse-playing or you would receive a spanking with a belt or board. If your parents found out, you would get another spanking at home. During recess or noon, the girls played jacks, hop scotch, or jumped rope, and the boys played with tops, marbles, or they played sand-lot baseball. He later went to Ysleta High School where he played basketball for the school team and was a member of Future Farmers of America. During an F.F.A. and 4-H trip, he met my grandmother, Jessie Brandt who died in 1944.

My grandfather was a farmer and rancher. On the farm he had to milk the cows by hand and feed the livestock before breakfast. All farm work was done with horses and mules because no one could afford tractors during the Depression. Flour came in fifty and one hundred pound sacks with designs and out of these sacks my grandfather's mother made his shirts. There was no electricity so candles or kerosene lamps had to be used. At home kick the can was played because no one could afford a ball during the

Depression. There were no television sets, computers, or video games. There was no electricity until the Rural Electric Association came in 1935. All my grandfather had was a battery powered radio to get the news and "Amos and Andy." In his spare time, he sometimes played cards, dominoes, horse shoes, raced donkeys, hunted, and fished because of all the game on the Rio Grande. He had no indoor plumbing and had to bathe in the kitchen.

In the Depression days when your shoes got holes in the bottom, you had to put playing cards inside to cover the holes. My grandfather's father would sell beef and cotton and in return only accept gold and silver which was known as hard money. His father would not accept paper money because if things got worse than they were, it would be worthless. The cavalry from Fort Bliss came to water their thousands of horses for two to three cents a head. My grandfather and his family were well off because they had honey bees, raised cows, chickens, and had a garden.

El Paso had six or seven movie houses and three swimming pools. Washington Park was a great place in those days. It had a skating rink, a Ferris wheel, and a merry-go-round. Ysleta and Fabens had movie houses open on weekends only. San Jacinto Plaza had alligators and the restrooms were underground. There were electric street cars instead of buses. They ran to where Ascarate Park entrance is now and to Ysleta until 1923 or 1924. The fare for a ride on these street cars was three cents. There were no malls and the Popular Dry Goods and the White House Department Stores were downtown.

When my grandfather was my age, Fort Bliss was a cavalry post and had thousands of horses and mules. Alameda Street was lined with cottonwood trees on both sides from Thomason Hospital to Fabens. They were planted so that people traveling to and from El Paso would be in the shade. The trees were planted between 1880 and 1900.

Another thing to look forward to were the Burma Shave ads along the road, spaced far enough apart to make good reading at thirty to thirty-five miles per hour. All filling stations had an outhouse in back along with gas, oil, air, and sometimes cold soda. Gas was in an overhead pump with a glass bowl that held two gallons and was marked like a measuring cup today. Oil was in a fifty-five gallon drum which was pumped into a quart or gallon container. All the pumps were operated by hand. In the

1920's and 1930's there were not many paved roads, so people going on trips by car took extra tires, tubes, hand pumps, patching materials, an extra fan belt, and tools.

World War II came along on December 7, 1941 and lasted until Japan signed the surrender on September 2, 1945. During the war, everything changed. Prisoners from the war who were mostly Italians were put to work on farms chopping and picking cotton. The prison was located in the sandhills in Ysleta off Zaragoza. Ration stamps were used during the war years. They were for butter, meat, sugar, gasoline, tires, coffee, and many other things. Because of these stamps you could only get four gallons of gasoline a week.

My grandfather was called into the army, served in the Pacific, and was discharged in early 1946. After being discharged, he ranched but eventually changed jobs to construction which had him travel around the United States and even to Monrovia, Liberia in Africa where he built a hospital, nursing quarters, and a school.

My great-grandfather, Everett J. Bradt, was an architect with Trost and Trost who designed many of the historic buildings of El Paso including the Mills Building, Loretto Academy, and the Tibetan architecture at the University of Texas at El Paso. When my grandfather went into construction he worked on many of the projects designed by great-grandfather including Fox Plaza and Bassett Center. He retired in 1986.

My grandfather is living the retired life today of playing golf and taking trips around the United States.

JOSHUA LARKIN was born in El Paso in 1985, the son of Raymond Larkin and Janice White Larkin. He attended Eastwood Heights Elementary School and now attends Eastwood Middle School for whom he plays football and soccer. He also plays in the school band. Joshua has three brothers and two sisters.

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Texas College of Mines and Metallurgy

By Eleanor Duke



Editor's Note: This historical article is intended to waken the memories of the many readers of *Password* who attended Texas College of Mines and Metallurgy in those times that were gentler and calmer—the days of an innocence that exists now only in memory; the days when WE knew everything, and when all adults were bordering on senility. It does not matter where we were, we all had the same mind-set.

When I graduated from Austin High School in May 1935, I felt that my education was complete; there was nothing more to learn. My idea was to find a good job and make a lot of money. My friend Kathryn also had the same idea and so we went downtown together looking for work. We found only one man at S. H. Kress who would even talk to us and he told us that he was hiring only people who looked hungry. Discouraged, we went to visit Kathryn's father at his optical supply. He gave us a list of delinquent accounts and we started out as bill collectors. The first person that we called on gave us such a sad story that we gave her everything that we had, something like twenty five cents. We went back to the optical office completely discouraged.

Kathryn and I were never able to find any work that summer except for stuff that our mother required that we do, things like dishwashing, ironing, bedmaking, and other home chores. I remember overhearing Kathryn's mother saying to my mother "There go two lovely innocent girls." My mother replied "They are only ignorant." I didn't understand at the time, but now realize that mother knew me better than I thought.

Finally August came and mother decided that I should go to "Mines." So we loaded up one day and went out to see the registrar, Mr. Forest Agee, who was both the registrar and a member of the education faculty. Between them, they decided that I should

major in education and take English, algebra, Spanish, education, history, and physical education. I was given a slip of paper with directions for registering when the great day came. A newspaper headline stated that they were expecting a total enrollment of 500 for the fall semester.

When the day arrived to register at the college, several of my friends were going to register and one had a car. We all piled into her car and went out to Holliday Hall where registration was taking place. I had my slip of paper with directions and a check signed by my father. When I got into Holliday Hall, I stopped in front of a table that had an empty chair. Behind the table was Professor Franklin H. Seamon of the chemistry department. I handed my directions over to him and he looked at them through his "half-glasses." He asked "Is this really what you want?" I hadn't really thought about it since Mother was making all my decisions at the time, but I quickly began to think. I then let Mr. Seamon know that I wasn't sure of anything at that time. When I left his table, I was signed up for chemistry, physics, engineering mathematics, German, botany, English composition and physical education. When I got home with my schedule and registration receipt, I heard Mother, under her breath, mutter something about "having made my bed and now —."

As the semester went along, chemistry was fairly easy since I had had an excellent half year of chemistry at Phoenix Union High School. That was fortunate because at Austin High School, the second semester of chemistry had made no sense at all. I discovered why when I saw who was in the seat next to me in the second semester of freshman chemistry. I found that the Austin High teacher had had only three hours of chemistry credit!

Professor Seamon was helpful and his exams were reasonable except that he did not believe that the arithmetical calculation should be done with a slide rule. He wanted it all on the paper—long hand. The chemistry lab was interesting, at least until Professor Seamon asked me about cleaning his pipe. Since it was really loaded with the remains of a lot of tobacco, my only thought was concentrated sulphuric acid. He did not appreciate my thought.

Physics was another matter. I am afraid that I went through the whole year wondering what the fuss was all about. The first exam of the semester was over the first chapters of the textbook. I had sat with the book in my lap for an extended period of time

and had briefly scanned the thing. So confident in my own ability was I that when the exam came, I thought that I had made at least a ninety which would have been an A. Imagine my chagrin when the paper was returned with a score of four points out of 100!

I was no longer the well-educated high school graduate.

Physics lab never made sense to me. First, the laboratory manual was produced locally and my copy was bound on the right side of the pages instead of the left. Otherwise everything was in order—of a sort. There were identical twins in the laboratory—Bob and Tom. One of them was my lab partner and I never learned to tell them apart. They were always dressed the same except for a small letter on their belt buckles—one B and one T.

Professor Pearl Durkee was an excellent physics professor, except that he had what was for me a very distracting habit. His bald pate was apparently very loosely attached to his skull and he would pinch up the loose skin so that it made a ridge which would slowly settle back into place. Then he would make another ridge perpendicular to the first. At other times he would walk his fingers over the top of his head from side to side.

Dr. Edwin J. Knapp taught the "engineering math." The first few weeks were a review of algebra which was followed by an exam which cut the class in half. Those who did not make a passing score were transferred back to algebra. I managed to survive and remained in the math class. Dr. Knapp was an excellent instructor, perhaps too good for me. He made everything very clear and reasonable. But he was not reasonable about his belief in homework. He expected it to be completed and turned in every day. I saw no reason for this since the solutions to the problems could be seen with no trouble at all. Thus I would be called into his office every four to six weeks and threatened that I would be failed if my homework was not completed. So a couple of hours on Sunday would be spent in bringing me up to date so that

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German was really a problem: I had had no grammar. In my Phoenix high school, we were given only literature. We had read Shakespeare, Beowulf, Chaucer, Spencer, the Iliad, and the Odyssey among other things, and here I was in a German class knowing the difference between a noun and a verb — and not much more. Even “gender” was strange. And there were things called “tense” and “case,” and the Germans had at least 21 forms of “the!” It was painful but I did manage to get by. Lena Eldridge was a very pleasant lady and I did eventually enjoy her class — all the while wondering if she wore a wig.

Mr. Weldon Brewster was the botany instructor. Professor Anton H. Berkman was on leave at the University of Chicago completing his Ph.D. We liked Mr. Brewster very much since he never kept the class for the full time and the laboratories were very short. For about a month, I looked in the microscope and saw

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only my own eyelashes. And then one day I actually saw a botanical specimen. It was truly amazing and impressive. I will never forget first seeing Hydrodictyon!

During the second semester of botany, Dr. Berkutan returned, took over the class and made us work instead of just “coasting along.” The major thing I remember about botany lab was coming out at four o’clock one afternoon and seeing my first academic procession. A group of probably twenty people in academic robes was marching in a doubleline up the hill to Holliday Hall. They were having a convocation for the installation of Dr. Dossie M. Wiggins as President.

English composition with Leon Denny Moses was really something else. There was a weekly theme, three pages long, due on Friday, on subjects apparently selected by a committee. The first one was to be titled, “Why I Came to the Texas College of Mines and Metallurgy.” I really had no reason except that Mother sent me. Other subjects on which to write were a description of a beautiful sunset, a conversation overheard on a street car, an embarrassing moment, a description of a small town and should daughters receive dowries? A dowery

was something unheard of in my experience.

Mr. Moses also promised that a "comma blunder" in one of the themes would result in an automatic F. I never understood what a "comma blunder" was but it was avoided by never using a comma in any of the themes. He criticized my style as a result, but at least my every sentence had a subject and a verb!

Physical education was worst of all! Mrs. Julia Kane was our instructor and she worked out of the "Women's Building" which was located next to a small rocky hill near the chemistry building. In this building there were baskets for holding our clothing and books, and there were with benches along each side. This building had showers across the far end, but there were no shower curtains. Taking a shower was required after each class and Mrs. Kane would sit in a folding lawn chair checking that everyone was participating. During the showers she would lecture on modesty.

Gym suits were something else. They were crayon-orange one-piece, V-necked suits with buttons across one shoulder and down one side. The bottom of the legs bloused out and the elastic was to be no higher than one finger-width above the knee cap. A narrow belt was provided which allowed us to look like sacks of flour. Mother still believed that I was a growing girl so my suit provided for a growth of at least six inches and 100 pounds.

There was a rocky field where we played speed-ball and field hockey. The goal posts were iron pipes with a diameter of about four inches and were set in concrete and wrapped with chicken wire. My problem was that I was so physically inept that I kept running into one of the goal posts. Large areas of skin would be taken off but—not to worry—since Mrs. Kane had a pint bottle of tincture of iodine which she used liberally.

The spring semester was a continuation of the same classes except for the English composition. I dropped it and substituted solid geometry which I had missed in high school when we transferred. It was a great class, except for the text book which bore the title "Solid Mensuration." This required the immediate application of a book cover because of the comments made by male classmates to the only female member of the class.

Professor Hugh L. Turriln was a joy with his original problems. His final exam was to determine the number of sacks of concrete needed to build a stadium with every known solid object as a part of the stadium. He gave the formula for mixing the concrete.

Some how I managed to survive my first year of college in 1935. I suppose that I was more or less unconscious of the various deadlines which were used to eliminate unprepared students. First if you failed the math qualification test; you were placed back in an algebra class. Second, at six weeks, some students were called in to the dean's office and warned that they were not doing acceptable work and should not waste their time at college. At mid-semester, grades were mailed home to our parents.

My grades were never that good since I was enjoying the college experiences too much and since I had already decided that grades were not important. It was the knowledge that we were gaining that was worth it all!

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