

I S L A N D S
IN THE
D E S E R T

A HISTORY OF THE UPLANDS
OF SOUTHEASTERN ARIZONA

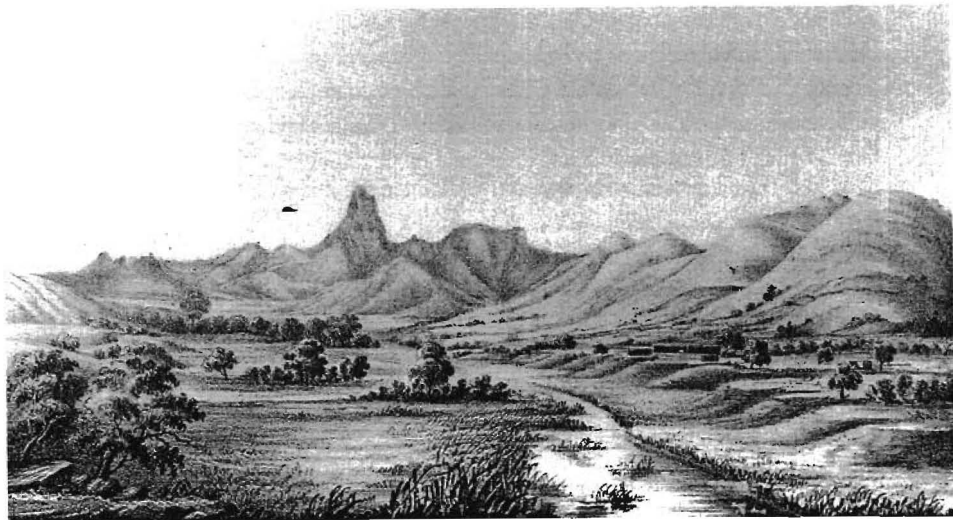
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Arivaca Valley, from a sketch by Charles Schuchard, c. 1857. (Courtesy, Rio Grande Historical Collections, New Mexico State University Library.)

Marqués de Rubí found the La Ciénega silver mine abandoned when he passed there in January of 1767, while “Neither is working being done in the little camp of El Arivaca, which lies a league to the right of the road and another league from La Ciénega, from where its ruins can be seen.”⁶⁹ Only in the nineteenth century were these mines worked again and the valley resettled. In 1893 the older residents, when asked to locate the original Spanish settlement of Arivaca, placed it 1.5 miles northwest of the modern town.⁷⁰

The marqués had mentioned a place called La Longoreña, a league and a half beyond La Ciénega. The royal inspector called Longoreña a rich silver mine. The old Longoreña mining claim, one of an alleged twenty-five silver mines in the Arivaca district, lies in a rocky canyon known as Fragueta Wash, about three miles south of present-day Arivaca. The names and rough locations for some of the other properties have survived, because they were reopened in the late 1850s.⁷¹

How the Spaniards Mined

Spanish mining technologies changed little during the colonial era and were carried over into the early American period. Ore from a mine first had to be crushed. This could be done by hand or, more efficiently, with a *molino*, or stamp mill. Next came grinding in an *arrastra*, which was a circular pit lined on the sides and bottom with flat stones carefully fitted together. One or more heavy stones were attached to a boom set on a revolving post placed in the center of the *arrastra*. Rotating the boom caused the drag-stones to crush the ore that had been placed in the pit, grinding it to a powder.

With the addition of water and mercury to the powder, the *arrastra* became an amalgamator, a small-scale version of the patio process, wherein mercury was used to combine with and extract silver or gold from its finely ground ore.⁷² After retorting or boiling away the mercury, the miner was left with a sponge of precious metal. Captain Anza mentioned that the use of quicksilver was “not established in this province of Sonora,” to everyone’s detriment. Since *arrastras* are a concomitant of the amalgamation process, we could specify when these were introduced into southern Arizona if we knew when mercury was first employed there.⁷³

In northern Sonora the more usual method of extracting silver was to smelt the ore. To accomplish this, the silver-bearing rock had to be reduced to nut-sized chunks, then hand-sorted to select the higher-grade pieces. These in turn were added to a smelting furnace, or *vaso*, together with a quantity of lead or lead ore, plus charcoal as fuel. These crude blast furnaces were largely constructed of adobe and, as with the *arrastras*, built by the miners themselves. A 1910 newspaper article briefly described the little smelters seen near the Tumacácori mission and the Patagonia Mine:

These furnaces were built on a pattern of the Mexican *vasa*, practically a combination of a reverberatory and a shaft furnace, and were adapted to the treatment of comparatively small quantities of high-grade silver ores in mixture with silver-bearing lead ores. The resulting metallic-lead, rich in silver, was cupelled with the formation of lithage [*sic*; litharge] and pure silver. Charcoal was used for fuel.⁷⁴

For the separation of argentiferous lead to take place, the furnace charge might require ores from more than a single mine. Such furnaces were high-maintenance and relatively low-production facilities that burned enormous amounts of fuel. The charcoal for even a modest smelting operation could leave the adjacent landscape denuded of trees. The advantages of these home-built smelting furnaces were simplicity and low cost. Samuel P. Heintzelman,

the president of one mining company in the early territorial period, left a rather biting account of the construction of one such furnace.⁷⁵

Most of the mines in New Spain, including some of those in southern Arizona, were evidently worked out by the earliest operators.⁷⁶ Exhaustion of the mineable ores led to the mines being abandoned or closed. This is probably what happened in the Huachucas. One mining engineer wrote that ". . . the old workings I have run across in Mexico . . . offered very little inducement for exploitation. I have examined many of the old mines and have found that they invariably were abandoned because they had been exhausted, or, to use a modern phrase, did no longer produce pay ores."⁷⁷

Raphael Pumpelly, a young mining engineer in early territorial Arizona, said that the old mines his company sought to reopen had only thin, albeit rich, veins of ore. The silver from these did not meet expenses.⁷⁸ Apaches no doubt caused some mines to be abandoned, perhaps because of the perceived threat more than by actual depredations; aside from an occasional spectacular victory, hostile natives killed relatively few miners or settlers in Pimería Alta.⁷⁹

If the veins were not exhausted, and if unfriendly Indians stayed away, another problem arose when, as often happened, the nature of the ore changed as a mine was developed. Similarly an ore that might be unsuited for reduction by itself could be mixed with other ingredients and successfully smelted.⁸⁰ The company that bought the old mines at Cerro Colorado and Arivaca prior to the Civil War met this problem and sought to resolve it by importing lead ore from other mines.⁸¹ The Spaniards a century earlier would probably have sought out argentiferous copper and galena ores, because these could be easily reduced by smelting.⁸²

The Pima Revolts, 1734–1760

Apaches were not the only natives who harassed the mines, missions, and ranches of early Arizona. After the establishment of three new missions in 1732, the neophytes sometimes became as much a danger as the roving tribes. Father Juan Grazhofer died scarcely a year after coming to Guevavi, almost surely a victim of poison. Father Philipp Segesser succeeded him and also became very sick. In the summer of 1734, the Pima converts at all three of the missions (San Xavier del Bac, Guevavi, and Santa María de Soamca) abruptly took to the hills, after first doing considerable damage to the mission property at San Xavier. The fathers talked the fugitives into returning.⁸³

The spring of 1737 witnessed a more serious disturbance, this one around

the mission of Tecoripa, several hundred miles to the south. Juan Bautista de Anza (senior) quashed this uprising, but fell a victim himself two years later, in an Apache ambush not far from Soamca.⁸⁴ It was his son who grew up to carve out a distinguished career as a frontier officer and eventually to serve as governor of New Mexico for ten years.

Luis Oacpicagigua was a Pima Indian who lived at the mission of Sáric in northwestern Sonora, where he held the rank of native governor and captain general of the Pimas. Luis led the most serious Pima uprising, which broke out on the night of November 20, 1751. This time the Indians murdered two padres and reduced the missions at Sáric and Tubutama to ashes. At least one hundred settlers and peaceful Indians fell in this bloodletting. Fathers Sedelmayr and Nentvig, besieged for two days at Tubutama, finally escaped through the mountains at night.⁸⁵

The Pimas coordinated their assaults and attacked Arivaca the same night they struck Sáric. At Arivaca they massacred the mission foreman and several families, before reducing both the visita and Don Antonio de Rivera's estancia to rubble. Don Antonio had been at Guevavi at the time looking over a gold mine, but when the news arrived, he collected a dozen citizens from the San Luis Valley and set off for Arivaca to bury the dead. Instead they were met by some two hundred Pima warriors and had to fight their way back to Guevavi.⁸⁶

Just months before this uprising, Pimería Alta had received four new Jesuit fathers. Now two of them were dead and the other two fled from their missions, lest they suffer the same fate. The new missionary at San Xavier del Bac escaped even as the rebels burned his temporary chapel, or *capilla*. At Sonoita they torched the house that served as a church. The Tubac natives set fire to their church and the father's house, while at Guevavi the villagers dashed off to join the other apostates, despite their padre's pleadings. The priests from San Xavier and Guevavi joined the stream of refugees that flowed south through the San Luis Valley and up the Santa Cruz River to Santa María de Soamca. Five leagues beyond, they found asylum at the presidio of San Felipe de Terrenate. Meanwhile a band of natives sacked the church at Guevavi; "Unhinging the doors of the Father's house they ransacked it, then began in the church, tearing, throwing down, and abusing the few santos that remained."⁸⁷

Within a week of the outbreak, Don Diego Ortiz Parrilla, Sonora's newly installed governor, gathered what troops he could collect and marched north. Ortiz Parrilla, who "seldom faced danger with a stout heart" according to a modern historian, had evidently won his spurs in the War of Jenkins' Ear.⁸⁸ He was reluctant to wage war against Luis, whom he held in high esteem.

Construction consisted of side-hill cuttings and embankments in the hilly areas, with simple grading and clearing of brush, boulders, and timber elsewhere. The result was a road eighteen feet wide on the straight sections and twenty-five feet wide on the curves. Wells, tanks, and a reservoir were constructed to reduce the length of the waterless stretches. The Leach road was completed just in time for sections of it to be used by John Butterfield's Overland Mail Company. The El Paso and Fort Yuma project nearly dissolved in financial chaos, and Leach himself, an experienced contractor, was indicted later for falsifying vouchers to defraud the government. The outbreak of the Civil War saved him from prosecution.¹³

Stage Lines Across Southern Arizona

The San Antonio and San Diego Mail Line

On June 22, 1857 James E. Birch of the California Stage Company contracted with the Post Office Department to carry the mail between San Antonio, Texas, and San Diego, California, a distance of 1,476 miles. For this he was to receive an annual subsidy of \$149,800. Within days Birch set about organizing the San Antonio and San Diego Mail Line, more popularly known as "The Jackass Mail."

The new express line was required to run on a thirty-day schedule twice a month between its terminal points in Texas and California. The first mails left San Antonio on July 9 and 24, 1857, and arrived in San Diego together on August 31st. Thereafter the dispatches were made bimonthly from both ends. The earliest record of eastbound passenger service dates to the first week of November 1857, while the sixth mail from San Antonio brought four through passengers to San Diego on October 19th. The fare from San Antonio to San Diego was \$200. Provisions for the passengers were erratic, and the firm used a variety of conveyances, including Concord stages, light-covered wagons called ambulances, and a type of light stage with a wood-framed canvas top known as a mud-wagon or celerity wagon.

Birch died at sea very early in the line's operation. Control of the firm passed to George H. Giddings, who already operated a San Antonio-to-Santa Fe stage line, and to Robert Doyle, who had been Birch's chief agent in California. Initially the company maintained regular stations only at San Antonio, El Paso, and San Diego, with a brush hut and corral at Maricopa Wells, Arizona, for a resident agent and cook. Elsewhere they used estab-

lished military posts and civilian towns or ranches as additional stops. The operation was a flexible one, and if traffic warranted, a mail dispatch might consist of two or three coaches or wagons, accompanied by armed escorts riding alongside. Until intermediate stations were added, a herd of mules driven in company with the vehicles allowed teams to be switched with this *caballada* from time to time. The stages carried food for the passengers, and at night everyone stopped and camped. The diary of Phocion Way gives a graphic view of this enterprise in operation.¹⁴

According to Silas St. John, who worked for the San Antonio and San Diego line during its first year, their stages went from Tucson via the San Xavier mission to the north point of the Whetstone range, thence to the San Pedro about seven miles above present-day Benson, and on to Dragoon Springs. East of Dragoon Springs the drivers dodged from water hole to water hole to Apache Pass and from there across the San Simon Valley to Doubtful Canyon.¹⁵

Passengers at the end of their journey were likely to be weary and out of sorts. Phocion Way, tortured by a long ride from San Antonio, instantly labeled Tucson "this God forsaken town." Nor was he any more pleased with the mail company's service: "The mail company do not run their stages farther than here, and those who paid their passage through must ride over a sandy waste on mule back and furnish the mule themselves, or stay here and get the fever and ague. This is a most rascally imposition and the company will very likely have to pay for it."¹⁶

The San Antonio and San Diego Mail Line was the first transcontinental venture in staging. It began in haste, and the proprietors never quite worked out the kinks in their operation. In October of 1858 the postmaster general terminated Gidding's contract for the section between El Paso and Fort Yuma, at the same time increasing the subsidy to \$196,488 a year for a weekly mail run over the two segments between San Antonio and El Paso and from Fort Yuma to San Diego. The line continued to carry passengers across Arizona. In the spring of 1861 an effort to reestablish service over the entire distance met with the spectacular disaster recounted at the end of the next section.¹⁷

The Butterfield Overland Mail

Few ventures were as well-publicized at the time or have captured the public imagination more than the Overland Mail Company, usually called the Butterfield Overland Mail. John Butterfield, one of the founders of the American Express Company, was a successful promoter and the owner of express firms in New York state. On September 16, 1857, Butterfield and his

associates signed a six-year contract with the postmaster general to provide a semiweekly mail service between St. Louis, Missouri, and San Francisco, for \$600,000 per year. They had one year in which to begin operations. The distance as of 1860-61 was some 2,888 miles, almost twice the length of Birch's line.¹⁸

During the year following the award of the contract, the company built 141 stations (and subsequently added about 60 more), purchased a hundred coaches, a thousand horses, five hundred mules, and recruited nearly eight hundred men. The first eastbound stage left San Francisco on September 15, 1858, and the first mail west departed St. Louis on September 16. Trips averaged from twenty-one to twenty-three days, with some requiring only nineteen. Through passengers heading east paid \$100 in gold at San Francisco, while the fare for westbound travelers was \$200. Meals came extra. Letters sent by way of the Overland Mail cost 10¢ per half-ounce.

This well-financed (\$2 million) and well-organized operation established stations at average intervals of eighteen to twenty miles. In 1860 the company advertised this table of distances across southeastern Arizona:

Tucson to Cienega	30 miles
Cienega to San Pedro	25
San Pedro to Dragoon Springs	21
Dragoon Springs to Ewell Station	25
Ewell Station to Apache Pass	15
Apache Pass to San Cimona [Simon]	18
San Cimona to Steen's [Steins] Peak ¹⁹	13

Early in the line's operation, one eastbound traveler observed that "[t]he stations, after leaving Tucson, are large square enclosures, with adobe walls. Rifles, shot-guns, revolvers and muskets, heavily charged, and at convenient places, are the objects that first strike attention, upon entering them; and the four or five men who are in attendance, appear always on the alert against the attacks of Indians."²⁰

Not all of the stations were built of adobe; at Dragoon Springs a postal inspector found a stone enclosure measuring 45 by 55 feet. Silas St. John, head of the construction crew for the Tucson-to-El Paso division, nearly lost his life there when he and six assistants remained to complete the structure, roofing the storeroom and residence portion. At midnight on September 8, 1858, St. John changed the guard, then returned to his room. About 1:00 A.M. he heard a commotion; his three Mexican laborers attacked the other three assistants and killed them, leaving St. John with his arm severed at the elbow and a deep cut in his thigh. For three days there was no help or water, until:

Mr. Archibald, correspondent for the *Memphis Avalanche*, arrived on [the San Antonio and San Diego] mail stage on way from Tucson to Rio Grande. He was left with St. John. Soon after three wagons of the Leach party approached from the east. Col. Leach, Maj. Hutton and some other veterans. They dressed the wounds and started an express for Ft. Buchanan by way of Tucson. They reached the fort on Wednesday following. Dr. B. J. D. Irwin started with escort and reached Dragoon, Friday, the 9th day after St. John was wounded. Arm was amputated at socket. Six days later St. John got into a wagon and rode to the fort.²¹

Newspapers at the time gave the incident wide publicity. Silas St. John's days with the construction crew were over, but he had an active and productive life for another sixty-one years.

"Home" stations on the Butterfield route furnished meals and did necessary maintenance, while the smaller "swing" stations provided a change of teams only. Four and six-mule teams pulled celerity wagons through the mountains. Elsewhere Spanish horses from California, wild but with great endurance, drew the coaches at speeds of up to fourteen miles per hour. The average pace was five miles an hour, with the teams being changed at every station. The stages rolled around the clock.²²

In Arizona the only significant difference between the San Antonio-to-San Diego and the Butterfield routes was the latter's elimination of a stop at San Xavier. For almost two and a half years, both lines crossed Arizona; a Butterfield passenger even commented upon the novel method that the San Diego firm used to collect its mules (sounding a gong) when both stages happened to be at the San Simon station.²³

Officially the Overland Mail Company service ended on March 2, 1861, when Congress authorized the postmaster general to discontinue the southern route and make a new contract to carry the mail over the central route through Denver, Salt Lake City, and Sacramento. Three days later Texas withdrew from the Union. The last mail to the east was made up at Tucson and left there on March 6; the last mail from the east left for San Francisco early in April. Company personnel were still moving stock and equipment to California as late as June of that year.²⁴

In April and May of 1861, George Giddings made an attempt to restore service over the southern route. He had received a contract for his San Antonio and San Diego Mail Line to carry mail once again from San Antonio to California. As he recalled it later, this was part of an elaborate scheme to restore Texas to the Union. The plan fell apart, but until his mail contract was canceled, Giddings made a serious effort to reorganize the Butterfield

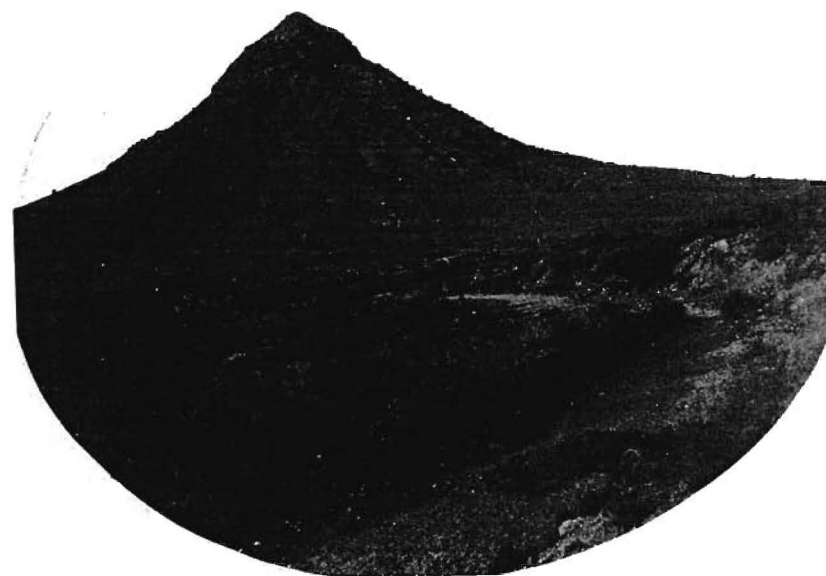
network and acquire its remaining unsold property and stock. In the course of all this, his brother, James Giddings, and three Butterfield hands made an opening run with both the San Antonio and St. Louis mail bags. They left Mesilla, New Mexico, heading west, late in April of 1861. *The Mesilla Times* of May 11 gave a full account of what happened after they pulled out of Barney's ("Tanks") Station, east of present Lordsburg, New Mexico, on April 27:

On the 27th a coach left the Tanks for the West, in which were five persons—Mr. J. J. Giddings, Superintendent of the San Antonio and San Diego Mail Company, Michael Nies, Road Agent, and Anthony Aldar, Samuel Neely, and Mr. Briggs, employees of the Overland Mail Company. Two of the mules which left [with] the coach returned to the Tanks Station badly bruised, and had evidently been in a severe struggle. This circumstance aroused the suspicions of all, and our informant the next day went to Fort McLane and applied for an escort of troops to investigate the matter.

Near Stein's peak the soldiers met a train of freight wagons and heard a grisly tale from the teamsters, who had just survived a running fight with the Apaches:

They found scattered along the ravine, newspapers and other mail matter, pieces of harness, etc. The roof of the station (which was some time since abandoned) had been burnt, the corral wall had been thrown down, and the Indians had formed a breast work of it around the spring. Near the station the bodies of two men were found, tied by the feet in trees, their heads reaching within 18 inches of the ground, their arms extended and fastened to pickets, and the evidences of a slow fire under their heads. The bodies had been pierced with arrows and lances.²⁵

The Stein's peak station lay along Doubtful Canyon, barely one mile east of the present Arizona line. When the army arrived, they found the remains of the stagecoach in a canyon half a mile from Stein's Peak Spring, with three bodies sprawled near it. A prominent gravestone later marked the spot, about one-third of a mile inside Arizona. The soldiers continued west and removed the livestock at the San Simon and Apache Pass stations to Dragoon Springs and the San Pedro River. Apaches followed and absconded with forty-four head of Overland Mail Company mules. Either the Indians or the mail company itself set the San Simon, Apache Pass, Dragoon Springs, and San Pedro station buildings ablaze, ending stage operations in Arizona until after the Civil War.²⁶



Stein's Peak from below the stage station, Butterfield Trail in the foreground. Vegetation along the roadside is probably Apache plume, with yucca and mesquite in the middle distance. Photo by William A. Bell, Kansas Pacific Railroad survey, November 3, 1867. (Courtesy, Colorado Historical Society, Negative No. F-40600.)

Settlements and Garrisons, 1846–1861

The Overland Mail Company had a tremendous economic impact during its short life, both in drawing people to Arizona and as an employer. The firm kept about fifty people busy in Tucson alone. One traveler said that the Anglo-American population there was either connected in some way with the mining companies or employed by the Overland Mail Company.²⁷ Indian and Mexican residents followed more traditional occupations by farming and raising livestock.

The stage stations did not become the nuclei for settlements, however, and Arizona's frontiers during the late 1850s remained close to where they had been for the previous century. Miners and others had reoccupied the old towns of Tubac, Tumacácori, and Calabasas on the upper Santa Cruz. There were mining camps at Arivaca, Cerro Colorado, Santa Rita, and the Mowry Mine. Ranchers and farmers had scattered out along Sonoita Creek, and by 1861 there were farmers in the San Pedro Valley as well, but "not over fifty persons" according to one newspaper correspondent.²⁸ Nearly everyone lived in the valleys, and settlers often stayed but a short time at any one place. As one historian wrote later, "This restless, almost nomadic, life was characteristic of the time and reminds us of the story of [William] Kirkland, another pioneer of that day, of whom it was said that after he had lived a short time in one place his chickens would come up and suggest another move by turning over on their backs to have their legs tied!"²⁹

When the United States established its authority over the Arizona portion of the Gadsden Purchase, the army sent Major Enoch Steen with four companies of the 1st U.S. Dragoons. The major and his troops arrived in November 1856 and set up a temporary camp near Calabasas on the Santa Cruz River. This spot, which they named Camp Moore, offered superior grazing, an abundance of water, proximity to timber, and ready access to flour, corn, and other foodstuffs from nearby Sonora. During their six-months stay, the soldiers lived in tents and in *jacales*, the latter being shanties made of logs set upright in the ground and roofed with dirt. Food was cheap and abundant. Even London ale and champagne were to be had at \$6 per dozen, until an American filibustering expedition met a disastrous finale in western Sonora and most trade with the United States ceased for awhile. Indians at this time were not troublesome.

Captain Richard S. "Baldy" Ewell, later a Confederate general but at the time commanding one of the dragoon companies at Camp Moore, was ordered to find a more suitable location for a military post. He recommended a site on Sonoita Creek, about 3.5 miles west of modern Sonoita, Arizona, where the garrison would be in a better position to protect settlers. Major Steen approved Ewell's selection and began removing his camp to the new site, named Fort Buchanan, during the first week in June 1857.³⁰

Fort Buchanan lay on a small plateau with a marsh, or *ciénega*, around it on three sides. The troops there sought to protect both settlers and miners, but scarcely a year had passed before one official said that "its present location is the very worst which could have been chosen."³¹ The post surgeon agreed; Fort Buchanan had become a fever pit. Since its occupation, nearly every person at the post had contracted malaria.³²

The garrison stayed nonetheless. Storerooms, workshops, laundresses' quarters, and most of the structures occupied by officers and men were built of upright logs chinked with mud and covered by flat, earth-covered roofs. The hospital and two sets of officers' quarters were of adobe. To protect his horses, Captain Ewell had an adobe corral 100 feet square erected. These buildings lay scattered over a distance of half a mile. When the department commander inspected Fort Buchanan, he was not impressed: "The post is built more like a village than a military post."³³

This fort had an active life of little more than four years. During most of that time, Indian affairs were quiet, except for depredations on livestock. Captain Ewell and his three companies of the 1st Dragoons did figure prominently when Colonel B. L. E. Bonneville launched his Gila River Expedition, even though Ewell confessed in a private letter that he would rather be raising potatoes and cabbages than chasing Indians at the orders of men who didn't know what to do. On June 27, 1857, Ewell's dragoons led the charge when Bonneville's two columns fell upon an unsuspecting camp of Coyotero Apaches, slaying an estimated thirty-seven or thirty-eight warriors and taking twenty-seven women and children captive. The camp lay on the Gila River, thirty-five miles north of Mount Graham. At least one officer thought these Indians had been guilty of nothing more than getting in the way, but it was subsequently learned that they had attacked parties on the road to California.³⁴

To overawe the Indians into staying peaceful, the Buchanan garrison would go on patrols and respond to any raids or other provocations. Occasionally a scouting party got into a fight, as on March 11, 1858, when thirty troopers of Company G, 1st Dragoons, clashed with an Apache band in the Huachuca Mountains and left one Indian dead.³⁵ Ten months later three discharged sergeants and their wives were traveling east from Fort Buchanan when a Pinal Apache war party attacked them at Whetstone Springs, eighteen miles from the fort. Two soldiers were soon killed, while the third one made his escape; the wives, however, seized their husbands' revolvers and fought off the attackers, until another party of travelers "arrived at the scene opportunely enough to save them."³⁶

There was a Pinal campaign out of Fort Buchanan later in 1859, with "Baldy" Ewell and two companies of his 1st Dragoons forming part of the sweep. On December 24 his men had a battle in the Pinal Mountains that left six Apaches slain, while Captain W. L. Elliott's company of the Regiment of Mounted Riflemen got into one fight north of Dragoon Springs on December 3 and a second one fifteen days later, some thirty miles northwest of the springs. On December 18 the Indians scattered when they heard the

soldiers coming, but lost two warriors and the livestock they were driving back from Sonora. Pressure of this kind persuaded the Pinal Apaches to come in to Fort Buchanan and make peace.³⁷

In March 1860 the Tonto Apaches raided a lumber camp at Madera Canyon in the Santa Ritas, abducting a woman and a ten-year-old girl. "Baldy" Ewell rode to the rescue, only to find that the raiders had escaped. He recovered the little girl through negotiations, even as the woman, Mrs. Larcena Page, was driven along by her captors until she grew exhausted and lagged behind. The Apaches thrust at her with their lances, then threw her over a ledge and pelted her with rocks, leaving her for dead in the hills just east of modern-day Helvetia, Arizona. She revived and in a fourteen-day ordeal managed to crawl back through the mountains to the lumber camp.³⁸

The pace of Apache depredations picked up in the fall of 1860 and soon became a reign of terror (a very nearly successful one) to drive the settlers out of southern Arizona and southwestern New Mexico. These hostilities grew out of a complex background. In northwestern New Mexico the army had been pushing the Navajos south and west from their homeland; their displacement in turn put pressure on the Pinal and Coyotero Apaches to the south. Meanwhile gold discoveries in southwestern New Mexico during the summer of 1860 caused miners to flood into that country and disturb the native Apaches there. Water to work the placers was scarce that fall, and out-of-work miners formed one or more "ranger" companies to go on Indian hunts. Tucson periodically had "ranger" companies as well. The activities of these vigilante groups were inciting the southern Apaches even before the Bascom Affair.³⁹

The most notorious single incident in pre-Civil War Arizona was the Bascom Affair, the "Sixteen Days at Apache Pass" between February 3 and 19, 1861. The episode began when raiders of the Pinal band abducted a young Mexican boy from a ranch in the Sonoita Valley. The army's efforts to recover him led to a confrontation at the Butterfield station in Apache Pass, with five hundred Chiricahua and Coyotero Apache warriors under Cochise, acknowledged leader of the Chokonon band of the Chiricahuas, and Francisco, the Coyotero chief, facing second Lieutenant George Bascom and his company of infantrymen. Both sides took hostages, and Bascom sought to hold the great Chiricahua leader as well, but Cochise rushed past the guards. Negotiations proved fruitless, and the Apaches murdered their prisoners before withdrawing. The army retaliated by hanging six Indian captives. The whole affair received wide publicity in the newspapers and helped to launch a decade-long Indian war.⁴⁰

Soon after the Bascom Affair, the Overland Mail Company began aban-



Apache Pass from Fort Bowie—photo by William A. Bell, Kansas Pacific Railroad survey, 1867. (Courtesy, Colorado Historical Society, Negative Nos. F-7016, F-28151.)

doing its route through the Southwest by order of the government. The Apaches saw the affair at Apache Pass and the departure of the mail line as cause and effect instead of coincidence. Sensing victory they began a campaign to kill or push out all of the settlers in southern Arizona. Stage stations came under increasing attack as the only points of settlement between the San Pedro River in Arizona and the Mimbres Valley in southwestern New Mexico.

At Fort Buchanan the climax came on June 22, 1861, when Cochise led upwards of a hundred men and ran off a herd grazing about a mile south of the post. The Apaches killed two guards and drove the mule herd toward Mexico, turning the cattle in the direction of the Whetstone Mountains. Lieutenant Bascom with a few troopers and two citizens set off after Cochise and the cattle. Near the Whetstones reinforcements joined Cochise's raiders,

who then turned and skirmished with the outnumbered soldiers. Bascom and his men held their ground, and the Indians eventually withdrew, suffering four killed and several wounded to one soldier wounded.⁴¹

Eight days later Special Orders No. 97 from the Department of New Mexico directed the abandonment of Fort Buchanan. The threat of a Confederate invasion had prompted the Military Department commander to pull his scattered garrisons together to mount a defense. The situation around the posts was little short of chaos, as many local citizens proclaimed their Southern sympathies and others looked for opportunities to plunder. On July 23, 1861, Fort Buchanan lay abandoned and burned.⁴² Just nine days before this, the Canoa Hotel, scarcely twenty miles distant, had been the scene of a spectacular fight, when about eighty Coyotero Apaches attacked the house and left the bodies of its four defenders strewn about the yard, the building itself in ruins. William Roods, a rancher, happened by, and the Apaches took after him until he found cover in a *charco*, or mudhole, where he fought them off, leaving twelve Indians killed or wounded.⁴³

As of August 8, all of the ranches, mines, and settlements in southern Arizona stood deserted, except for the Mowry Mine and Tucson.⁴⁴ The last cry for help, in the August 10, 1861 issue of the *Arizonian*, went unheeded. In the face of bandit raids, a ferocious Indian war, and an imminent Confederate invasion, the citizens were now entirely on their own.⁴⁵

The Civil War in Arizona

By the summer of 1861 Charles D. Poston, adventurer, director of the Sonora Exploring and Mining Company, and "Father of Arizona," had been in Arizona for almost five years. He left for California about a week after the army marched out of Fort Buchanan. In Los Angeles he told a newspaper that affairs in Arizona were "deplorable in the extreme," with Apaches raiding everywhere, no security for life or property, bands of Mexican guerillas plundering the country, and all of the mining interests abandoned. Anyone who chanced to read the stark descriptions and statistics in the *Arizonian* for August 10 might have concluded that Poston even understated the situation.⁴⁶

The Civil War itself was not an immediate concern in Arizona. Lieutenant Colonel John R. Baylor and his Texas Confederates had captured the U.S. forces in the Mesilla Valley of southern New Mexico late in July. On August 1, 1861, Baylor proclaimed a Confederate "Territory of Arizona," with himself as the governor. People around Tucson knew little of this, until veteran

expressman Henry Skillman began carrying the mail west from Mesilla to San Diego under a contract with the Confederate Post Office Department. On his last trip, Skillman arrived at Tucson early in September escorted by fifteen men from the San Elizario Spy Company, a unit raised among Southern sympathizers in the El Paso area. These were the first Confederate troops that Arizonians had seen. For at least another two months, the citizens of Tucson heard only silence from the east.⁴⁷

In mid-December Brigadier General Henry Hopkins Sibley, C.S.A., arrived in the Mesilla Valley with his Army of New Mexico, after a long march from San Antonio, Texas. There he joined his forces with the troops already at hand, under Lieutenant Colonel Baylor. These now included Captain Sherod Hunter's locally raised company of Arizona volunteers, many of whom had worked for the Overland Mail Company or had lived in the Tucson area. Hunter himself was a Tennessee native, but he had been in southern New Mexico at least since 1857.⁴⁸

Sibley marched up the Rio Grande Valley in New Mexico to victory at Valverde and then to defeat at Glorieta. At the same time, he sent Captain Hunter and his men west to take post "at some point near Tucson." The citizens there were believed to be pro-Southern, and the mineral wealth of that country was well known. Hunter also had instructions to open communications with southern California and to watch for an invasion from the west. During the march to Tucson, snowstorms buffeted his company and one man, Benjamin Mays, died at the San Simon crossing. When his command reached Tucson on February 28, 1862, the people hailed its arrival.⁴⁹

Hunter tarried only briefly before going on to the Pima Villages on the Gila River. There he captured a captain of the California Volunteers with nine of his men, a Federal scouting party that had ventured east from Fort Yuma on the Colorado River, where a Union army was being assembled to retake the Southwest. Some of the Confederates pushed west down the Gila River to the old Butterfield stop at Stanwix Station and exchanged shots with two Union pickets in the westernmost skirmish of the Civil War.⁵⁰

Out in Los Angeles, Colonel James H. Carleton heard about Hunter's Confederates entering Tucson. Scarcely two weeks after their arrival, Carleton ordered the first units of his twenty-three-hundred-man California Column east from Fort Yuma. On April 15 the Californians' advance guard ran into a Confederate picket post at Picacho Peak, northwest of Tucson, losing an officer and two men in the skirmish known as the Battle of Picacho Pass. Rumors flew on both sides about the strength of the opposition.

The California troops pulled back and two weeks later resumed a cautious advance. This time they selected a route up the Gila River to the San Pedro,

where they reoccupied old Fort Breckenridge, a short-lived post on the lower course of this river, renaming it Fort Stanford. They continued into Tucson via the Cañada del Oro and arrived on May 20, 1862, more than two weeks after Hunter's men had left.⁵¹

The retreating Confederates had to fight their way past Dragoon Springs, where the Apaches attacked them and reportedly caused the loss of forty horses, thirty-five mules, and all of the wagons.⁵² One prolific correspondent in the California Column described what he saw at Dragoon Springs as of June 23:

23d.—At Dragoon Springs found water scarce, but sufficient by using with care and patience. At night the surrounding mountains were alive with Indian fires. Near the stage station are the graves of Hunter's men, killed by the Apaches. On the graves were these inscriptions, neatly cut in rough stone, executed by one of the Union prisoners they had along: "S. Ford, May 5th, 1862" "Ricardo". Ford was a Sergeant, and Ricardo was a poor Mexican boy the Texans had forced into service at Tucson.⁵³

Carleton, now a brigadier general, pushed east again toward the Rio Grande and New Mexico. His columns never caught up with the retreating Confederates but found themselves opposed by hostile Indians at Apache Pass. In a confusing incident on June 25, some sixty Apaches managed to kill, scalp, and mutilate three soldiers, hold a parley with the lieutenant colonel in command, and then flee when shooting broke out again.⁵⁴

The Californians kept on toward the Rio Grande, crossing the southern deserts by detachments in consequence of the scarcity of water. On July 15 Captain Thomas Roberts led his contingent of 126 California Volunteers into the west entrance of Apache Pass, where an unknown number of Indians under the chiefs Mangas Colorado and Cochise lay in wait behind rock breastworks overlooking the approaches to a spring. As Roberts's troops advanced, the Apaches fired down on them. The Californians had brought a section (two guns) of mountain howitzers along. They now moved these guns up and commenced bombarding the Apache fortifications. The soldiers advanced under cover of the exploding shells and chased them away. The next day, as Roberts put it, he "[h]ad to repeat the performance of yesterday to obtain water." Once again his men drove the Indians out, then secured the spring and forced their way through Apache Pass. Ten Indians were reported killed, while two soldiers died and two were wounded. Carleton left a military post in the pass, naming it Fort Bowie.⁵⁵

Once arrived in Santa Fe, General Carleton assumed command of the Military Department of New Mexico and appointed Brigadier General Jo-

seph West to head a district that included Arizona. Desperadoes and suspected Confederate sympathizers, including Sylvester Mowry, proprietor of the Mowry silver mine, and a Tucson merchant named Palatine Robinson, were hauled before a military commission for examination. California Volunteers and civilian expeditions chased Apaches in a continuation of the blow-for-blow fighting that left peace as elusive as ever. For several more years, the Indians ruled southern Arizona outside of Tucson. A single rancher, Pete Kitchen, stayed on in his fortified house on Potrero Creek in the upper Santa Cruz Valley.⁵⁶ As of 1864, the writer J. Ross Browne described the Mowry Mine as the sole mine still in operation.⁵⁷

The Territory of Arizona

Changes were about to take place. No longer would citizens have reason to complain, as had Charles D. Poston back in 1857, that there was ". . . no government . . . no law . . . We are living in a perfect state of nature." Nor would visitors write home that "[t]he knife is the law, and the revolver justice," as did one Butterfield passenger in 1858.⁵⁸ Squatter sovereignty, on the other hand, still reigned supreme and even received official encouragement. This concept held that "Every man squats where he pleases, and uses what timber is necessary for his purposes. Each mining district has its own laws, and it is astonishing how the people quietly and peaceably obey them."⁵⁹

In 1863 prospectors discovered gold around present-day Prescott and near Wickenburg, in north-central Arizona. The inevitable rush followed, and suddenly Arizona was no longer just the Santa Cruz Valley. This happened virtually as President Abraham Lincoln signed a bill to establish a Territory of Arizona, on February 23, 1863.⁶⁰ Eleven months later newly appointed Governor John Goodwin and a set of territorial officials reached a new post, Fort Whipple, after a long ride from Washington, D.C. Fort Whipple became the temporary seat of government until a townsite almost twenty miles to the south had been selected as the territorial capital. The new territory with its wilderness capital, Prescott, was in business.⁶¹

A Land of Many Frontiers

As a territory Arizona received benefits considerably more substantial than just the federal appointees who were sent to govern it. Nearly all of the territorial expenses were met by federal appropriations, including the cost of the constitutional convention in 1910.⁶² Government purchases for Indian

nearly 550 people in December 1899, the same month the town received a post office. For several years this was Pima County's largest mining camp.⁶³

The citizens enjoyed baseball games, dances, baptisms, weddings, and perhaps even the knife fights, but they did without established law and order until 1901. The consequence was "the somewhat uproarious nature of life at Helvetia," as one writer expressed it.⁶⁴ Mining and smelting of copper ore continued through 1900, hampered only by periodic shortages of water or of coke for the smelter. In December 1900, after a production of more than 2,00,000 pounds of copper, the smelter caught fire and burned to the ground. Layoffs followed and although reconstruction began, production did not resume, copper prices then being in decline. The Helvetia Copper Company shut down all operations by the end of 1902.

In 1903 the business was reorganized as the Helvetia Copper Company of Arizona. A year of development work followed and after that, construction of a 150-ton copper-matte smelter. This smelter did not prove a success and closed early in 1907. Thereafter the company shipped its ore, until 1911. By July of 1911 the mines had closed.⁶⁵ Other small mining enterprises in the Helvetia area included the Tip Top Copper Co., which started operations in September 1904 and sent its ore to El Paso. The company closed down in the 1907 financial panic and reopened only briefly in 1912.⁶⁶

Helvetia lost both its importance and most of its population after 1911. A few dozen people continued to live there, buoyed by a hope that the mines would reopen, but this never happened. In 1921 the post office was discontinued; two years later the school closed. A large, abandoned store building emphasized the now-forlorn appearance of the town, where a weekly dance was still held in the old dining room of the abandoned, half-tumbled-down hotel. As for everything else, "the old buildings, most of them crumbling adobes long exposed to the weather, had been patched with whatever material was available at little cost. There were five fairly well preserved frame houses from which most of the paint had faded. The gaunt old pioneer schoolhouse with its tall steep roof was also of lumber, apparently never painted."⁶⁷

Lessees of the mines continued small-scale, irregular production and carried output to another peak in 1944-47. Since the 1950s activity has been slight and the town itself was reduced to one roofless adobe ruin as of 1980.⁶⁸ There is still copper here and interest may revive again; ASARCO has applied for a mineral patent covering claims near the divide in the Helvetia-Rosemont district.

The Patagonia Mountains

Prospectors covered these hills in the late 1850s, when they still bore the name Santa Cruz Mountains. Two of the five mining districts in the Patagonia Mountains became major producers, while the Patagonia Mine, renamed the Mowry Mine in 1860, is one of the most famous in Arizona.

The Harshaw mining district, at the northeastern end of the Patagonias, is bounded on the north by Sonoita Creek, on the east by Harshaw Creek and Meadow Valley Flat, to the south by an east-west line through American Peak, and by the general crest of the mountain range on the west. Immediately to the east and northeast lies the Red Rock district, which extends east to the approximate axis of the Canelo Hills. This district's northern and southern limits are Sonoita Creek and Meadow Valley Flat, respectively. The Palmetto Mining District adjoins the Harshaw district on the west and takes in the northwestern flank of the Patagonias, from Sonoita Creek south to Paloma Canyon. It continues west to the eastern boundary of Baca Float no. 3. South of the Palmetto and Harshaw districts, to the Mexican border, is the Patagonia Mining District. Its eastern line is the west edge of the Santa Cruz Valley plain, while the western boundary is an extension of the Palmetto district west line, southward to the Santa Cruz River. West of the Palmetto and Patagonia districts, as far as Nogales Wash, lies the Nogales mining district.⁶⁹

The predominant metalliferous mineralization in the Patagonias has been argentiferous lead, zinc, and some copper minerals. The oxidized zone near the surface gives way to sulfides at depth. The Harshaw and Patagonia districts are well mineralized, while mineral values in the Nogales, Red Rock, and Palmetto districts are spotty and weak, except for a large copper deposit at one mine in the Palmetto Mining District.

Harshaw Mining District

Mineral locations at the northern end of the Patagonias were rediscovered before the Civil War. Two of the earliest claims there, the Flux and the Trench, subsequently produced almost 85 percent of the estimated 1.3 million tons of ore yielded by mines of the Harshaw district through 1964.

The Flux Mine, four miles south of the present town of Patagonia, had allegedly been an old Spanish or Mexican working. After it was relocated in 1858, the owners smelted the richer ore in an adobe furnace near the mouth of Alum Gulch.⁷⁰ Then in late 1858, "Colonel" Henry Titus and George Mercer found two mines, the Trench and the Compadre, that exhibited more

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impressive evidence of earlier labors:

Cols. Titus and Mercer discovered two of the best [mines] in this country about a month ago; they are situated on the Santa Cruz mountains, four miles from Ewell's.

They are undoubtedly the best mines in the country, and were long and ardently sought after. They have been worked on the most extensive scale by the Spaniards, who abandoned them years ago on account of the Apaches, but before doing so, they covered them and they have been lost for years, until the recent discovery. The amount of labor done, exceeds that on the Sierra [sic] Colorado mine. They are the mines known in mineral works and in the traditions of the Mexicans as the Compadre mines. The one is argentiferous galena, of the richest kind, and can be reduced by the blast furnace in the cheapest manner. Thirteen old furnaces were found upon the ground, which had been extensively used by the miners who constructed them.⁷¹

Titus's Union Exploring and Mining Co. explored these claims for awhile, then sold them in 1859 to the New York and Compadre Mining Co. This company apparently did a little work, before abandoning the mines upon the outbreak of the Civil War.⁷² About 1872 the Trench Mine was relocated and worked for the rich surface deposits, which yielded 87 ounces of silver per ton.⁷³

The Herst estate bought the Trench Mine in 1880. A series of lessees then developed the property extensively, before the price of silver dropped and production ceased in 1894. Ore shipments resumed in 1918 and continued through 1925, after which lessees carried on sporadic operations. By 1939 American Smelting and Refining Co. (ASARCO) controlled the property and greatly increased the output of lead and zinc ores with high silver values. Twenty years later the major deposits were becoming depleted, to the point where production came to a virtual standstill in the mid-1960s.⁷⁴

The Flux Mine, worked from the 1850s to 1963, accounted for more than half of the ore tonnage from the Harshaw district. This mine was relocated in 1882 and through 1884 supplied perhaps several thousand tons of ore to the Benson smelter. Everything then remained quiet until 1897, when lessees began sporadic operations that extended over the next sixty years, extracting lead and zinc, with copper and silver as important byproducts. An estimated 850,000 tons of ore were taken out before the deposits became uneconomical to mine.⁷⁵

Within this same four-mile-long mineralized belt are the Alta, American, Blue Nose, Hardshell, Hermosa, January, Josephine, and World's Fair mines,

all principal producing properties discovered in the late nineteenth century and worked in some instances into the 1960s. Between 1930 and 1970, the Harshaw district reached its peak as a major metal producer, with the total estimated and recorded production of base and precious metals through 1972 valued at about \$41,500,000.⁷⁶

David T. Harshaw, a Civil War veteran and member of the California Column, tarried briefly at the Greaterville placers before moving south into the Patagonias. He staked some silver claims there, and about 1879 the Hermosa Mining Co. acquired one of his properties, the Hermosa Mine. They promptly began development, constructed a 100-ton stamp amalgamation mill, and had this mine in production by October of 1880. The Hermosa mine and mill became the nucleus for the town of Harshaw.

Harshaw boomed overnight; the 1880 census reported six hundred people there. The businesses and professions represented at Harshaw (miners, laborers, merchants, blacksmiths; restaurants, lodging houses, saloons, and livery stables) made it a typical mining camp. In other ways Harshaw was not typical; it escaped most frontier violence, and many of the buildings were constructed of permanent materials.

Prosperity unfortunately was short-lived. The mine and mill closed in the latter part of 1881, after the better ore had been exhausted. This was a severe blow, although other mining activity in the surrounding mountains kept hopes alive. In 1890 James Finley of Tucson reopened the Hermosa mine and carried on operations until the price of silver dropped in 1893. Finley died in 1899, and lessees took over until 1903, when all work stopped. The only remaining building at Harshaw is the Finley house, built of bricks allegedly taken from the old smelter stack at the Mowry mine.⁷⁷

After 1883 Patagonia became the principal settlement and mining center in the Harshaw district. It started as a railroad camp during construction of the New Mexico and Arizona Railroad, then served as a shipping point for the mines in the Patagonia Mountains. The town even had its own smelter for a brief time, blown in in August of 1897 and operated for three months.⁷⁸ This community still flourishes as a retirement and vacation center and as a supply point for ranches in the area. Memories of the half-dozen lesser mining camps scattered through this district have long since faded.⁷⁹

Patagonia Mining District

This is one of the most historic mining districts in Arizona, primarily because of one mine, the Mowry, and one man, Sylvester Mowry. The two largest areas of mineralization are at the Mowry mine and about four miles

to the south, at what is called the Duquesne-Washington group of mines. Both the Mowry Mine, originally known as the Patagonia, and the Montezuma and Empire claims in the Washington area were located in 1858.⁸⁰

A metallurgist writing in 1860 said that the first loads of ore from the Mowry mine came "from shafts which had been sunk many years and which had been abandoned."⁸¹ According to one correspondent, ". . . the whole country abounds with mines of silver, copper and other valuable ores." As for this particular discovery,

In the mountains of Santa Cruz Valley, about thirteen miles from the Mexican line, a new mine has been opened. The company has not yet been organized. . . . A shaft has been sunk thirty feet deep, with drifts seven feet each way, from which thirty or forty tons of ore have been dug up. Capt. Newell [*sic*; Ewell] and Lieut. Moore are interested in this new undertaking. The vein is very broad, as the driftings have not yet discovered its margin.⁸²

Captain Richard Ewell, then stationed at Fort Buchanan, visited the mine and apparently had mixed feelings about it. In a letter to his niece, he wrote that

The Patagonia Mine (so they call the one in which I am interested) is fast sinking towards the centre of the earth. It is the darkest, gloomiest-looking cavern you can imagine, about 50 feet deep, with prospects looking quite bright. I have been offered \$1,000 for my interest, having at that time expended about \$100; so if we fail, the croakers can't say it was an absurd speculation.⁸³

Until 1860 the property was known by its original name, although it had already changed ownership several times. Then on April 9, 1860, Sylvester Mowry bought the holdings for either \$22,000 or \$25,000 and changed the name to the Mowry Mine. His older brother Charles came west to superintend the operations, while Sylvester occupied himself elsewhere until the summer of 1861. With the outbreak of the Civil War, it became necessary to fortify the mining camp against assaults by Apache Indians and Mexican outlaws. Mowry by this time was employing a work force of up to three hundred men and handling the mine as if he had sole ownership, although this was evidently not so. He had twelve ordinary Mexican blast furnaces in operation and continued to work right through the period of Confederate occupation.⁸⁴

Then on June 13, 1862, a detachment of California Volunteers arrived to arrest Sylvester Mowry and all other men on the premises as suspected Confederate sympathizers. Mowry was taken to Fort Yuma on the Colorado River

and jailed for five months before being released. The mine continued under a receiver for a time, shut down, and then resumed a curious on-again, off-again pattern of operation with brother Charles returning again as superintendent until early in 1866, when the last period of operation by the Mowrys ended.⁸⁵

During its entire early history, the production of the Mowry Mine went unrecorded. Sylvester claimed that he shipped about \$1.5 million worth of ore, but more reasonable estimates place the value of silver and lead mined from 1858 to 1864 at between \$100,000 and \$485,000.⁸⁶ Whatever the truth, the Mowry Mine was the most valuable producing property in Arizona during these early years. It was relocated in the 1870s, but very little happened until Silverberg and Steinfeld of Tucson acquired the property in 1890. During three years of development work, they took out several hundred tons of ore. In 1904 the Mowry Mines Co. purchased the property and did extensive development work, but their venture failed with the business recession of 1907. The mine has been worked sporadically since, as recently as 1952. The total estimated and reported production of lead-silver ore is approximately 200,000 tons.⁸⁷

The second large center of mineralization is the Duquesne-Washington camp area. About the time the Mowry Mine was discovered, two men named Thomas Gardner and Hopkins relocated two or three old mines about four miles south of Mowry, near what became Washington Camp. The Montezuma, Empire, and Belmont claims lay within a few hundred yards of one another and had allegedly been mined for silver during the Spanish and/or Mexican periods. Little work was done prior to the Civil War, and the district was abandoned.⁸⁸ Later in the nineteenth century, the Pocahontas, Washington (later called Pride of the West), Bonanza, Annie, Belmont, Empire, Holland, and a dozen or so other mines were worked for the high-grade lead-silver ores in their upper levels. The deposits change into massive copper-lead-zinc sulphides at shallow depths.

George Westinghouse of the Westinghouse Electric Co. acquired a number of claims in the area beginning in 1889. The Westinghouse interests, organized as the Duquesne Mining and Reduction Co., invested heavily in development and in equipping their property for large-scale production. Under the reduction methods of that time, the complex base-metal sulphides could not be treated economically, and attempts to unlock the values led to a long period of experimentation and sporadic operations. Major production finally began in 1912 and continued until about the end of 1918. The mill at Washington closed down then, and mining was turned over to lessees. Various deposits have since been worked intermittently, continuing into the mid-

1960s. The total production of the Duquesne-Washington group of mines came to more than 450,000 tons of ore, with zinc, lead, and copper the principal values and silver as an important byproduct.⁸⁹

Farther west in the Patagonia district lay a series of small copper producers, exploited sporadically in the twentieth century. The Santo Niño, located in 1908 and operated through 1955, was the most important of these. For the entire Patagonia district, the value of base- and precious-metal production through 1972 is placed at \$17.9 million, primarily from zinc, lead, copper, silver, and gold. Three-quarters of this total was recovered in the present century.⁹⁰

The principal mining camps of the district were Mowry, Washington, and Duquesne. Mowry probably started in 1858; its heyday came between 1905 and 1907, when the Mowry Mines Co. had two hundred or more men engaged in development and operations. Only an extensive series of stone and adobe ruins remained in 1980. Washington Camp had been settled by the 1870s; the Duquesne Company added an elaborate concentrating plant and smelter, also building offices, bunkhouses, a boardinghouse, and a number of dwellings. Duquesne itself, one mile to the south, originated with the Westinghouse involvement and served as the mining-company headquarters. Today it retains many well-preserved frame buildings and residences.⁹¹

Red Rock Mining District

The Red Rock mining district, on the northeastern flank of the Patagonia Mountains, has small, shallow occurrences of oxidized copper, lead, and zinc. The first miners arrived in 1881, in search of oxidized silver ores. They located the La Plata, New York (Jensen) and Meadow Valley mines, all in the southeastern part of the district, and extracted small amounts of ore. Twentieth-century discoveries include the Blue Bird Mine, a manganese claim in the Canelo Hills in the far southeastern corner of this district, and the Frisco Fair mine group and Durham Copper claim. Sporadic workings in various of these operations continued as recently as the early 1950s. The value of base and precious metals is given as \$15,000. Patagonia was the principal mining town for this region.⁹²

Palmetto Mining District

The exposed mineralization on the northwestern side of the Patagonias consists of narrow veins of argentiferous lead plus an unusual and local deposit of disseminated copper minerals. The Domino, Jarilla, Palmetto (Tres de Mayo), and Sonoita mine groups were all located between 1879 and 1881

and worked during that period. Old shafts at the Palmetto mine may be much earlier. Sporadic operations at these mine groups recovered only from 100 to 500 tons of lead-silver ore at each.

Mining activity at both the older argentiferous galena claims and at the more recently discovered copper deposits continued into the 1960s. The largest single mine and the most important copper producer was the Three-R property, located in 1897 and situated well up on the western slope of the Patagonias. This body of high-grade copper ore was worked from 1908 through 1956 by a series of owners and lessees, who recovered some 130,000 tons of ore in all. The last recorded production from the Palmetto district dates from 1969, at which time the value of base- and precious-metal output was given as \$2.1 million.⁹³

Nogales Mining District

This broad region, lying to either side of the Santa Cruz River above Calabasas, has only two localities with reported lode deposits. One is the slopes of Mount Benedict, once called Gold Hill, an isolated peak north of the town of Nogales. This hill was reportedly prospected for its narrow, oxidized veins of lead-silver-gold ore as early as the middle 1800s. Several small mining properties there yielded a total of about 1,100 tons of ore, valued at \$54,000. Work continued to 1967.

The other locality is the Reagan Camp, three miles north-northwest of Mount Benedict. Wolframite, a tungsten mineral, was found here in 1906. Between 1906 and the late 1930s, an estimated 1,500 tons of 50-percent WO₃ concentrates were produced. Limited commercial production of wolframite was achieved elsewhere in southern Arizona at the Edna mine group in the Patagonia district and from the Las Guijas and Hartford (Huachuca Mountains) districts.⁹⁴

Gold placers, reputed to be "the oldest and largest placer mines in this part of the country," occur in the Quaternary gravels along Guebabi Canyon, east of the Santa Cruz River. Perhaps these placers were part of the gold mines reported near Guevavi in the Spanish and Mexican periods. They were worked as recently as the 1930s, the output always remaining small. Other gold placers in the Patagonias include the Palmetto placers, about 2.5 miles northwest of the Three-R mine; Quaternary gravels approximately two miles southwest of Patagonia; and the piedmont portion of Mowry Wash and its tributaries. At least \$1,500 in gold has been recovered in the twentieth century. Miners returned to these when lode mining was suspended and in times of economic depression.⁹⁵

28. Ariz. Bur. of Mines 1951, 41-49; Meyer 1974; Jerry Jenkins, "Ruby is All Alone," *Desert* 30(12) (1967):28-30; Philip Varney, *Arizona's Best Ghost Towns* (Flagstaff: Northland Press, 1980), 88-90.

29. Keith 1975, 25-28.

30. Keith 1974, 25-33; Frank C. Schrader, *Mineral Deposits of the Santa Rita and Patagonia Mountains, Arizona*, U.S. Geological Survey Bulletin 582 (Washington, D.C.: U.S. Government Printing Office, 1915), plate 1.

31. H. C. Grosvenor, "Letter From Arizona," *Railroad Record*, August 12, 1858, p. 293.

32. Browne 1974, 228; H. C. Grosvenor, "Early Efforts on the Santa Rita and Salero," *Arizona Cattlelog* 29(7) (1973):15.

33. Altshuler 1984, 21-76; Raphael Pumpelly, *My Reminiscences*, vol. 1 (New York: Henry Holt and Company, 1918); William A. Duffen, ed., "Overland Via 'Jack-ass Mail' in 1858: The Diary of Phocion R. Way," parts 1-4, *Arizona and the West* 2(1-4) (1964).

34. Pumpelly 1918, 199, 207, 224-26.

35. Tenney 1927-29, 244, 314-15; Browne 1974, 228-30; North 1980, 201; *War of the Rebellion: A Compilation of the Official Records of the Union and Confederate Armies* (hereafter cited as *War of the Rebellion*), Series 1, vol. 50, pt. 1 (Washington, D.C.: U.S. Government Printing Office, 1897), 402.

36. Schrader 1915, 194-97; Tenney 1927-29, 315; Keith 1975, 87.

37. Schrader 1915, 197-214; Tenney 1927-29, 314-17; Keith 1975, 83.

38. Sherman 1969, 133; Varney 1980, 80-82.

39. Schrader 1915, 180-220; Tenney 1927-29, 314-21.

40. Keith 1975, 27, 85-86.

41. Schrader 1915, 220-39; Tenney 1927-29, 317-19; Keith 1975, 28-29, 88-90.

42. Rossiter W. Raymond, *Statistics of Mines and Mining in the States and Territories West of the Rocky Mountains: . . . Eighth Annual Report, 44th Cong., 1st Sess., House Exec. Doc. no. 159* (Washington, D.C.: U.S. Government Printing Office, 1877), 342.

43. Schrader 1915, 158, 162-64; Wilson 1981, 74-76.

44. *Arizona Weekly Citizen*, October 9, 1875, p. 3.

45. *Arizona Citizen*, February 5, 1876, p. 2.

46. Schrader 1915, 158; Young 1967, 54-56.

47. Schrader 1915, 159; see n. 45.

48. Schrader 1915, 158-59; Tenney 1927-29, 277.

49. Schrader 1915, 159-60; Tenney 1927-29, 277-78; Wilson 1981, 72-73.

50. Schrader 1915, 152-58; Tenney 1927-29, 278; Keith 1974, 25-27, 120-21. Varney 1980, 79 refers to the Anderson mine as the "Snyder mine."

51. Sherman 1969, 70-71; Varney 1980, 78.

52. *Tucson Citizen*, September 4, 1979, Section C, pp. 1-2.

53. Schrader 1915, 166-80; Keith, 1974, 33, 1975, 15; Wilson 1981, 80.

54. Keith 1974, 31.

55. Tenney 1927-29, 252, 473-74; "Report of the Governor of Arizona [1895]," *Report of the Secretary of the Interior . . . vol. 3, 54th Cong., 1st Sess., House Doc.*

no. 5 (Washington, D.C.: U.S. Government Printing Office, 1895), 354, 426; "Report of the Governor of Arizona [1898]," 279; James E. Ayres, *Rosemont: The History and Archaeology of Post-1880 Sites in the Rosemont Area, Santa Rita Mountains, Arizona*, Archaeological Series no. 147, vol. 3 (Tucson: Cultural Resource Management Division, Arizona State Museum, 1984), 27-28.

56. Schrader 1915, 115; Tenney 1927-29, 252; Ayres 1984, 30; "Report of the Governor of Arizona [1899]," *Annual Reports of the Department of the Interior . . . Misc. Reports, part 2, 56th Cong., 1st Sess., House Doc. no. 5* (serial no. 3918) (Washington, D.C.: U.S. Government Printing Office, 1899), 146-49.

57. Sherman 1969, 130; Ayres 1984, 30-38; William P. Blake, "Sketch of Pima Co., Ariz., Mining Districts, Minerals, Climate and Agriculture," *Arizona Daily Star*, June 19, 1910, 1st Section, p. 6.

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