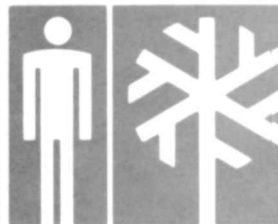


historic structure report

historical data
september 1977

TUMACACORI
THE ANGLO PERIOD



NATIONAL MONUMENT / ARIZONA

HISTORIC STRUCTURE REPORT
A HISTORY OF THE ANGLO PERIOD
TUMACACORI NATIONAL MONUMENT
ARIZONA

by

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UNITED STATES DEPARTMENT OF THE INTERIOR
DENVER, COLORADO

September 1977

ACKNOWLEDGEMENTS

This post-1848 account and stabilization-restoration history of Tumacacori National Monument has been written to provide information for its preservation.

My thanks are extended to Superintendent Joe Sewell of Tumacacori National Monument and his staff, the librarians in the Western Archaeology Center, and personnel of the National Archives, Library of Congress, Denver, Colorado and Laguna Niguel, California regional archives, the Huntington Library, Bancroft Library, California State Library, University of Arizona Library, Arizona Historical Society, Arizona State Archives, Pima County Court House, Arizona State University Library, Arizona Historical Foundation, Sharlot Hall Museum, and the many others who have aided my research.

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ADMINISTRATIVE DATA

This project involves the mission church at Tumacacori National Monument. The structure, which is listed on the National Register, is of the first order of significance. The proposed treatment is stabilization of that structure which forms the main resource of this national monument.

STATEMENT OF HISTORICAL SIGNIFICANCE

Located on the E-1/2 of the NW-1/4 of the SW-1/4 of the SE-1/4 and the West 1/2 of the NE-1/4 of the SW-1/4 of the SE-1/4 of Section 30, Township 21 south, Range 13 east of Gila and Salt River Meridian, Arizona, Tumacacori mission represents one of the oldest outposts of European civilization in the United States. No history of the United States is complete without including the settlement and heritage of this area.

INTRODUCTION

Tumacacori mission stands today as a monument to the expansion of Spanish society in the New World. The mission was part of a mission chain which acted as an advance agent of Spanish civilization in the hostile Sonoran desert. Soon came the soldier, the miner, and farmer/rancher to add stability. Unfriendly, aggressive Apache Indians, however, caused an uneven advancement and often forced a temporary retreat in portions of the area.

Late in the seventeenth century, Spanish missionary influence entered the area on the northern edge of New Spain. This region, designated the Pimeria Alta, encompassed present-day southern Arizona south of the Gila and west of the San Pedro rivers. It also extended into the northern portion of the state of Sonora, Mexico, as far as the Rio Altar and Magdalena valleys.

Padre Eusebio Kino, a Jesuit, provided the leadership for this missionary activity. In 1691 he entered the Santa Cruz River valley to visit the village of Tumacacori at the request of the Pima Indians located there. At first Kino lacked the funds to administer the area properly. Not until 1701 did he assign a priest to the Santa Cruz Valley. At that time he designated the village of Guevavi as the central mission. Tumacacori formed a nearby *visita* or place of periodic visitation. Indian villages, both headquarters and *visitas*, were structured by the priests into orderly societies. An Indian mayor was elected. He aided the priests with Indian affairs. Indians were required to attend a daily sunrise service in the mission and to give some of their time to labor for the mission in the fields or about the church.

Lacking an adequate number of priests to staff the Santa Cruz Valley missions and facing aggressive Apaches, Kino soon directed his attention to other areas of the Pimeria Alta. As a result Guevavi and its *visita*, Tumacacori, had no priest from 1704 until 1731. Service was interrupted again five years later. Finally, beginning in 1741, Guevavi received the continuous attention of the Spanish priests.

Stability came to the valley after the Pima uprising of 1751 with the establishment of a military post at nearby Tubac. Taking advantage of the peace, the Jesuits constructed a church at the Tumacacori *visita*. The Guevavi burial register for July 7, 1757, recorded the interment of Tumacacori's Indian mayor in that *visita's* church.

Ill-fortune pursued the Jesuits. In 1767 the Spanish king expelled the order from his New World domain. Madrid hoped to replace the Jesuits' paternalistic Indian policy with one based on the principles of the Enlightenment. The Indians were granted civil rights which were protected by the king. The new missionaries were instructed to educate the Indians for a productive social and economic lifestyle as exemplified by the Spanish citizenry. This plan foresaw the mission system as a temporary institution which educated the Indians for integration into the community. In addition the Spanish government removed

control over the missions' economic affairs from the priests and appointed commissioners to regulate mission assets. As a start, Indians who worked at a mission would be paid.

In 1767 the Franciscan missionaries from the college of Queretaro were asked to administer the former Jesuit missions of Pimeria Alta. The first Franciscan arrived at Guevavi in 1768. Attached to this mission were three *visitas*--Sonoita, Calabasas, and Tumacacori.

The new policy of freedom for the Indians failed. They wandered from the mission and did no work. Commissioners often took advantage of them, even to the extent of selling their property. In 1769 the government gave economic control to the Franciscans. Now fully in command of their missions, the fathers reapplied the paternalism developed by the Jesuits. Other reform efforts in later years failed to change the system.

Apache depredations followed the Franciscans to their missions. As a result the priest at Guevavi moved his headquarters to Tumacacori in 1770 or 1771. This change of residence placed him closer to the Spanish *presidio* at Tubac. Protection from that fort lasted only a short time, however, for in late 1775 the Tubac *presidio* moved to Tucson.

Apache raids increased in the 1770s. On December 22, 1776, they attacked Tumacacori and drove off some cattle. In June of the next year they burned the Calabasas *visita*. Four months later Apaches stole the last livestock at Tubac.

Appeals to reoccupy the Tubac *presidio* went unanswered for ten years. In 1787 a Pima Indian force, used to support the Spanish army, returned to Tubac. About the same time the Calabasas *visita* was forsaken. Tumacacori no longer had any *visitas*. The priest ministered only to the residents of Tumacacori and Tubac.

Unable to subdue the Apaches, Jose Galvez, Viceroy of New Spain, turned to a pacification policy. He supplied the Indians with food, drink, and trinkets at government expense. They were encouraged to settle as farmers. Except for occasional raids, this policy proved effective from 1790 to the early 1830's.

Americans, who came in the 1850s, were not the first settlers in the Santa Cruz Valley. A Spanish settlement law in 1791 encouraged family settlement on the frontier. People came and located all around Tumacacori. Most pursued agricultural activities. As a result stock raising became a major industry in the area. Few sought their fortune in mining.

Two years before the Settlement Law of 1791, Torbio de Otero received the first land grant of the Santa Cruz Valley. He settled near Tubac. The Buena-vista ranch, south of the Tumacacori lands, was occupied in 1806. Most petitions for land grants in the Santa Cruz Valley, however, were filed in the 1820s and 1830s.

At first, peace did not seem to affect Tumacacori. Padre Baltazar Carillo, who came in 1780, appeared content to allow the mission to decline. The old Jesuit church, in which services were held, fell into disrepair. A description

in 1795 proclaimed the structure as a cramped and flimsy little chapel reconstructed by degrees. The next year Padre Mariano Bordoy wrote, "As to the Church structure, I say: that it is now split open into two parts and consequently there is some need that a new one be built." Franciscans at nearly all the other locations in Pimeria Alta had completed or were constructing splendid churches in place of the old Jesuit buildings. Padre Carillo apparently lacked the interest to follow suit at Tumacacori.

Construction of a new church fell to Padre Narciso Gutierrez, Carillo's successor. He joined Carillo at Tumacacori in 1794, a year before the latter's death. Circumstances, including a year and a half absence, prevented Gutierrez from planning a new building for a time. With his return to Tumacacori in January 1798 he determined to construct a church.

Using San Xavier del Bac as his model, Padre Gutierrez staked out the site of the new mission about fifty feet behind the old Jesuit building. His conception of a structure patterned after San Xavier undoubtedly explained the cruciform style first used in construction. Actual building apparently began in 1802. Census figures for that year indicated a sharp increase in population. This growth reflected the addition of laborers and craftsmen who arrived to work on the new building. In May 1803 the Father President, Padre Francisco Moyano, indicated that construction was in progress.

Whether from lack of money, labor shortage, or occasional Apache attacks, Gutierrez's project suffered interruption. It was not completed when he died in December 1820. Replacing Gutierrez, Padre Juan Bautista Estelric continued construction. He sold 4,000 of the mission's cattle to raise the necessary funds. Although it cannot be documented, it was probably Estelric who decided the cruciform style was too elaborate to complete with the time, labor, and funds available. In any case the transepts were removed and the church transformed into a simple nave style. He also undoubtedly began work on the facade, for it reflects an architectural style which would have been more familiar to Estelric than Gutierrez. The Egyptian style lotus blossom capitals on the pilasters would not have been an architectural feature until after 1810. Since Estelric came from Spain in 1818, he would have had more opportunity to observe that style than Gutierrez who arrived in 1790.

Estelric's successor, Fray Ramon Liberos, who arrived in May 1822, also proceeded with the structure's erection. By December the church was complete enough to allow the first service. The dome of the bell tower and mortuary chapel behind the mission, however, were never finished.

After Mexico gained independence in 1821 the government adopted an anti-Spanish sentiment. On December 20, 1827, it decreed that all Spanish born missionaries had to leave the country. Word reached Tumacacori in April 1828. Only two Mexican priests remained to administer the Pimeria Alta churches. Fray Rafael Diaz took charge of the missions at Cocospera, San Xavier, and Tumacacori.

Six years after Liberos's expulsion, the Mexican government secularized all missions. The length of Padre Diaz's tenure at Tumacacori has not been determined, but even if it were not long, the Church did not desert the mission. Records show that in 1841 Friar Antonia Gonzales had Tumacacori in his charge.

In 1842 the Mexican government provided that abandoned pueblo land with a value of \$500 or less could be sold at public auction. Manuel Gandara, governor of Sonora, proclaimed the Tumacacori land abandoned in 1844 and sold it to his brother-in-law for \$500. The land, however, was not abandoned, for Papago Indians continued to reside in the village. Padre Trinidad Rojas visited the mission between August 1844 and September 1847 during which time he baptized eighteen children. Although a priest probably no longer came to the mission after 1847, the Indians remained and cared for the church. Cave J. Coutts passed through the valley in 1848. In his diary for October 25 he wrote, "At Tumacacori is a very large and fine church standing in the midst of a few common conical Indian huts, made of bushes, thatched with grass, huts of most common and primitive kind." He found the church in the care of the Indians, ". . . all its images, pictures, figures, etc., remain unmolested and in good keeping."

The 1840s proved an especially difficult period for the people of the Santa Cruz Valley. The Mexican government lacked the money and interest to continue Spain's Indian pacification program. As a result, Apache raids began again in the 1830's. By the 1840's most valley settlers abandoned their homes and retreated south. The renewed Apache activity had its effect on Tumacacori as well. Papago inhabitants were forced to abandon their mission village in December 1848. After an Apache attack in that month they joined the Papago at San Xavier near Tucson. They took most of the religious articles from the church with them.

CHAPTER I: TUMACACORI: A TIMELESS MONUMENT

Although Tumacacori's Papago inhabitants abandoned the village in December 1848, the area did not long remain deserted nor did the mission lose its spiritual significance for local people. Over the years periodic celebrations of religious festivals, as well as weddings and funerals, took place in the church.

In the meantime other forces were at work which would affect the mission and valley. Six months before the Indians retreated from their homes to San Xavier, the treaty which ended the Mexican-American War and gave the United States its southwestern territory took effect. Although Tumacacori was located outside this territory for another six years, it soon felt the effects of thousands of Americans who traveled to California in search of gold.

One of the "Forty-niners'" routes to the West Coast led through northern Mexico to the town of Santa Cruz, Sonora. Here, the travelers followed the Santa Cruz River northward. In the course of their travel through that valley they passed Tumacacori. Many commented on the valley's beauty. Compared with the territory through which they had passed, it must have seemed like an oasis. Bathed in the warm sun, the grass-covered valley wound between mountain ranges. Ancient cottonwoods interspersed with mesquite crowned the river banks. As the traveler progressed north, beyond the mission, he entered a fairyland of cactus. One man described the desert landscape as having "altogether so far exceeded any thing I could have imagined [*sic*] that I suppose any who reads this will doubt my word. . . ."1 Others saw only abandoned land. The valley to one traveler presented a "melancholy spectacle of deserted ranchos, and fields running to waste."2 Another observed that he had entered "a very extensive valley that at one time has been under a high state of cultivation."3

Many travelers, who kept diaries, attempted to describe Tumacacori mission as well as the terrain. The first recorded gold-rush party passed the mission on May 27, 1849. John E. Durivage, a correspondent for the New Orleans *Daily Picayune*, merely noted that Tumacacori was abandoned. The owners had "gone with

1. John Robert Forsyth, "Journal of a Trip from Peoria, Illinois to California on the Pacific in 1849," Peoria Public Library, Peoria, Illinois, p. 75.

2. Asa Benent Clarke, *Travels in Mexico and California: Comprising a Journal of a Tour from Brazos Santiago, Through Central Mexico, by way of Monterey, Chihuahua, the Country of the Apache, and the River Gila, to the Mining Districts of California*, (Boston: Wright and Hasty, Printers, 1852), p. 84.

3. David Jordan, "Diary, 1849," California State Library, Sacramento, California, p. 110.

all their people to California to dig gold," he speculated.⁴ The next day Asa Benent Clarke viewed the deserted church from a half mile and thought he saw a castle and church combined. "The large church had a dome resembling the State house, in Boston," he recorded. Although Clarke did not ride to the mission, those of his party who did told him it was in good repair with splendid guilding. Peach, pear, and quince trees were found in the garden.⁵

Not until July 1849 did another traveler record his journey. On the sixth of that month Dr. David Jordan and his party camped near Tumacacori. Jordan thought the deserted mission had a beautiful exterior. After he visited the structure he wrote, "it certainly has been a most splended [*sic*] building--there is considerable of the furniture still there, it has been surrounded by a large wall, but it is now tumbling down."⁶ Four others in separate parties which followed Jordan in August and September merely noted deserted buildings.⁷

By October 1849 John Robert Forsyth found that many of those who used the Santa Cruz Valley trail had left their "names most shamelessly scratched on the Walls. . . ." Forsyth, who arrived at Tumacacori on October 1, penned the first lengthy description of the mission. He wrote,

a few miles after leaving camp I was astonished to hear the Clear loud Ring of two bells which chimed harmoniously on the pure morning air and on looking across the Valley & stream I espied a handsome white church. on passing over I found as usual all desolation. Some of the young men of the Train had been in advance & were ringing the Bells in something of an unusual manner. Some of the adventurous of the boys had fastened the long lash of their Ox whip to the clapper & were pealing out a merry chime. the Church & all the surrounding Buildings were in a fine State of preservation. the Paintings Guildings, Cement Floor, Walls & every thing was in perfect

4. Ralph P. Bieber, *Southern Trails to California in 1849* (Glendale, Calif.: The Arthur H. Clarke Co., 1937), p. 209.

5. Clarke, *Travels in Mexico and California*, pp. 83-84.

6. Jordan, "Diary, 1849," pp. 108-10.

7. George Counts, "A Journal of the Travels of George Counts to California in 1849," Arizona Historical Society, Tucson, Arizona; George W. B. Evans, in a second party, did identify one of the deserted structures as one of the finest Spanish structures he ever saw. George W. B. Evans, *Mexican Gold Trail: The Journal of a Forty-Niner* (San Marino, Calif.: The Huntington Library, 1945), p. 149; Robert Beeching, of the third group, described a deserted place which he called Lanacaat. He must have meant Tumacacori from the location description. Here he found a large quantity of unripe peaches. Robert Beeching, "Journal of R. Beeching," Huntington Library; C. C. Cox also found peaches at the deserted mission. Mabelle E. Martin, ed., "From Texas to California: Diary of C. C. Cox," *Southwestern Historical Quarterly* 29 (October 1925) 143.

order with the exception of the names most shamelessly scratched on the Walls by some of the Gold seekers. The whole place had a monastic appearance rows of cells confessional stalls etc. the Garden was well filled with full Grown Fruit Trees & they had been heavily laden with Peaches Pomegranetes Quinces etc but very few were left for us, however we gleaned a few Peaches. there was something Oriental in the appearance of this secluded & deserted town. the white domes of the church the deep Green trees, the Peaked & Rocky mountains immediately in the rear all combined to give it an asiatic effect in our eyes. the High Garden Walls & beautiful Baths still in as perfect a state as when left by the fair inmates of the convent led us to believe that the Apaches gave them but short notice previous to departure.⁸

In addition Forsyth noted the bells bore the date 1809. His description was a tribute to the orderliness in which the Papago Indians had kept the mission. Since the church had but one dome, Forsyth's depiction of "domes" could have been a slip of the pen. The "beautiful Baths" of which he wrote were probably part of the garden irrigation system.

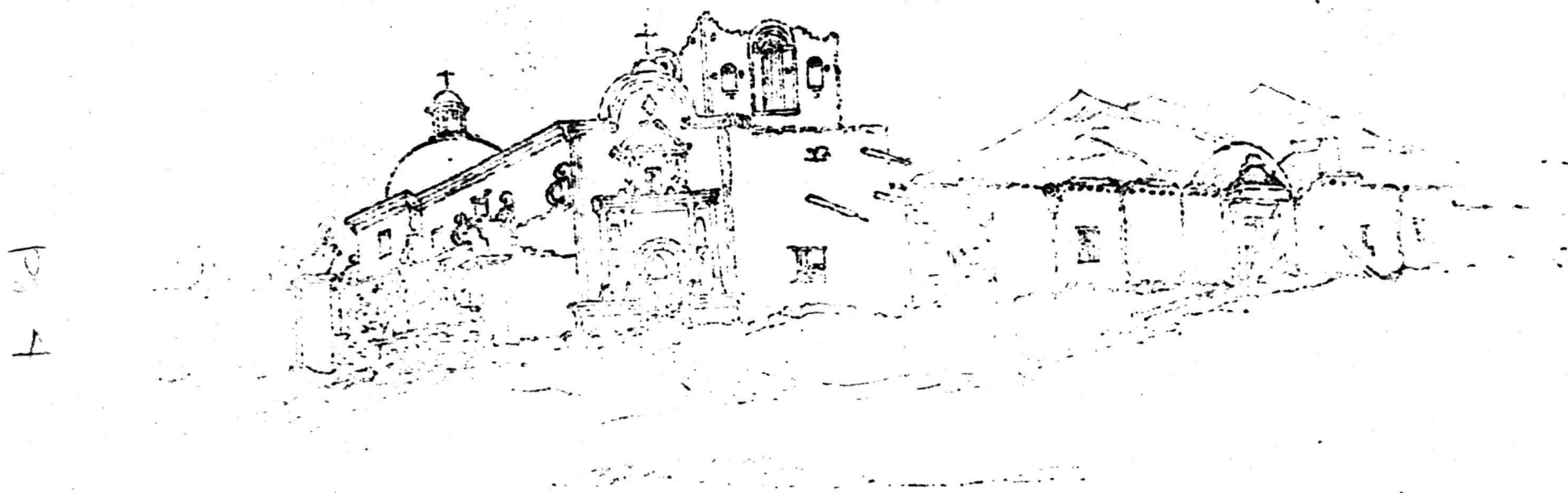
Two others who passed the mission in October 1849 also provided lengthy, complementary descriptions. One of these men, H. M. T. Powell, even sketched the mission (Figure 1). Powell stated,

The church is built chiefly of brick, plastered over. The square tower looks as if it had never been finished. The houses, extending East, are adobe. The church inside is about 90 x 18, painted and gilded with some pretensions to taste. The Altar place under the dome was, of course, more carved, gilded, and painted than anywhere else. Behind the church, North side, there is a large burying ground enclosed by a neat adobe wall plastered and having niches in it at intervals. There was a circular oratory at the South end of it near the church. East of the Church there was a large square yard, on the West side of which, passing under some solid arches, we came to a flight of steps leading to a granary, etc. . . . In the square tower there were three large bells, and there was one lying inside the church, dedicated to Senor San Antonio--dated 1809.⁹

The 1809 date which Powell found on the bell bore out the previous find of John R. Forsyth. These bells later disappeared. Despite the speculation that they were removed and buried for preservation or stored elsewhere, they were no doubt destroyed by treasure hunters who thought they were made of gold or silver.

8. Forsyth, "Journal," p. 74.

9. Douglas S. Watson, ed., *The Santa Fe Trail to California, 1849-1852: The Journal and Drawings of H. M. T. Powell* (San Francisco: The Book Club of California, 1931), pp. 141-42.



Templo Tumulucan

Figure 1

Daird Brainard, who provided the next description, followed Powell by one week. On October 13 he wrote that his party passed a church which measured about 100 feet long and forty feet wide on the exterior. To the mission's rear was a long oblong enclosure (the cemetery), the walls of which were made of "gravel." It was also cemented and "finely ornamented." This ornamentation was accomplished by putting different colored stone in the cement before it hardened. The wall's foundation was made of cobblestone which projected nearly a foot on each side forming a base. On top the wall was finished with projecting flat stones which gave it the appearance of a cornice.

On the inner side of this were small niches at distances apart which I should think were for putting lights in. The length of the wall was 150 feet by 50 feet wide. The height was 8 feet from the base and four feet thick. In the end of this enclosure nearest the church was a round enclosure about 36 feet in circumference built of the material and in the same manner as the wall.¹⁰

Numerous dilapidated buildings connected with and surrounded the whole church. They, too, were constructed of "gravel."

The whole church was also built of gravel and retained its whiteness to a remarkable degree. The Front was Gothic style and displayed considerable taste and skill. The bellfry was built of large burnt brick. Four square in each side was an aperture for the bells, three of which were still hanging. one had fallen down. Each had a different sound.¹¹

On the same day, Lorenzo D. Aldrich's party moved along the Santa Cruz Valley. In the middle of the day his group "passed two deserted villages (Tumacacori and Tubac), some fine peach trees, and melon vines. . . ."¹²

Silas M. Shinn, who reminisced about his journey to California some sixty years later, recalled that he passed down the Santa Cruz Valley "by way of that celebrated old Spanish Mission, eight or ten miles south of Tucson. But there were no people living in the place about the old mission building. The Indians had run them all out of that part of the country. We went into the old Mission church and amused ourselves ringing the bells which were left there."¹³ Shinn's memory obviously was faulty, for the mission just south of Tucson was not abandoned. He undoubtedly described Tumacacori.

10. Daird Brainard, "Journal," October 13, 1849, Bancroft Library, Berkeley, California.

11. *Ibid.*

12. Lorenzo D. Aldrich, *A Journal of the Overland Route to California and the Gold Mines* (Lansingburgh, N.Y.: Alexr. Kirkpatrick, Printer, 1851), pp. 29-30.

13. Silas M. Shinn, *The Trail of a Pioneer* (Auburn, Calif.: Press of Placer County Republican, no date), pp. 22-23.

On December 12, 1849, Benjamin Hayes "passed what appeared to be a church. Several went over to it, nearly a mile off. . . . Near the church there is a long trail of ashes winding over the valley in a very direct course along the road, as if the fence of an extensive enclosure had been burnt."¹⁴ Although he gave no name to the mission, he undoubtedly saw Guevavi. Further along the trail Hayes encountered Tumacacori. In the garden he found about fifty peach trees, whose seeds covered the ground. The church walls still stood, he wrote, but without a roof.¹⁵ Hayes was the only traveler to write of a roofless church at Tumacacori. His error probably developed because he waited until he passed both Tumacacori and Tubac before making a diary entry. In Tubac the church had no roof.¹⁶ Had there been no roof on the Tumacacori mission, one of the individuals who wrote a lengthy description would surely have noted it. Additionally, Professor Thomas Davis, superintendent of the Aztec Syndicate Mines, remembered when he passed the mission in 1849 that the roof was nearly intact.¹⁷

Hayes's remaining description of Tumacacori was consistent with the others. He thought the structure was built of burnt brick. Its interior walls, he wrote, were coated with cement on which paintings appeared. A dome over the altar shone white. In front the "portico" had two tiers of columns. He also found four bells, three of which still hung in the belfry.¹⁸

None of the "Forty-niners" found the beauty of the Santa Cruz Valley alluring enough to hold them. The valley remained deserted after the last California gold seekers' wagon train passed through. Other than to carve their initials in the walls, these travelers apparently did not do any major damage to the mission.

After the "Forty-niners" passed, the Santa Cruz Valley remained deserted through the first part of 1852. Apaches wandered the area and prevented the return of settlers. Only Tucson to the north of Tumacacori and Santa Cruz to the south were inhabited. Before the Santa Cruz Valley could be reoccupied protection had to be provided from Apache raids.¹⁹

14. Benjamin Hayes, "Diary of Judge Benjamin Hayes' Journey Overland from Socorro to Warner's Ranch from October 31, 1849 to January 14, 1850," December 12, 1849, Bancroft Library.

15. *Ibid.*; Owen C. Coy, *The Great Trek* (San Francisco: Powell Publishing Co., 1931), p. 247.

16. Watson, *The Santa Fe Trail*, p. 142.

17. Frank Pinkley, *Tumacacori National Monument*, (no date), p. 7; Richard J. Hinton, *The Hand-Book to Arizona: Its Resources, History, Towns, Mines, Ruins and Scenery* (New York: American News Co., 1878), p. 192.

18. Hayes, "Diary," December 12, 1849; Coy, *Great Trek*, p. 247.

19. John R. Bartlett, *Charter and By-Laws of the Arizona Land and Mining Company, Incorporated By the State of Rhode Island, June 1859: With a Statement giving the Particulars of the Estate of the Company, and of the Mineral Regions in the Territory of Arizona* (Providence, R.I.: Knowles, Anthony and Co., 1859), p. 23.

By 1852 the Mexican and Sonoran state governments united in their search for a solution to the Apache problem. Their answer was to establish a series of military colonies on the northern Sonora frontier. Few Mexican citizens, however, wished to populate these colonies as soldier-farmers. As a result the Mexican and Sonoran governments encouraged foreign settlers. This solution attracted several groups of Frenchmen. One body of Frenchmen, accompanied by some Germans, had been unsuccessful California gold seekers. These French, however, desired to be more than Apache targets. Their leader, Count Gaston Raouix de Raousset-Boulbon, hoped to capture the Sonoran capital and become governor of an independent area. Three uprisings ended in defeat. His captured army was taken to the interior of Sonora and released.²⁰ Several of these prospective French and German settlers made their way into the Santa Cruz Valley, some locating at Tumacacori and others at Calabasas.

In attending to the Apache problem, the Mexican government sent a company of soldiers to reoccupy Tubac in 1852. This action encouraged the settlers who had fled during the Apache raids of the 1840s, to return.²¹

Manuel Gandara, governor of Sonora, took advantage of the troop protection to operate his Tumacacori-Calabasas land.²² On a half-interest basis, Gandara made an agreement on December 9, 1852, with three Germans and a Frenchman--Federico Hulsemann, Luis Chambon, Carlos Handhausen, and Clemente Payeken--to manage that property. They located their headquarters at Calabasas. Gandara furnished 5,000 sheep and 1,000 goats, as well as some cattle, horses, oxen, and mules, to work the ranch.²³ They converted the old church into a storehouse and constructed living quarters for both themselves and their Mexican employees. These men employed twenty-two Mexicans to herd their sheep. In addition, the four built a woolen factory in which eighteen people worked.²⁴

Several groups of travelers met the Calabasas inhabitants in the early 1850s. Andrew B. Gray's railroad survey party encountered Hulsemann at

20. James H. McClintock, *Arizona, Prehistory, Aboriginal, Pioneer, Modern: The Nations's Youngest Commonwealth within a Land of Ancient Culture*, 3 vols. (Chicago: The S. J. Clarke Publishing Co., 1916), 1:124-25; Rufus Kay Wyllys, *The French in Sonora, 1850-1854: The Story of French Adventures from California into Mexico* (Berkeley: University of California Press, 1932), pp. 32-40.

21. Doris W. Bents, "The History of Tubac, 1752-1948," (Masters Thesis, University of Arizona, 1949), p. 85; Jane Spooner, *Tubac, Town of Nine Lives* (Tucson: Paragon Press, 1962), p. 13.

22. Gandara's brother-in-law had purchased the land for Gandara in 1844. Jay J. Waggoner, *Early Arizona: Prehistory to Civil War* (Tucson: The University of Arizona Press, 1970), p. 219.

23. Old Records of Pima County, Arizona, Book No. A, pp. 207-8, Pima County Court House, Tucson, Arizona; *Sacramento Union*, November 10, 1855.

24. Odie B. Faulk, *Arizona A Short History* (Norman: University of Oklahoma Press, 1970), pp. 55, 157.

Calabasas in April 1853. Peter R. Brady, a member of the survey party, wrote there were about 6,000 sheep at the ranch.²⁵ Charles Schuchard, an artist on the survey, sketched the nearby Tumacacori mission (Figure 2). Julius Fröbel, a German, arrived at Calabasas in June 1854. He wrote that three Germans and a Frenchman had settled there. These four inhabitants told Fröbel that they owned Tumacacori mission and all its lands.²⁶ They evidently allowed squatters to farm portions of their property. Two Germans named Fritz and Henry lived at Tumacacori where they farmed the mission land.²⁷

In 1853 the United States government began negotiations to acquire a portion of Sonora south of the Gila River. By the end of June 1854 the United States Senate ratified the treaty by which the Gadsden Purchase area became American territory as part of Doña Ana County, New Mexico. After June the Mexican garrison at Tubac withdrew, followed by many of the Mexican inhabitants.²⁸ Apaches again held sway in the Santa Cruz Valley.

Despite Indian raids, in which one German was killed, Hulsemann remained at Calabasas for over a year. Finally, by the end of 1855, the Apaches forced him to abandon the land. He moved his livestock to Imuriz, Sonora, where local authorities confiscated them.²⁹ Governor Manuel Gandara failed to protect Hulsemann's property, for he had become entangled in a Sonoran civil war which temporarily cost him his authority.

The Germans who squatted at Tumacacori mission remained after the region became American property. A Sacramento *Union* article reported their presence in late 1855. The newspaper stated these men cultivated maize, wheat, and fruit

25. Peter R. Brady, "The Reminiscences of Peter R. Brady of the A. B. Gray Railroad Survey, 1853-1854," in *Survey of a Route on the 32nd Parallel for the Texas Western Railroad, 1854: The A. B. Gray Report*, ed. by L. R. Bailey (Los Angeles: Westernlore Press, 1963), p. 211.

26. Julius Fröbel, *Aus America: Erfahrungen, Reisen und Studien*, 2 vols. (Leipzig: J. J. Weber, 1858), 2:433-34. Fröbel said Hulsemann had fled Germany in 1832 after a liberal plot to seize Frankfurt, in which he was involved, failed. Hulsemann had come to Sonora from California. He could have been attracted there with the French by the Mexican frontier settlement program.

27. Philip Contzen to Donald Page, August 10, 1936, Donald Page Papers, Bancroft Library, Berkeley, California. Contzen told Page that his father had met the two Germans when he passed through the area with the William Emory boundary survey party in 1855.

28. Bents, "The History of Tubac," p. 87.

29. *Ibid.*, p. 88; Clinton E. Brooks and Frank D. Reeves, eds., "James A. Bennett: A Dragoon in New Mexico, 1850-1856," *New Mexico Historical Review* 22 (April 1947):164.

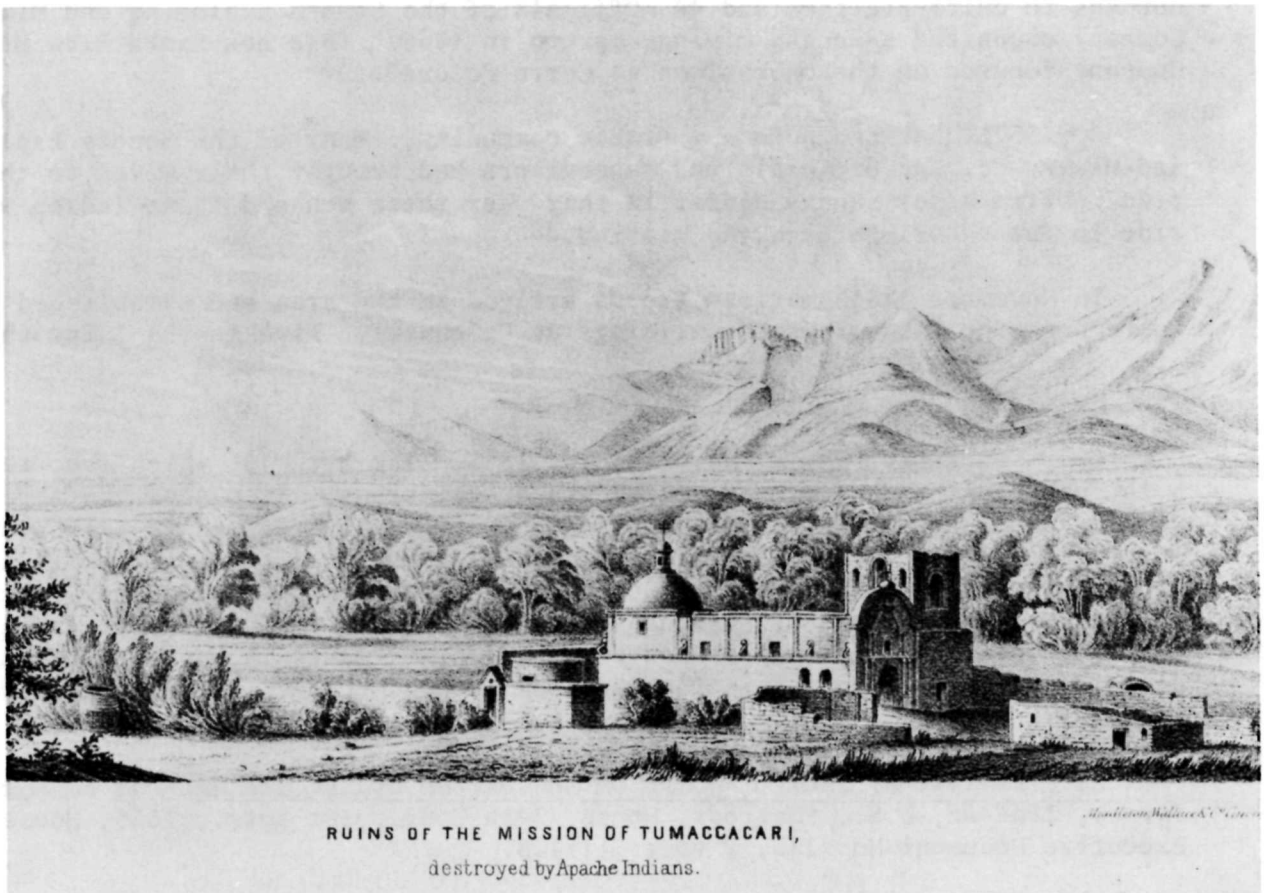


Figure 2

trees.³⁰ Lieutenant N. Michler, a member of the Gadsden Purchase boundary survey party, also found the Germans living at the mission when he passed through the area in 1855. Michler described the mission as a "fine structure."³¹ The Germans were soon joined by political exiles from Sonora who had fled the civil war there. They resided within the mission.³² Tumacacori evidently became untenable some time in 1856, for no mention was made of Germans or political exiles there after that time.

Americans, attracted to both mining and agriculture, came to the Santa Cruz Valley in late August 1856. Charles Poston, as general manager, established the field headquarters of the Sonora Exploring and Mining Company in deserted Tubac. He brought Americans and German immigrants from Texas with him. Poston opened mines to the east of Tubac in the Santa Rita Mountains and to the west at Cerro Colorado. In addition he fenced some of the area fields and employed one of his Germans to cultivate the land.³³ Officials of the Sonora Exploring and Mining Company organized a second mining concern in 1858. This new Santa Rita Mining Company focused on the operations at Cerro Colorado.³⁴

By 1857 Tubac had become a stable community. Many of the Sonora Exploring and Mining Company officials and supervisors had brought their wives to the town. Often after Sunday dinner in that year these men and their ladies would ride to Tumacacori to view the mission.³⁵

In November 1856 American troops arrived in the area and established Camp Moore near the Gandara ranch buildings at Calabasas. Five months later the

30. *Sacramento Union*, November 10, 1855. The article, which reported on both Tumacacori and Calabasas, mixed its descriptions. It placed the three Germans and a Frenchman at Tumacacori when they really resided at Calabasas. The Germans it reported at Calabasas were at Tumacacori. In addition it stated the Tumacacori residents used the old dilapidated mission as a granary. In reality the inhabitants of Calabasas used the mission there to store grain. Only one portion of the report was accurate. This part, in contravention to the dilapidated description in another section, stated that the Tumacacori mission walls were white.

31. William H. Emory, *Report on the United States and Mexican Boundary Survey, 1854-55*, U.S., Congress, House, 34th Cong., 1st sess., 1856, House Executive Document No. 135, 2 vols., 1:118.

32. Sylvester Mowery, *Arizona and Sonora: The Geography, History and Resources of the Silver Region of North America* (New York: Harper and Bros., 1864), p. 26.

33. Faulk, *Arizona*, pp. 89-90; Charles O. Poston to Dr. Scales, December 1, 1856, *The Railroad Record and Journal*, Feb. 26, 1857. Bents, "The History of Tubac," p. 90; Spooner, *Tubac*, p. 13.

34. Richard Wormser, *Tubac* (The Tubac Historical Society, 1975), p. 23.

35. Bents, "The History of Tubac," p. 104.

soldiers moved to the northeast (about twenty-five miles east of Tubac) and constructed Fort Buchanan.³⁶ This protection from the Apaches brought many American farmers to the Santa Cruz Valley. By 1859 nearly all of the arable land along the Santa Cruz River had been settled.³⁷

As more Americans settled the Santa Cruz Valley, relations with the local Mexicans deteriorated. Greenburg Byrd, who purchased the land adjacent to Tumacacori, was murdered by his Mexican laborers.³⁸ James Caruthers, who evidently bought the Byrd property, had a fight with his Mexican neighbors who lived at Tumacacori. In the dispute they killed Caruthers's partner.³⁹ John Wrightson, whose brother William was an official of the Santa Rita Mining Company, was murdered August 14, 1859, by Mexicans who were holding a religious festival at Tumacacori.⁴⁰ By October 1859 *The Weekly Arizonian* warned all Anglo travelers to regard Mexicans as enemies.⁴¹ Poor relations were not wholly provoked by Mexicans, for many were maltreated by Anglos.

In March 1859 *The Weekly Arizonian* reported that the Santa Rita Mining Company "purchased the old ranch and mission building of Tomacacori [*sic*] and as soon as the title is perfected, will make expensive repairs."⁴² These improvements evidently did not include the mission. In 1860 William Wrightson noted that a fence had almost been completed around some forty acres of Tumacacori farm land. Irrigation ditches had been constructed to this field and it was under cultivation. In addition "two or three" of the Indian houses on the south front of the church had been repaired for the Mexican *peons* who worked at the farm. Despite the expense involved, Wrightson hoped the company would soon derive a profit from the endeavor.⁴³

36. Spooner, *Tubac*, p. 15; Bernard L. Fontana, "Calabazas of the Rio Rico," *The Smoke Signal*, Fall, 1971, p. 80; James E. Serven, "The Military Posts on Sonoita Creek: A Review of the Brief But Important Roles of Fort Buchanan 1857-1861 and Camp Crittenden 1868-1873," *The Smoke Signal*, Fall, 1965, p. 27.

37. *Weekly Alta California* (San Francisco), June 25, 1859.

38. *The Weekly Arizonian* (Tubac), May 12, 1859.

39. *Ibid.*, June 30, 1859.

40. Bents, "The History of Tubac," p. 132.

41. *The Weekly Arizonian* (Tucson), October 6, 1859.

42. *The Weekly Arizonian* (Tubac), March 10, 1859. Although the article did not report from whom the mining company purchased the mission and its lands, it probably acquired it from Manual Gandara.

43. William Wrightson, "Second Annual Report, Santa Rita Mining Company," March 19, 1860, pp. 14-15, Special Collections, University of Arizona Library, Tucson, Arizona.

Wrightson also included a description of the mission in his report. The church was constructed of adobe which was plastered with cement and capped with burnt brick. It had a Moorish style facade. A tower was located on the south-east corner which had a top of burnt brick. As he continued in his depiction, Wrightson gave the first accurate account of the roof style and its condition.

The roof of the church was flat and covered with cement and tiles. The timbers have now fallen and decayed. The chancel was surmounted with a dome, which is still in good preservation. Adjacent to the church in the form of a hollow square were the residences of the priests, containing spacious and airy rooms, with every evidence of comfort and refinement, while surrounding those in the interior was an arched colonade, forming a shady walk around the whole enclosure. To the east of this square of sumptuous residences was an oblong of building, where the metallurgical operations were carried on. Here are still the remains of furnaces and quantities of slag, attesting the purposes for which this was formerly used; and further still to the east was the garden, enclosing about five acres, and surrounded by a cahone (adobe) wall. The acquia passes through this, and here is the remains of a washing vat and bathing place. There are also fruit trees and vines still growing; while in the rear of the church is the campus santi, a burial ground surrounded by a strong adobe wall well covered with cement, and forming even now the best enclosure in Arizona. To the south of the mission building, and fronting the church, was laid out a large square or plaza, which was surrounded by peon houses, thus forming a respectable village.⁴⁴

Since Wrightson felt the cemetery wall formed one of "the best enclosures in Arizona," the company probably used it as a corral. When J. Ross Browne visited the mission in 1864, he mistook the cemetery for a corral.⁴⁵

The 1860 census listed forty-eight persons living between Tubac and Calabasas. Of the seven listed as farmers, six were Anglo. Most of the enumerated Mexican males were field laborers. James Caruthers of Virginia owned the property just north of the Tumacacori land. It was valued at \$2,000. Joaquin Gonzales, the only Mexican owning property, lived near the mission land on the south.⁴⁶

44. *Ibid.*

45. J. Ross Browne, *Adventures in Apache Country: A tour through Arizona and Sonora, with notes on the Silver Mines of Nevada* (New York: Harper and Bros., 1871), p. 150.

46. "Eighth Census of the United States, 1860," Arizona portion of New Mexico, Records of the Bureau of the Census, Record Group 29, National Archives, Washington, D.C. As a comparison for the size of Caruthers's property, the large Otero family ranch north of Tubac had a value of \$2,500.

In 1861 events elsewhere in the United States were felt in the Santa Cruz Valley. The Civil War, which began in that year, resulted in the withdrawal of the American troops from Fort Buchanan. With the departure of these soldiers in July, the Apaches swept into the valley and attacked Tubac. Unable to overrun the town, they retreated.⁴⁷ Unsuccessful at Tubac, the Apaches turned on the ranchers and farmers of the valley. The population fled in panic. Even the people of Tubac abandoned the town in early August.⁴⁸ Before the inhabitants had departed the village, a force of seventy-five Mexicans arrived to plunder. Finding Tubac too well fortified, however, they returned to Sonora, looting Tumacacori on the way.⁴⁹ Most never returned. Abandoned, the Santa Cruz Valley awaited a new group of future settlers.

In May 1862 the First Cavalry of the California Volunteers arrived in Tucson to replace a retreating Confederate force which had held the town for a time. Part of the Volunteers moved to Cerro Colorado. Here they sought to prevent Confederate sympathizers from occupying the abandoned Santa Rita Mining Company's mine.⁵⁰ Manuel Gandara still circulated in the area. In December 1862 he contracted with the Volunteers to supply the Tucson garrison with Mexican cattle.⁵¹

In June 1864 California Volunteers moved to Tubac. From Camp Tubac the commander, Major James Gorman, ordered a detachment of twenty men to Calabasas. Men from the Tubac garrison staffed an outpost there until the entire group relocated near Calabasas in August 1865 and established Fort Mason.⁵²

Evidently the California Volunteers did not provide much protection from the Apaches, for when J. Ross Browne traveled through the Santa Cruz Valley in 1864 he found it deserted. As he passed Tumacacori mission he paused to sketch the structure (Figure 3). Taking artistic liberties, he included nonexistent buildings to the west of the church. On the lower south side of the bell tower he added two pilasters and an entrance. He neglected to include some of the openings for the bells as well as several niches in the belfry. Browne

47. Browne, *Adventures in Apache Country*, p. 150.

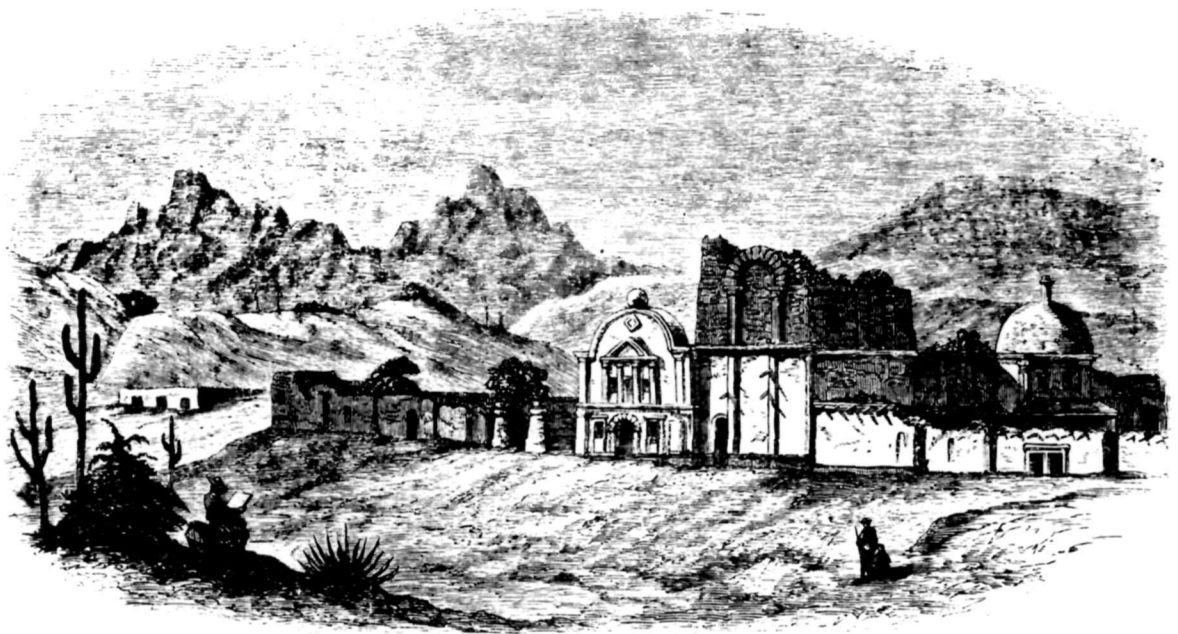
48. *Sacramento Union*, September 2, 1861.

49. Browne, *Adventures in Apache Country*, p. 150.

50. Edward E. Ayer, "Reminiscences of the Far West and Other Trips, 1861-1918," no date, pp. 27-31, Bancroft Library.

51. Capt. J. H. Witlock to Lt. James H. Poole, February 20, 1863, Letters sent from Tucson, Arizona, 1862-63, Part I, Entry 3675, Records of the United States Army Continental Commands, 1821-1920, Record Group 393, National Archives.

52. "Special Orders," Major James Gorman to Lt. A. W. Norton, June 25, 1864, Special Orders and Post Orders for Tubac, Arizona, Records of the United States Army Continental Commands, 1821-1920, Record Group 393, National Archives; Fontana, "Calabazas of the Rio Rico," pp. 84-85.



MISSION OF SAN JOSE DE TUMACACORI.

Figure 3

noted that the mission was in fair shape but not as well preserved as San Xavier. "The dome, bell towers, and adjacent outhouses are considerably defaced . . ." by time, Americans, or Mexicans who looted the mission in 1861. He found "a strong adobe corral adjoining the back part of the main edifice, with a massive gate-way. . . ." This area he described was obviously the cemetery. The massive gateway was probably the cemetery wall area between the sacristy and the granary which had been destroyed. Browne concluded, "Broken fences, ruined outhouses, bake-houses, corrals, etc., afford ample evidence that the old Jesuits were not deficient in industry."⁵³ Although Browne wrote of "bell towers" it was undoubtedly a slip of the pen, because his drawing showed only one tower.

People began to return to the Santa Cruz Valley in the summer of 1865. Tubac was again populated in that year. However, settlers led a precarious existence in the latter half of the 1860s and the first part of the 1870s. Sufficient soldiers were not present to provide adequate protection from Apaches. Arizona's first territorial governor obtained a force of Mexican-American troops to regarrison Tubac after August 1865. They protected the town until about 1868 when they were withdrawn.⁵⁴ Fort Mason, named Camp McKee on September 6, 1866, was abandoned on October 1, 1866. Soldiers from this post relocated at a new site, Camp Cameron, on the latter date. This post was situated about fifteen miles northeast of Tubac at the foot of the Santa Rita Mountains. It, in turn, was abandoned on March 7, 1867. For a short time until their withdrawal, the Mexican-American troops at Tubac served (with a small contingency of Papago and tame Apaches at Calabasas) as the only force in the area. On February 18, 1868, the army established Camp Crittenden near the site of old Fort Buchanan. This force then provided the sole protection, but it proved inadequate.⁵⁵ In early 1869 *The Weekly Arizonian* described the scene when it stated, "The Santa Cruz valley is in a great part lying waste as it is situated in a portion of Arizona which may justly be called the home of the Apache."⁵⁶

Charles Poston returned to Arizona Territory in 1864. As head of the Arizona Mining Corporation, a company organized from the old Sonora Exploring and Mining Company and Santa Rita Mining Company, he sought to reopen the mines. Unable to receive ample protection, he gave up about 1867 and sold his stock in the company. The Arizona Mining Corporation continued Poston's efforts, but also failed. In 1871 it gave the property back to Poston who made a final attempt to work the mines. While in London in the early 1870s, Poston sought British capital for his operation. Although he succeeded in forming several new

53. Browne, *Adventures in Apache Country*, pp. 152, 155.

54. Wormser, *Tubac*, p. 36.

55. Serven, "The Military Posts on Sonoita Creek," pp. 40, 44; Fontana, "Calabasas of the Rio Rico," p. 85.

56. *The Weekly Arizonian* (Tucson), February 21, 1869.

companies, these also failed.⁵⁷ After this last ill-fated effort to open the mines, Poston no longer claimed the property, which included the immediate Tumacacori land.

Indian raids also proved too troublesome for the people of Tubac. In 1871 they abandoned the town, this time for a five-year period. During that time, the United States Army succeeded in confining the Apaches to an area east of the Santa Cruz Valley. This permitted the population, except for several farmers who had defied the raids, to return.⁵⁸ After 1876 the valley inhabitants lived in peace.

Some property in the vicinity of Tumacacori opened briefly for homestead entry in 1878. Since it fell within Spanish and Mexican land grant claims, however, much of the land was soon suspended from entry.⁵⁹ Before the area closed from entry two farmers, Joseph King and Henry William Lowe, obtained homesteads adjacent to Tumacacori. Both men evidently had squatted on their land for several years before 1878. Theodore F. White, who surveyed the land in early 1877 prior to homesteading, listed the location of King's and Lowe's homes in his field notes.⁶⁰ King had come to the Santa Cruz Valley as a prospector in 1865. He lived for a time in the sacristy of Tumacacori mission and used the corridor to the east as a kitchen.⁶¹ King evidently decided farming offered a greater return than prospecting, for he settled directly east of the mission where he constructed a home on the east bank of the Santa Cruz River (Figure 4). In 1870 the census listed him as a farmer and gave his place of birth as the Azore Islands.⁶² The brief period of entry for homesteading afforded King the opportunity to acquire the land on which he lived. The 1879 Pima County assessment roll, which called his farm the "Tumacacori Ranch," valued King's land at

57. Wormser, *Tubac*, p. 36; B. Sacks, "Charles Debrille Poston: Prince of Arizona Pioneers," *The Smoke Signal*, Spring, 1963, p. 10.

58. Wormser, *Tubac*, p. 38.

59. *Arizona Weekly Star* (Tucson), March 21, 1878. The main land grant claim for the area in 1878 came from the Calabasas Land and Mining Company. It had been formed in 1878 by two San Francisco land speculators, C. P. Sykes and John Currey, to sell parcels of their newly acquired Tumacacori and Calabasas land grant. Their land holding included Tumacacori mission.

60. Theodore F. White, "Field Notes of the Survey of the Subdivision Lines of Township 21 S., Range 13 E., Gila and Salt River Base Meridian," Book 965, January 4, 5, 1877, Bureau of Land Management files, Phoenix, Arizona.

61. Interview of Joseph King, Jr., by Sallie Brewer, Fall 1944, typescript in the Tumacacori National Monument files.

62. "Ninth Census of the United States, 1870," Pima County, Arizona Territory, Records of the Bureau of the Census, Record Group 29, National Archives.

A PORTION OF TOWNSHIP 21 SOUTH, RANGE 13 EAST, SHOWING
THE LOCATION OF JOSEPH KING AND HENRY LOWE'S HOMES

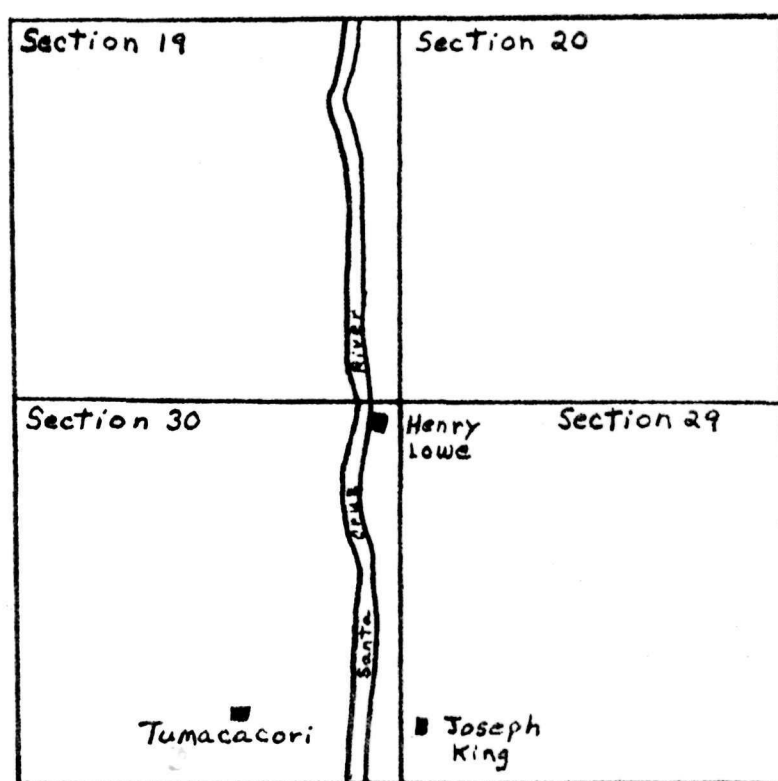


FIGURE 4

\$300.⁶³ In 1880 the census again enumerated King and the Official Pima County Map for 1893 once more confirmed his residence in the valley.⁶⁴

Henry William Lowe came to Tubac just prior to 1870. The census for that year listed him as a farm laborer and gave his place of birth as Hanover, Germany.⁶⁵ Within a short time he moved to the quarter section just north of Tumacacori and constructed his home. He supposedly used the fallen Tumacacori mission nave roof timbers for the roof of his house.⁶⁶ In 1879 the Pima County assessment roll placed the same value on his land as on the Joseph King farm.⁶⁷ Lowe lived at the farm until his death in 1893. His son William then occupied the place for another ten years.⁶⁸

Except for occasional temporary inhabitants like King and Lowe, Tumacacori mission stood vacant after the area was abandoned in 1861. Apache raids in the Santa Cruz Valley discouraged treasure hunters, squatters, or other visitors. Several members of the California Volunteers, however, left evidence of their visit about 1865 when they scratched their names on a wall. The Tumacacori land fell within the area opened for homestead in 1878, but no one claimed it in the short period before it closed to entry. Instead, the land remained in a nebulous state awaiting the settlement of several land grant claims. Charles Poston, who had an interest in preserving historic structures, considered it an act of vandalism to allow a homestead entry on the Tumacacori land.⁶⁹

63. Assessment Roll for the County of Pima, 1879, Tubac and Upper Santa Cruz, Arizona State Archives, Phoenix, Arizona. These assessment rolls date back only to 1879.

64. "Tenth Census of the United States, 1880," Pima County, Arizona Territory, Records of the Bureau of the Census, Record Group 29, National Archives; *Official Pima County Map, 1893*, drawn by George Roskrige.

65. "Ninth Census of the United States, 1870," Pima County, Arizona Territory, Records of the Bureau of the Census, Record Group 29, National Archives.

66. A. S. Noon to Frank Pinkley, May 10, 1919, "Archaeological and Stabilization Overview of Tumacacori National Monument," typescript in Keith Anderson's office files, Western Archaeology Center, Tucson, Arizona, p. 6.

67. Assessment Roll for the County of Pima, 1879, Tubac and Upper Santa Cruz.

68. Bents, "The History of Tubac," pp. 201, 209.

69. *Arizona Weekly Star* (Tucson), March 21, 1878. Poston published a letter to John Weston, the United States Surveyor General, in the above issue of the *Arizona Weekly Star*. He wrote that he wished to draw attention to township twenty-two south, range thirteen east, sections five and nine, for on this land the mission of San Jose de Tumacacori was located. Poston complained that it (continued)

By 1876 descriptions of the mission began to appear again. In that year Samuel Cozzens wrote that the church was not much more than ruins because of American vandalism and Apache raids.⁷⁰ While surveying the area in 1877, Theodore F. White stated the mission was in ruins.⁷¹ In the fall of 1877 E. Conklin visited the church. He described it in total ruins, but the picture he included in his book did not support such a depiction (Figure 5).⁷² Father John Salpointe wrote in a March 1878 report that Tumacacori was abandoned as far as liturgical use was concerned.⁷³ He evidently found someone squatting at the mission when he visited it.

In 1878 Richard J. Hinton, a reporter for the San Francisco *Evening Post*, gave a very unusual description of Tumacacori. He wrote,

The main structure is about one hundred feet long by forty or fifty wide. The form was that of a plain Greek cross with a basilica. The cross emblem . . . still crowns the later. . . . Two towers remain in fair preservation. On the west side an unroofed chapel remains otherwise almost in tact, while on the other the sacristy is quite dilapidated. It has evidently been used both as a stable and granary; and the interior of the nave shows the vandal hand of prospectors and travelers. . . . To the west of the church is a large enclosure, the walls of which are readily traced. It is evident that this was the work yard of the mission, as there are the remains of arrastras, rude smelting vassos or furnaces, a few heaps of debris, etc., to

69. (Continued) had been opened for homestead entry and a James Peters, "a Morman," had a claim on it. Poston felt the homestead entry should be withdrawn. He was obviously confused, for Tumacacori was actually located on section thirty of township twenty-one south, range thirteen east. On April 4 James Peters answered Poston in a letter to the editor of the *Arizona Weekly Star*. He wrote that he was not a Mormon and his homestead was located six miles from the mission.

70. Samuel W. Cozzens, *The Marvellous Country or, Three Years in Arizona and New Mexico* (Boston: Lee and Shepard, 1876), p. 165.

71. White, "Field notes of the Survey of the Subdivision Lines of Township 21 S., Range 13 E., Gila and Salt River Base and Meridian," January 4, 1877, Book 965.

72. E. Conklin, *Picturesque Arizona: Being the Result of Travels and Observations in Arizona During the Fall and Winter of 1877* (N.Y.: The Mining Record Printing Establishment, 1878), p. 303.

73. Fr. Francis J. Weber, ed., "Arizona Catholicism in 1878: A Report by John Baptiste Salpointe," *Journal of Arizona History* 9 (Autumn 1968):134.

Figure 5



OLD MISSION RUINS OF TUMACACORI.

show that the good Jesuits were actively engaged in the mining and working of ores.⁷⁴

In the section quoted, Hinton must have mixed his notes with those for San Xavier mission. Tumacacori did not have a cruciform shape or two towers as San Xavier did. It had no chapel on the west and it is questionable whether there ever was a work area on that side of the church. No evidence of smelting activity can be found there. Although Hinton included the 1854 sketch (Figure 2) by Charles Schuchard of the A. B. Gray survey party in his book, he strangely did not use it as a reference when writing his description of the mission. The sketch clearly showed Tumacacori as a simple nave style church with one tower. In addition no chapel or work area was evident on the west side of the church in the Schuchard sketch.

Hinton's description undoubtedly served as the source for similar depictions. One appeared in a March 1879 article of the *San Francisco Evening Bulletin* and another in a book published in 1881 by Patrick Hamilton.⁷⁵ The latter work actually combined Hinton's and William Wrightson's accounts. Even the *New York Times* printed a story which described Tumacacori as a cruciform church. The article, which credited the Guawa brothers as the mission builders, stated,

While Tumacacori did not approach San Xavier in Architectural beauty and grandeur, the outer and communicating buildings were more extensive and agricultural and mineral expectations greater. Even at the present time the ruin is not so complete but that the passer-by may see a good deal to reward him. . . . The main building was 100 by 45 feet, and its shape was that of a Greek cross.

The mission area, the article continued, contained a garden in which had grown "oranges, limes, lemons, pomegranates, pears, figs, and gardens of vegetables and plants. The dome above the chancel is still in a fair state of preservation. But the timbers are all 'knocked whichway,' the tile roof is 'topsy-turvy' on the ground, the residences are gone to grass. . . ."⁷⁶

The economic basis for Tumacacori's existence became a preoccupation with many writers. Early diaries and reports of travelers described the agricultural opportunities around the mission. Forty-niners who passed the area noted the

74. Hinton, *The Hand-Book to Arizona: Its Resources, History, Towns, Mines, Ruins and Scenery* (New York: American News Co., 1881), p. 192.

75. *San Francisco Evening Bulletin*, March 19, 1879, reprinted in the *Arizona Sentinel* (Yuma), March 29, 1879; Patrick Hamilton, *The Resources of Arizona: Its Mineral, Farming, and Grazing Lands, Towns, and Mining Camps, Its Rivers, Mountains, Plains, and Mesas; with a Brief Summary of its Indian Tribes, Early History, Ancient Ruins, Climate, Etc., Etc.* (Prescott, Ariz.: Under Authority of the Legislature, 1881), p. 116.

76. *New York Times*, March 1, 1891.

good farm land which, but for the Apaches, would have been under cultivation. Lieutenant N. Michler of the William Emory boundary survey party wrote that Tumacacori "stood in the midst of rich fields."⁷⁷ Several years later Lieutenant Sylvester Mowry reported "Tumacacozí [*sic*], a few miles south of Tuboc [*sic*], was the most extensive mission in this part of the country. The extensive buildings, irrigation canals, and broad cultivated domain attest its advantages."⁷⁸ After the arrival of the Sonora Exploring and Mining Company at Tubac, common opinion changed. The discovery of Spanish mines in the area led many to decide that the Jesuits, whom they thought to have been the only religious order to occupy the mission, had amassed a considerable fortune from mining.⁷⁹ Soon this idea became tradition. William Wrightson wrote in his report of the Santa Rita Mining Company that custom held that the priests had worked rich mines in the vicinity of Tumacacori, but he had been unable to verify the assumption. East of the Convento area Wrightson did note the remains of furnaces and slag.⁸⁰

The legend of the Jesuit-operated Salero or salt cellar mine seemingly appeared in print for the first time in 1861. In a book written in that year John W. Barber and Henry Howe recounted how the "Bishop of Tumacacori" had complained of the hardships he had to endure at the mission. He did not even have a salt cellar. As a result a parishioner rode to a silver mine in the Santa Rita Mountains and fashioned one of silver for him.⁸¹ The absurdity of the story seemed to have escaped the authors, for the "Bishop" would not have led an onerous life with the wealth available from a silver mine. Also in 1861 the *Alta California* reported that one of the three mines operated by the Santa Rita Mining Company was the old Jesuit Salero mine.⁸² J. Ross Browne added to

77. Emory, *Report on the United States and Mexican Boundary Survey, 1854-55*, p. 118.

78. Sylvester Mowry, *Report of Lt. Sylvester Mowry, Describing the Territory of Arizona, or the "Gadsden Purchase," and the Tribes Inhabiting the Same*, Made to J. W. Denver, Commissioner of Indian Affairs, November 10, 1857, U.S., Congress, House, 35th Cong., 1st sess., 1858, House Executive Document No. 127, p. 585.

79. F. X. Aubry apparently was the first to write that Tumacacori had been established by the Jesuits as a mining mission. Others, however, did not found their opinion on his speculation, because his diary was not in general circulation. F. X. Aubry, "Diary of a Journey Through Arizona," 1853, Huntington Library, p. 2.

80. Wrightson, "Second Annual Report, Santa Rita Mining Company, March 19, 1860," p. 14.

81. John Warner Barber and Henry Howe, *Our Whole Country: or the Past and Present of the United States, Historical and Descriptive*, 2 vols. (Cincinnati, Ohio: Henry Howe Publisher, 1861), 2:1451.

82. *Alta California* (San Francisco), February 11, 1861.

the dissemination of the Jesuit mining story. In his book he wrote that this religious order worked silver mines near Tumacacori. He also recounted the salt cellar story.⁸³

Of all the descriptions prior to 1865 only William Wrightson mentioned smelters at Tumacacori. His account, however, was not available to the public. The authors whose works did circulate wrote only of Jesuit mines. Potential authors did not travel in the Santa Cruz Valley during the latter 1860s and early 1870s because of the hazards of Apache attacks. With the Apache danger reduced by 1876 travelers again began to enter the valley. E. Conklin, who passed through the area in 1877, was one of the first to begin writing of the mission again. He was also the first popular writer to describe the smelters at Tumacacori. Conklin obviously found many more smelters than Wrightson, for he stated in his book that "Broken remnants of the furnaces, crucibles, etc. etc., used in smelting, may yet be seen in and about the [Tumacacori] ruins."⁸⁴ Because the early works in general circulation mentioned only Jesuit mines, one can speculate that those treasure hunters who risked their lives to enter the area in the latter 1860s and early 1870s did not search for treasure at the mission, but searched for the old Jesuit mines. When they found minerals it would have invited an Apache attack to refine the ore at the place of discovery. Instead, they probably transported the ore to a more easily defended place for smelting. The remains of these smelters were undoubtedly what Conklin saw at Tumacacori and mistook for smelters operated by the priests.⁸⁵ As a result he inadvertently directed people's attention from Jesuit mines to treasure at the mission.

Richard J. Hinton's book, which appeared in 1878, repeated the Tumacacori smelter story. He wrote, "there are the remains of arrastras, rude smelting vassos [*sic*] or furnaces, a few heaps of debris, etc., to show that the good Jesuits were actively engaged in the mining and working of ores."⁸⁶ In 1881 Patrick Hamilton, at the request of the territorial legislature, produced a history of Arizona. This officially-sanctioned book undoubtedly gave greater credence to a treasure story. He wrote, "The remains of crude smelting works, and the slag from the same, go to show that the old Jesuits practiced the mining industry here [Tumacacori] long before a pound of bullion was produced in any

83. Browne, *Adventures in Apache Country*, p. 231.

84. Conklin, *Picturesque Arizona*, p. 304.

85. In 1970, dating of the retort, smelter, and vasos in the area south of the sacristy placed their date at 1860 plus or minus twenty-seven years. The smelting equipment that Wrightson noted east of the Convento probably dated from the mission period.

86. Hinton, *The Hand-Book to Arizona*, p. 192. Hinton's book probably received wide circulation. Several Arizona newspapers (*Arizona Sentinel* [Yuma], February 23, 1878, and *Arizona Weekly Star* [Tucson], March 21, 1878) carried advertisements for the book. These notices proclaimed Hinton's work to be the best yet published on Arizona history.

portion of the vast territory now known as the United States."⁸⁷ As a result of the sequence of these accounts, treasure hunters, who did considerable damage to Tumacacori over the years, probably did not come to the mission in any numbers until the 1880s. Had they known of the poverty in which the priests lived, these men would have realized the futility of their search.

Newspapers and articles to the present day have encouraged the idea of a Tumacacori treasure. As a result, even after Tumacacori became a national monument treasure hunters continued to dig in and about the mission.

Apparently area settlers utilized Tumacacori for non-religious purposes from mid-1861 to the 1880s. The Santa Rita Mining Company evidently transformed the cemetery into a corral about 1860. After the area was abandoned in mid-1861 it probably sheltered only occasional prospectors who looked for the "Jesuit mines." Some of these men undoubtedly camped in the sacristy where they built fires as attested by the soot on that room's ceiling. In September 1882 two travelers spent a night at the mission. They stayed in a room under the bell tower. "It was anything but comfortable, as the floor had been dug up by treasure seekers, and little room remained to spread our blankets."⁸⁸ By the 1880s the cemetery again served as a corral. Cattle from the Otero ranch were gathered in the cemetery for branding in a community roundup in 1884. The livestock entered through the hole in the east wall just north of the sacristy.⁸⁹ About this time the Enriquez family lived near Tumacacori and farmed the land close to the mission for some eight to ten years. Viviano Enriquez was born there in 1885.⁹⁰ In that same year Carmen Mendez located his home at Tumacacori near the corner of the present patio garden wall. His house burned some time later and he constructed a new one some distance from the mission. Mendez used several rooms east of the granary to store hay.⁹¹ He later homesteaded the quarter section of land on which Tumacacori is located.

Sporadic liturgical use of the mission revived in the 1880s. In the mid-1880s a priest invited Tom Bourgeois, who lived in Douglas, Arizona, to live at Tumacacori as a caretaker. Although he spent much of his time prospecting the area, he did help a priest perform an occasional wedding or baptism. In that period Bourgeois helped two Mexicans construct a building that was later used as

87. Hamilton, *The Resources of Arizona*, p. 116.

88. *Arizona Daily Star* (Tucson), September 24, 1882.

89. Interview of Joe E. Wise by Sallie Brewer, January 16, 1948, typescript in the Tumacacori National Monument files.

90. Interview of Viviano Enriquez by Sallie Brewer, September 6, 1945, typescript in the Tumacacori National Monument files.

91. Fred Dennett to The Forester, June 28, 1907, Tumacacori National Monument, Records of the Forest Service, Record Group 95 (58-A-130) 110128, Regional Archives and Record Center, Denver, Colorado; Interview of Juan B. Mendez by Betty Jackson, June 1947, typescript in Tumacacori National Monument files.

a storehouse when the mission became a national monument.⁹² Bourgeois was evidently replaced in the 1890s by Pedro Calistro who then served as a self-appointed caretaker. Calistro, an Opata Indian from the Cucurpe Valley in Sonora, converted the corridor east of the sacristy into living quarters. Neighbors helped him clean the church. Calistro filled a big hole where the main altar had been and Joseph King helped him to close another large hole in the center of the "descanso" (sacristy?). He tried, but failed, to make treasure hunters stop digging in the mission.⁹³ Each Easter Calistro conducted a Semana Santa or religious festival at the mission. These yearly celebrations continued until Calistro's death in 1929.⁹⁴ About 1905 Calistro moved from the mission to a house about a mile north of Tumacacori.⁹⁵ At some point, probably during Calistro's occupancy, two poor Mexican families lived in the granary. They used a short wall to partition that structure into two rooms, closed the central entrance, and opened their own doorway.

In December 1905 William P. Blake, a geologist, stopped at Tumacacori. He found it deserted. Blake wrote that, "It has some good arches, a castlelike tower and an arched dungeon-like room perhaps the Sacristy." The exterior plaster and mortar had "stoodwell." It was decorated by "small fragments of colored broken stone and red brick fragments."⁹⁶

In 1906 another poor Mexican family moved into the mission. Many years later Guillermo Montez told Sallie Brewer, a Park Service employee, that he was born in the "padre's quarters" in that year.⁹⁷ Coert DuBois, Forest Inspector

92. Interview of Tom Bourgeois by Earl Jackson, May 30, 1946, typescript in Tumacacori National Monument files; Interview of Pete Avila by Sallie Brewer, September 5, 1946, typescript in the Tumacacori National Monument files. The storehouse was razed about 1953.

93. Interview of Joseph King, Jr., by Sallie Brewer, Fall 1944; Interview of Charlie LaPlante by Sallie Brewer, September 9, 1945, typescript in the Tumacacori National Monument files.

94. Luis Gastellum, "Indian Holy Week at Tumacacori," *Southwestern Monuments Supplement* (August, 1935), pp. 136-39; Interview of Pete Avila by Sallie Brewer, September 5, 1946; "Reminiscences of Mrs. Francisco Escalante Cota," interview by Mrs. George Kitt, October 17, 1933, typescript in the Arizona Historical Society, Tucson, Arizona.

95. Interview of Charlie LaPlante by Sallie Brewer, September 9, 1945; Interview of Pete Avila by Sallie Brewer, September 5, 1946.

96. William P. Blake, "Field Note Book 636-W-291," December 29, 1905, typescript in Arizona Historical Society, Tucson, Arizona.

97. Interview of Guillermo Fimbres Montez by Sallie Brewer, February 21, 1947, typescript in Tumacacori National Monument files.

for the Forest Service, found the Montez family living there when he visited Tumacacori in February 1907.⁹⁸

William P. Blake returned to the mission in February 1907. On this occasion he noted the "choir arch had fallen in lately."⁹⁹ Tomas Alegria, son-in-law of Carmen Mendez, thought the choir arch had collapsed in 1901. He said a family living at the mission had hung a swing for their son from the arch, causing it to fall.¹⁰⁰ Since Blake did not note the fallen choir arch in his 1905 visit but did in 1907, it was probably the Montez family swing which caused the arch to fall some time in 1906.

Despite use as living quarters, the mission also functioned as a religious structure. Funerals were periodically conducted through 1941. Will C. Barnes, a Forest Ranger, found a funeral in progress when he inspected the mission in October 1907 (Figure 6).¹⁰¹ In mid-1930 custodian George Boundey reported a funeral at the mission which about 125 people attended.¹⁰² In July 1941 services for Tirso Trujillo, owner of the cantina across the road from the mission, were held in the nave.¹⁰³ The cemetery was also periodically used for burials. In 1916 Juanita Alegria, age nine months, was the last person buried in the cemetery.¹⁰⁴ For many years after the infant's death, the family brought flowers and lighted candles at the grave. Even an occasional wedding took place at the mission. In December 1919 a Mr. T. L. Farrell of Superior, Arizona, encountered a priest on Washington Camp Hill who said he was on his way to Tumacacori to perform the wedding of a Mexican couple from Santa Cruz, Sonora, on Christmas day.¹⁰⁵ In the 1920s Monsignor L. Duval, pastor of the Nogales church, held

98. Coert Dubois, "Historical Monuments," May 17, 1907, Records of the Forest Service, Record Group 95 (58-A-130) 110128, Denver Regional Archives and Record Center.

99. Blake, "Field Note Book 636-W-300," February 13, 1907.

100. *Southwestern Monuments Monthly Reports* (Tumacacori), July 1947, Western Archaeological Center, Tucson, Arizona.

101. Will C. Barnes, "Report," October 22, 1907, General Inspection Reports--Colorado, Records of the Forest Service, Record Group 95, Denver Regional Archives and Record Center.

102. *Southwestern Monuments Monthly Reports* (Tumacacori), July 16, 1930.

103. *Ibid.*, July 1941.

104. Superintendent's Monthly Report (Tumacacori), November 1959, Western Archaeological Center.

105. "Notes," (author unknown), October 29, 1931, Western Archaeological Center.

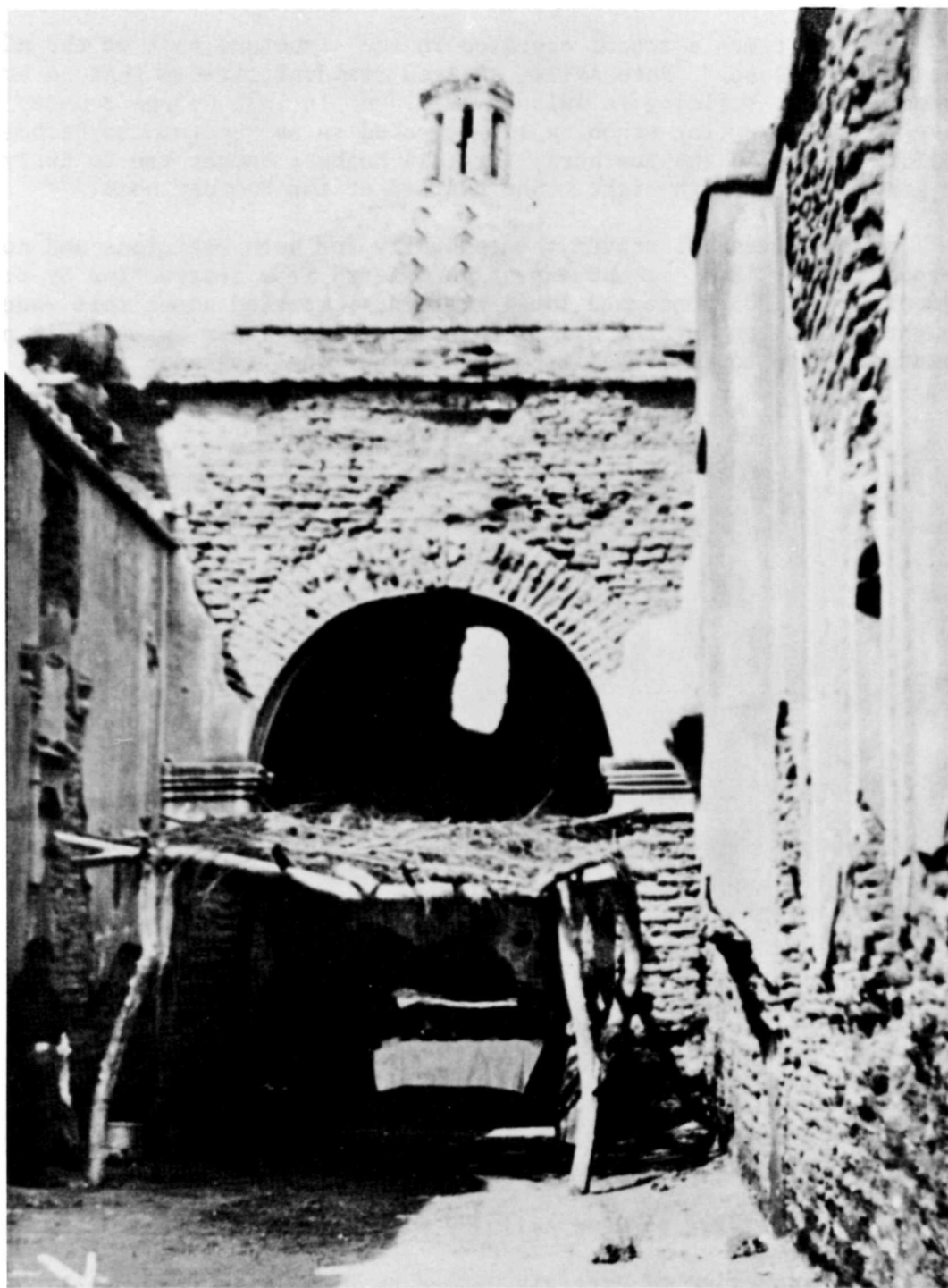


Figure 6

Taken by Forest Ranger Will C. Barnes October 1907.

classes and often said mass in the mission.¹⁰⁶ Mrs. Amalia Cordova, a Tucson resident, remembered hearing that church services were conducted at Tumacacori in the 1920s.¹⁰⁷

Several times a school operated in the structure east of the mission called the "school house." Pete Avila, an area resident, stated that he attended school in this building in 1915 or 1916.¹⁰⁸ In 1930 George Boundey formed a Seventh Day Adventist school which operated in one end of the "school house" building. One of the teachers, Virginia Hughes, taught ten to twelve children in grades one through eight. She boarded at the Boundey home.¹⁰⁹

While Tumacacori served the community for both religious and nonreligious purposes after 1848, it increasingly suffered from destruction by treasure hunters. By 1905 concerned local residents, worried about this vandalism, sought protection for the historical structure. Their interest in preserving Tumacacori led to its establishment as a national monument in 1908.

106. Interview of Aggie Gastellum by Sallie Brewer, August 4, 1948, Typescript in the Tumacacori National Monument files.

107. Interview of Mrs. Amalia Cordova by Berle Clemenson, February 21, 1976, (Gilbert Gonzales interpreter).

108. Interview of Pete Avila by Sallie Brewer, September 5, 1946.

109. Interview of Virginia Hughes by Dr. Elizabeth Brownell, March 17, 1972, typescript in Dr. Elizabeth Brownell's file, Tubac, Arizona. Virginia Hughes thought she taught for a two-year period in 1935-37. However, it was probably several years earlier, since Boundey had left Tumacacori by 1936.

CHAPTER II: TUMACACORI NATIONAL MONUMENT: A TROUBLED BEGINNING

By 1905 concerned Arizonans sought protection for Tumacacori from increasing vandalism and treasure hunters. The Arizona Historical Society contacted local Forest Service officials to enlist their support in obtaining federal government custody of the mission. This interest led Coert Dubois, a forest inspector, to visit the site in May 1907. He wrote to his superiors that the mission was "rapidly falling into ruins and suffering considerably from vandalism of visitors. Portions of the paintings in the old Chancel have been knocked off for souvenirs, and the whole of the inside of the nave is written over with the names of visitors." DuBois recommended that the government withdraw forty acres surrounding the church for a national monument if Baca Float No. 3 were invalid.¹

Baca Float No. 3 was the object of a land grant controversy dating to the nineteenth century. On January 16, 1821, the state legislature of Durango, Mexico, granted Louis Maria Baca a tract of 500,000 acres in present-day northeast New Mexico. Despite the protest of the Baca heirs, the Mexican government gave part of this land to the town of Las Vegas in March 1835. This area became American territory after the Mexican-American War. Since the treaty that ended that conflict preserved all legal Mexican land grants, the Baca heirs presented their claim to the United States Congress. Congress gave the heirs three years to select an equal quantity of vacant, nonmineral land in New Mexico Territory. Five 100,000-acre tracts were selected in 1863. One of these areas, No. 3, covered part of the Santa Cruz Valley. In April 1864 the United States Land Office approved the locations as vacant and nonmineral and ordered a survey. The survey of No. 3 was not completed, however, because Apaches killed William Wrightson and his survey party. In 1866 the Baca attorney, John S. Watts, claimed a mistake had been made on No. 3 and asked for a new location. The new selection overlapped only the northeast corner of the previous choice. However, it was not approved by the Land Office.²

In 1817 the Baca heirs sold the No. 3 claim to John S. Watts. During the 1870s Watts's heirs pressed the Land Office to approve the 1866 claim. The land commissioner, however, denied the request in 1877 because the three-year selection period had lapsed. In a confused situation, Charles Poston surfaced, claiming to be an assignee of the Baca heirs. He succeeded in getting a similar

1. Coert DuBois, "Historical Monuments."

2. Ray H. Mattison, "A History of the Land Titles of the Tumacacori Mission, 1807-1918," (no date), pp. 19-22, typescript in the Western Archaeological Center files, Tucson, Arizona; Donald D. Mawson and Robert J. Holden, "Tumacacori National Monument: Its Origin, Development, and Administration," (1970), p. 24, typescript in Tumacacori National Monument files.

request before the Forty-seventh and Forty-eighth Congresses. It was rejected in 1885 by the Senate Committee of Private Land Claims.³

In February 1885 John C. Robinson appeared and claimed Baca Float No. 3. He petitioned the Land Office to accept the 1866 selection. Robinson succeeded for a time because the acting land commissioner approved his request. The next year, however, a new land commissioner overturned the decision. Robinson unsuccessfully appealed the action to the Secretary of the Interior. Undeterred, in 1888 he asked the land commissioner to survey the 1866 claim. The commissioner directed the surveyor-general to hold hearings to determine the character of the land in 1866. Evidently Robinson realized the hearings would reveal the area as mineral land and therefore illegal since it covered the Santa Rita Mountains. He requested the proceedings be stopped.⁴

In 1899 more Baca claimants appeared and asked for a survey of the 1866 selection. The Secretary of the Interior ordered a hearing and survey of the area. Since the claimants refused to pay for the survey, the secretary proceeded to dispose of the land as public domain for homesteads.⁵ On February 7, 1899, Carmen Mendez applied for a homestead on the Tumacacori mission land. Despite disposal of the land for homesteads, the Baca Float controversy did not die and later almost had a devastating effect on Tumacacori National Monument.

In the meantime the head of the Forest Service acted on Coert DuBois's proposal to place the mission under government custody. On June 18, 1907, he wrote to the land commissioner, Fred Dennett, for his opinion on the feasibility of withdrawing the Tumacacori land from private ownership.⁶ In Dennett's judgment Baca Float No. 3 constituted no bar to the withdrawal of the land because the mission was not located on the 1866 claim. He noted that Carmen Mendez had made a homestead entry for the property. However, this situation need not prove a problem, he wrote, because Mendez had not made final proof on the entry within the statutory period. Dennett, therefore, felt the Forest Service could acquire the land by either cancelling the homestead entry or seeking a relinquishment from Mendez.⁷

On July 19, 1907, the head of the Forest Service directed a "survey of the land in the vicinity of what is known as the Tumacacori Mission with a view to

3. *Ibid.*

4. Mattison, "A History of the Land Titles of the Tumacacori Mission," pp. 19-22.

5. *Ibid.* Another claim, for the Tumacacori and Calabasas land grant, had been ruled invalid by the United States Supreme Court in 1898.

6. The Forester to the Land Commissioner, June 18, 1907, Records of the Forest Service, Record Group 95 (58-A-130) 110128, Denver Regional Archives and Record Center.

7. Fred Dennett to the Forester, June 28, 1907, *ibid.*

determining its exact location so that if possible it could be withdrawn and the ruin preserved."⁸ Since the survey had not been made by October 1907, Forest Ranger Will Barnes recommended "that Supervisor Willson be urged to make the survey as directed as soon as he can consistently with his other work."⁹ By February 1908 the survey had been accomplished. In a letter to the Secretary of the Interior, James Wilson, the Secretary of Agriculture, reported that Tumacacori had sufficient historic interest to warrant its protection as a national monument.¹⁰ Carmen Mendez was allowed to patent his homestead, and on June 30, 1908, he deeded ten acres, on which the mission was located, to the government. By Presidential proclamation of September 15, 1908, Tumacacori became a national monument.

After its creation as a national monument, the Forest Service administered Tumacacori. It attempted no improvements on the building, and forest rangers only sporadically visited there. By August 1913 R. T. Galloway, Acting Secretary of agriculture, wrote the Secretary of the Interior that "Forest officers of the Coronado National Forest have called attention to the fact that the Tumacacori Mission, . . . is suffering misuse and is in a very dilapidated condition." He thought it would require \$5,000 to prevent further deterioration of the structure. The Agriculture Department had neither the money for such a project nor could it afford a permanent caretaker. In lieu of such an undertaking, Galloway recommended that a stockproof fence be placed around the mission, but the Forest Service did not have the estimated \$100 to enclose about two acres of land. He asked the Secretary of the Interior to provide the \$100.¹¹ The Interior Department furnished the funds and on October 10, 1913, G. W. Helm, chief of the Los Angeles Land Office Field Division, told Robert Selkirk, forest supervisor in Tucson, to construct the fence.¹²

Meanwhile, the Baca Float No. 3 claimants turned to the Court of Appeals of the District of Columbia in an effort to validate their claim. The Court of Appeals decided in their favor, based on the 1863 selection and not on the 1866 choice. This decision led to a Supreme Court hearing where the matter was finally settled. On June 22, 1914, this body confirmed the rights of the Baca claimants--James E. Bouldin, Jennie N. Bouldin, Helen Lee Bouldin, and Weldon M. Bailey. A rehearing petition was denied on November 2, 1914. Since the Tumacacori land came within the 1863 selection, Carmen Mendez lost his homestead,

8. Will C. Barnes, "Report."

9. *Ibid.*

10. James Wilson to the Secretary of the Interior, February 27, 1908, Records of the Forest Service, Record Group 95 (58-A-130) 110128, Denver Regional Archives and Record Center.

11. R. T. Galloway to the Secretary of the Interior, August 15, 1913, *ibid.*

12. G. W. Helm to Robert Selkirk, October 10, 1913, *ibid.*

and the deed by which he conferred Tumacacori to the government was invalidated.¹³ On December 3, 1914, the assistant to the Solicitor General informed the Forest Service that it should no longer administer Tumacacori.¹⁴ His notice was evidently forgotten, for eight months later A. O. Waha, the acting district forester in Albuquerque, inquired about the administrative status of the mission. He wanted to know the status because treasure hunters were causing a great amount of destruction at Tumacacori.¹⁵ The Acting Secretary of Agriculture thought "it was unfortunate," but the government no longer had control of Tumacacori. Since the owners probably would not maintain the mission, he felt the Bureau of American Ethnology might be interested in taking action to preserve the ruins.¹⁶ No evidence shows that this agency was contacted. Since the Forest Service no longer administered Tumacacori, the Washington office evidently dropped its concern for the mission. In fact, from the day it began to administer Tumacacori, the Agriculture Department seemed to lack interest in preserving the mission.

Local Forest Service officers and area residents retained their interest in preserving Tumacacori, although over a year passed before their concern reached Washington. As a result of their action, however, the Baca Float owners' attorney promised to ask his clients if they would relinquish the mission.¹⁷ At the same time Frank St. John of Tubac wrote to Arizona Senator Henry Amhurst expressing his concern for the mission. Amhurst contacted the Interior Department, which replied that there was no reason why the mission could not be reacquired.¹⁸ The newly-created National Park Service acted to purchase Tumacacori from the Baca Float owners. In March 1918 Stephen Mather, the Park Service director, sent a quitclaim deed for the property to the Secretary of the Interior.¹⁹ The

13. Mattison, "A History of the Land Titles of the Tumacacori Mission," p. 25.

14. J. O. Seth to the District Forester, December 3, 1914, Records of the Forest Service, Record Group 95 (58-A-130) 110128, Denver Regional Archives and Record Center.

15. A. O. Waha to the Forester, August 25, 1915, *ibid.*

16. Carl Vrooman to the Secretary of the Interior, September 13, 1915, *ibid.*

17. D. F. Houston to the Secretary of the Interior, February 21, 1917, *ibid.*

18. First Assistant Secretary of the Interior to Senator Henry F. Amhurst, February 28, 1917, Records of the Office of the Secretary of the Interior, Central Classified File 1907-1936, 2-98, m, *Tumacacori*, Record Group 48, National Archives.

19. Stephen Mather to the Secretary of the Interior, March 23, 1918, Records of the Office of the Secretary of the Interior, Central Classified File 1907-1936, 12-1, Part I, J-V, *Tumacacori*, Record Group 48, National Archives.

Solicitor General regarded the deed as sufficient to transmit the land to the United States government. In addition he thought there was no need to re proclaim Tumacacori a national monument.²⁰ In April 1918, with this decision, the United States government once more controlled the mission.

Several months passed before the Park Service directed its attention to Tumacacori. On September 10, 1918, Stephen Mather asked Frank Pinkley, custodian at Casa Grande National Monument, to visit the mission and report on its condition and need for repairs.²¹ Sickness and work at Casa Grande delayed Pinkley until December 12, 1918. After he inspected the mission, Pinkley reported that it was in better condition than he expected.²²

Tumacacori sustained considerable damage over the years from the elements, vandals, and treasure hunters. Although several artists' sketches date from 1849, the first known photograph was taken in 1883 (Figure 7). This picture did not show much exterior physical damage, which lends credence to the conclusion that few treasure hunters disturbed the mission until the 1880s. The facade and entrance arch were intact except for the base of the lower right column. Destruction had not yet occurred to the southwest top corner of the second floor of the bell tower. The baptistry window on the lower floor of that tower, however, had been cut to ground level, giving the appearance of another entrance. This damage probably occurred in the late 1850s, since J. Ross Browne's sketch in 1864 showed the window as an entrance. An adobe wall had been constructed across the corridor between the southeast corner of the bell tower and the convento. Since this wall appeared in H. M. T. Powell's 1849 drawing, it was probably built by the Indians who remained at the mission after the Spanish priests were expelled in 1828. If it had been an original part of the mission, it would undoubtedly have been plastered. The picture also showed a small portion of the convento ruins.

An earthquake of great magnitude struck the southern Arizona and northern Sonora area on May 3, 1887, cracking or destroying many adobe and brick structures in Tucson, Tombstone, Willcox, St. David, Charleston, and Fort Huachuca as well as many buildings in Sonoran cities.²³ Although no record

20. Charles D. Mahsffie to the Secretary of the Interior, April 10, 1918, *ibid.*; Department of the Interior, *Second Annual Report of the Director of the National Park Service to the Secretary of the Interior For the Fiscal Year Ended June 30, 1918* (Washington, D.C.: Government Printing Office, 1918), p. 89.

21. Monthly Report of Frank Pinkley to the Park Service Director, October 1, 1918, Western Archaeological Center.

22. *Ibid.*, December 17, 1918, Western Archaeological Center; Department of the Interior, *Third Annual Report of the Director of the National Park Service to the Secretary of the Interior For the Fiscal Year Ended June 30, 1919* (Washington, D.C.: Government Printing Office, 1919), p. 258.

23. *Daily Tombstone Epitaph* (Tombstone, Arizona), May 4, 5, 1887; *Arizona Weekly Citizen* (Tucson), May 7, 14, 21, 1887. The earthquake was even felt at (continued)



Figure 7

1883 photograph, #73-264P, Sharlot Hall Museum, Prescott, Arizona.



Figure 7a

Enlargement of the Lower Facade taken from the first known photograph of the mission. Sharlot Hall Museum, Prescott, Arizona.

exists of any damage to Tumacacori, the large crack in the southwest corner of the nave wall undoubtedly stemmed from the earthquake. Frank Pinkley attributed the crack to the weight of the wall.²⁴

On July 4, 1889, George Roskruege took several photographs of the mission (Figures 8 and 9). A drastic change had occurred in the short time since the 1883 picture. On the facade, vandals had destroyed the lower portions of the bottom columns and the three remaining bases. In addition the piers and spring lines of the entrance arch were demolished, leaving a gaping hole. Individuals had dug under the southwestern corner of the belfry as well as along the top of the second floor of the bell tower. The baptistry window suffered further damage on its east side. The second photograph (Figure 9) showed interior damage. On both sides of the nave, along the sanctuary roofline, the picture revealed the existence of two nave roof corbels.

Between two and three years later, an international boundary re-survey picture (Figure 10) showed the mission in much the same condition as the Roskruege photos. Taken from a greater distance, the picture included more of the *convento* ruins, including the structure later called the "school house."

Another picture taken from the east, undoubtedly in the 1880s, showed the remains of a colonnade which formed part of the west side of the *convento* (Figure 11). A partly intact arch existed in front of the sacristy, while only arch foundations appeared further south. H. M. T. Powell described these remains as "solid arches" in 1849. These arches could have been destroyed by the 1887 earthquake.

Three interior photographs taken in the 1890s displayed the remains of the choir arch (Figures 12, 13, 14). The first two were taken within a year, since the tree growing in the nave debris was approximately the same size in both exposures. Little change is evident in the choir arch ruins during that period. Figure 12, however, shows more graffiti and damage on the entrance arch. Both figures 11 and 12 revealed a board protruding from the nave rubble near the right sanctuary arch pier. It could be the remains of a nave roof viga. Figure 13, taken about the same time, disclosed the arch from the other side and indicated interior damage.

The first photograph to show the rear of the mission and mortuary chapel (Figure 15) was taken by the international boundary re-survey party in 1891-92. It showed the hole in the rear sanctuary wall above the altar. Treasure hunters evidently made this opening about 1890, since local Mexican-Americans told Frank

23. (Continued) the West Texas army post at Fort Davis. The Inspector General reported that the barracks were "injured by earthquake shock in May 1887," Inspection Report, Fort Davis, Texas, August 5, 1887, RG 159, Records of the Office of the Inspector General, Microfilm NMRA 66-790 (7834), Fort Davis National Historic Site files.

24. Frank Pinkley, "Repairs and Restoration of Tumacacori--1921," *Southwestern Monuments Supplement* (October 1936), p. 271.

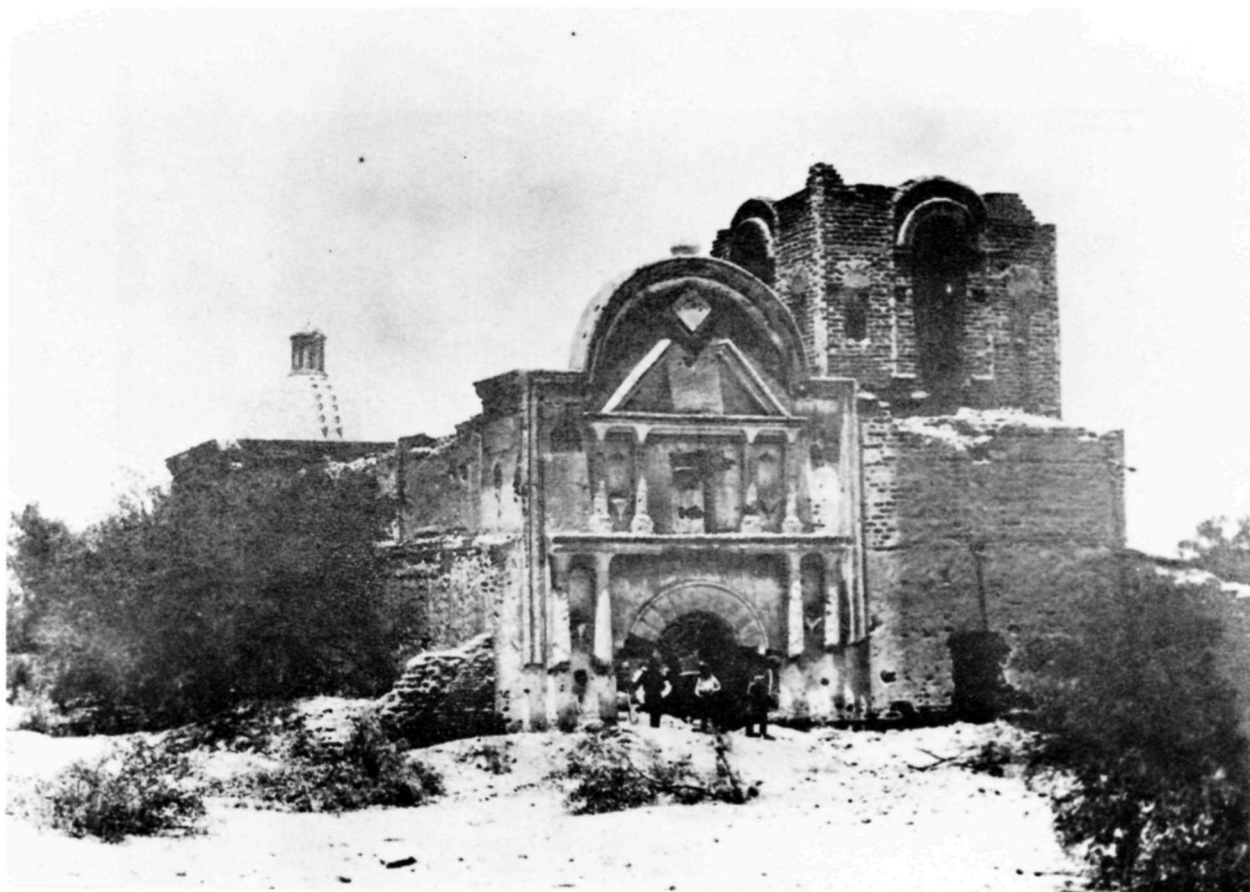


Figure 8

1889 George Roskruge photograph, #2546, Arizona Historical Society,
Tucson, Arizona.

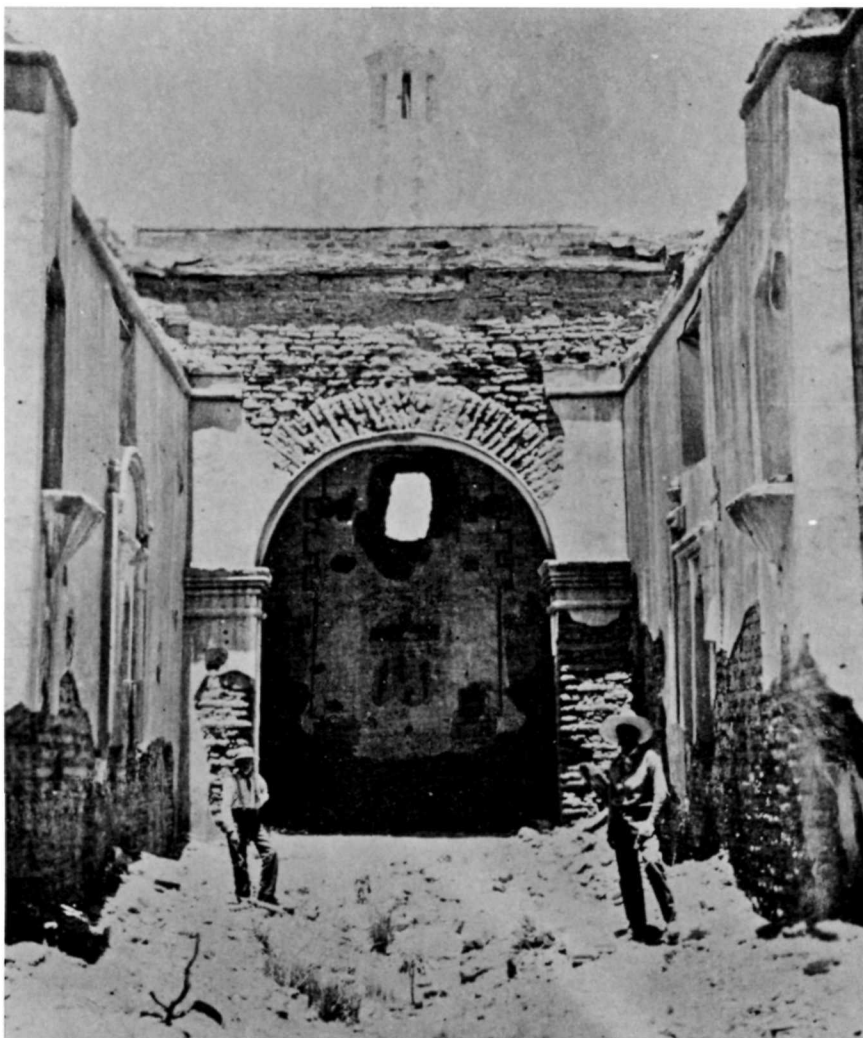


Figure 9

1889 George Roskrige photograph from the Tumacacori National Monument Files.



Figure 10

Ca. 1892 International Boundary Resurvey photograph from the
Tumacacori National Monument Files.

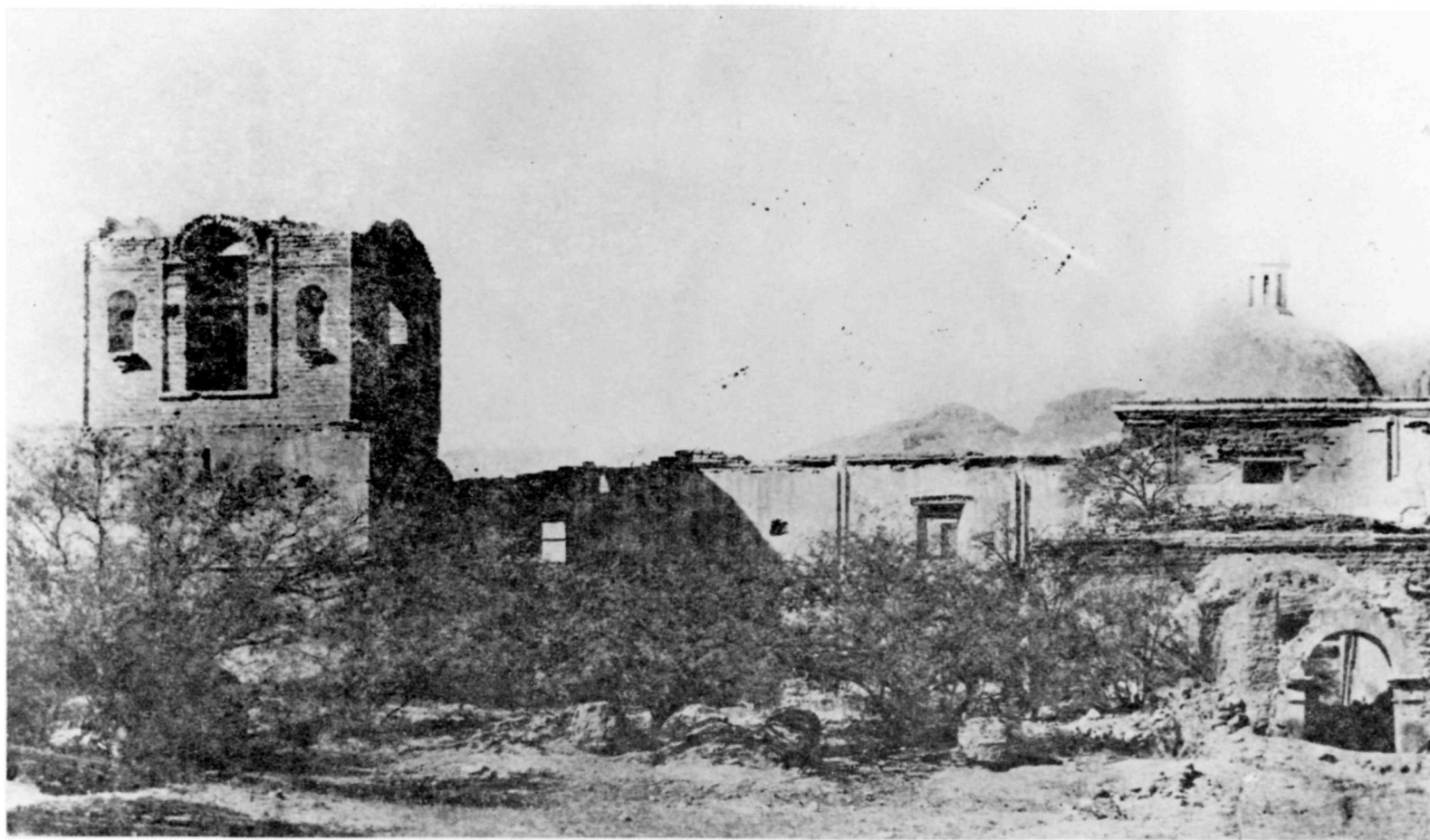


Figure 11

1880s photograph, #14243, Arizona Historical Society, Tucson, Arizona.



Figure 12

Approximately 1890 photograph, #24,949, Arizona Historical Society,
Tucson, Arizona.



Figure 13

1892 International Boundary Resurvey photograph, #JM-22/3275, Arizona
Historical Foundation, Arizona State Library, Tempe, Arizona.

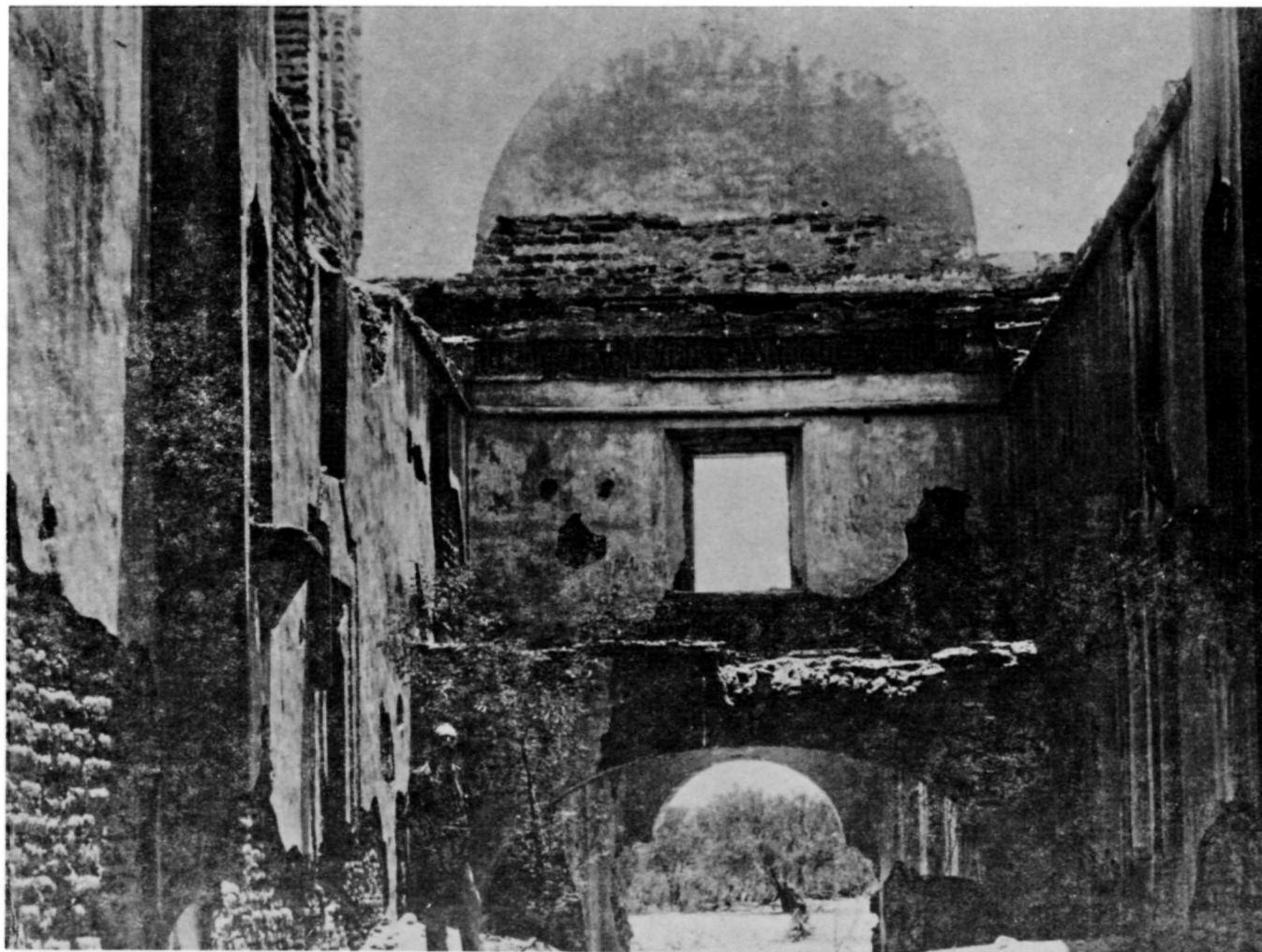


Figure 14

Early 1890s photograph, #G-408, Barry Goldwater Collection,
Arizona State Library, Tempe, Arizona.

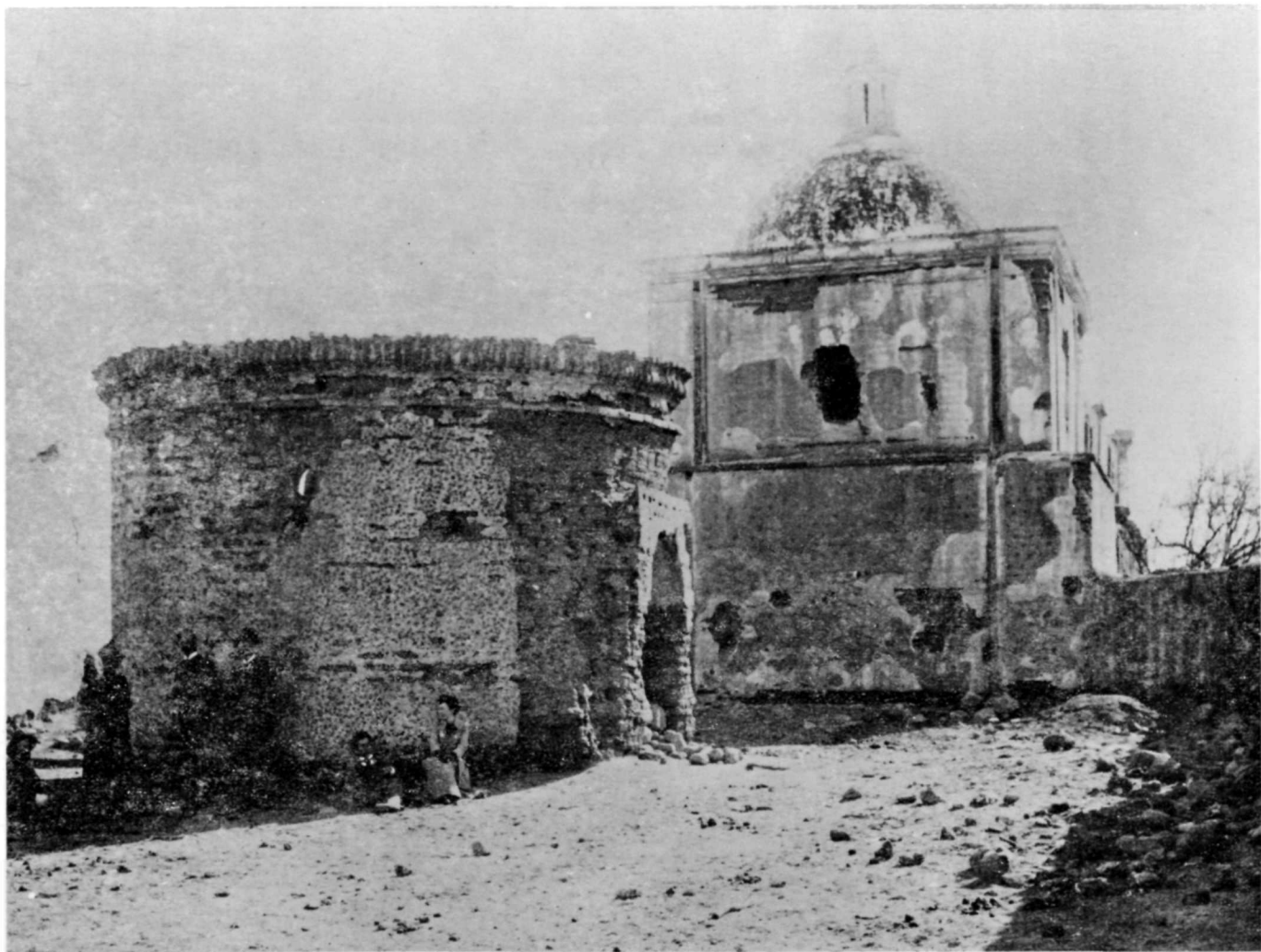


Figure 15

1892 International Boundary Resurvey photograph, #JM-22/3275, Arizona
Historical Foundation, Arizona State University Library, Tempe, Arizona.

Pinkley that a statue niche had occupied the hole in the 1880s.²⁵ By 1900 this hole had been enlarged and more plaster was missing from the rear wall (Figure 16). In addition, a top of one lantern pier above the sanctuary dome had sustained damage. The 1900 photograph revealed for the first time the ruinous condition of the west cemetery wall. Some fifty feet had been destroyed after 1884.²⁶ The exposure also showed that the east wall of the sacristy had cracked and tilted away from the structure. This condition probably developed because treasure hunters had removed part of the foundation under that wall. These men evidently ignored the mortuary chapel, for in these two photographs (Figures 15 and 16), and a third (Figure 17) taken about 1906, it had few exterior changes. In the latter picture one can again see the crack in the east sacristy wall. The poor Mexican family which moved into that room in 1906 apparently placed the two wires across the opening in the north sacristy wall as well as the fence across the opening in the east cemetery wall between the granary and the sacristy. That portion of the cemetery wall had collapsed or been destroyed sometime in the 1850s, and had served as a gateway when the cemetery was used as a corral.

In 1907 William P. Blake, on a second visit to the mission, took several photographs (Figures 18, 19, and 20). These pictures revealed continued mutilation of the church. The top of the facade was totally destroyed. This destruction probably occurred in the late 1890s. Vandals had caused further damage to the entrance by destroying the right side of the arch. When compared to their 1892 condition, the lower left columns were even shorter. More adobe brick had been dug from the top of the second story of the bell tower. The family of poor Mexicans had evidently placed the logs in front of the baptistry window. In addition they apparently fenced an area south of the sacristy. The family also used the corridor east of the sacristy (Figure 20) which had been roofed by Pedro Calistro in the 1890s. Either they or Calistro had built the ramada against the east side of that structure. No evidence of the convento arch or foundations remained and very little of the convent rooms' walls which ran east from the southeast corner of the bell tower survived. In the granary, just north of the sacristy, some of the second floor joists appeared.

Forest Ranger Will C. Barnes also photographed the mission during his inspection visit in October 1907. His pictures (Figures 21 and 22) showed the same deteriorated condition as William P. Blake's photographs. Looking into the mission interior in Figure 21, one may note the disappearance of the choir loft arch. It had collapsed in 1906. Another interior photograph (Figure 23) taken about 1907 showed a ramada in front of the sanctuary entrance. It had evidently been placed there by the Mexican-American family which moved into the mission in 1906. The picture also revealed continued destruction of interior plaster, especially on and above the sanctuary entrance arch. In addition, the corbels which appeared in the 1889 photograph (Figure 9) had been removed.

25. Pinkley, "Repair and Restoration of Tumacacori--1921," p. 283.

26. A community roundup used the cemetery for a corral in 1884. It would have been impossible to use it for this purpose if the west cemetery wall had been in the condition shown in the 1900 photograph.



Figure 16

Ca. 1900 photograph, #44,361, Arizona Historical Society, Tucson, Arizona.

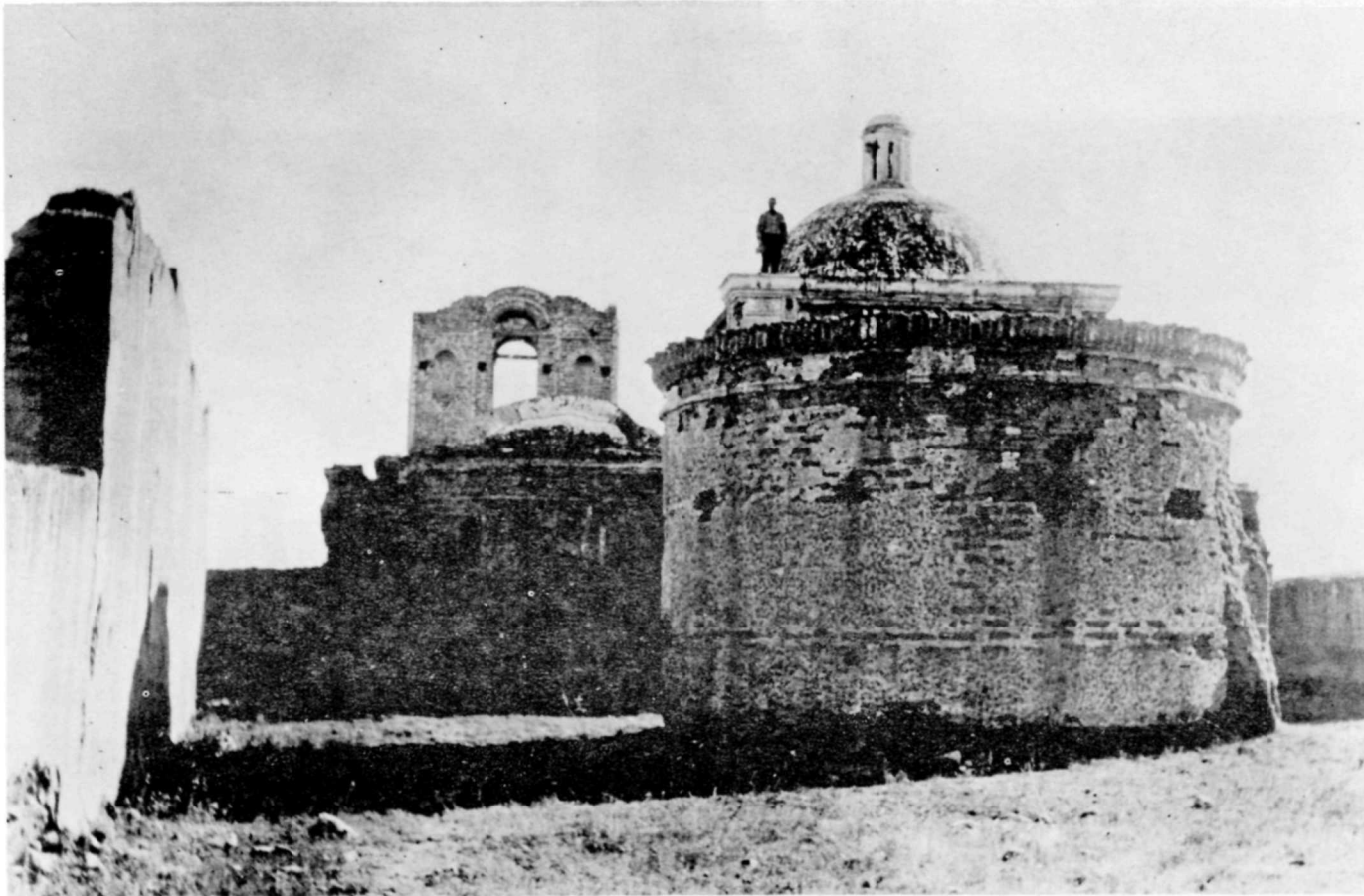


Figure 17

Ca. 1906 photograph, #2128, Arizona Historical Society, Tucson, Arizona.

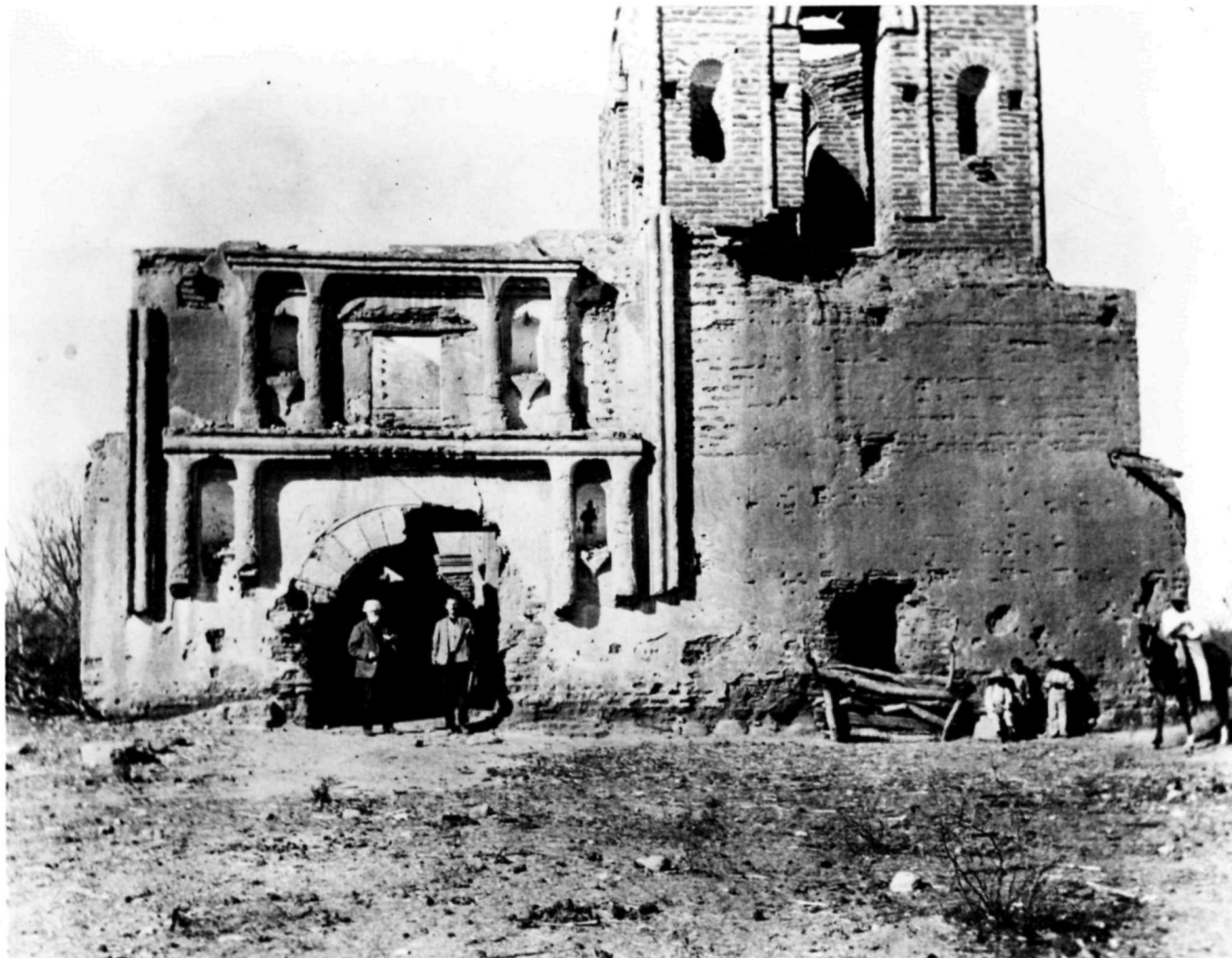


Figure 18

1907 photograph, #2122, Arizona Historical Society, Tucson, Arizona.
Taken by William P. Blake.

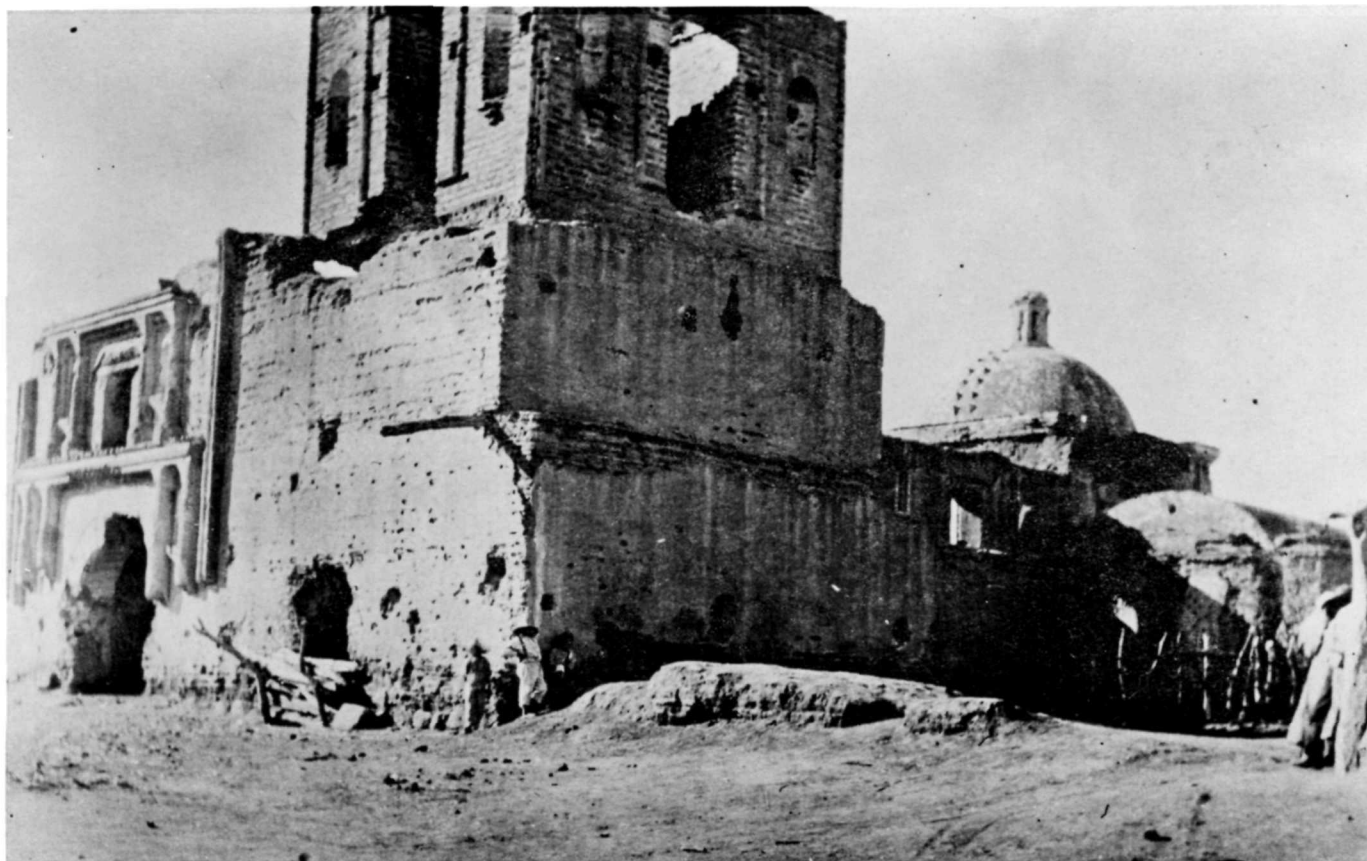


Figure 19

1907 photograph, #2129, Arizona Historical Society, Tucson, Arizona.
Taken by William P. Blake.



Figure 20

1907 photograph, #2121, Arizona Historical Society, Tucson, Arizona.
Taken by William P. Blake.

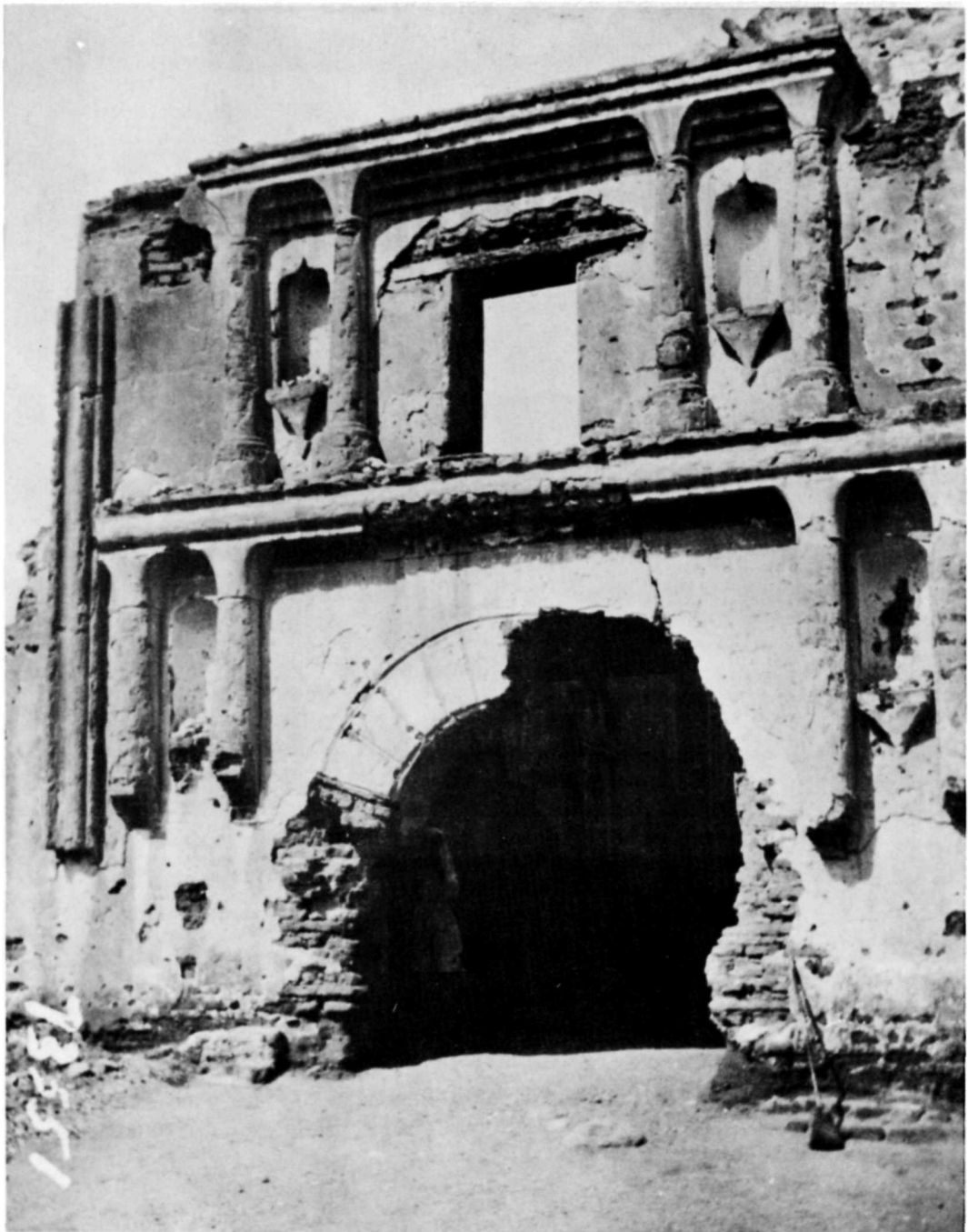


Figure 21

1907 photograph by Will C. Barnes, Records of the Forest Service,
Regional Archives and Record Center, Denver, Colorado.



Figure 22

1907 photograph by Will C. Barnes, Records of the Forest Service,
Regional Archives and Record Center, Denver, Colorado.

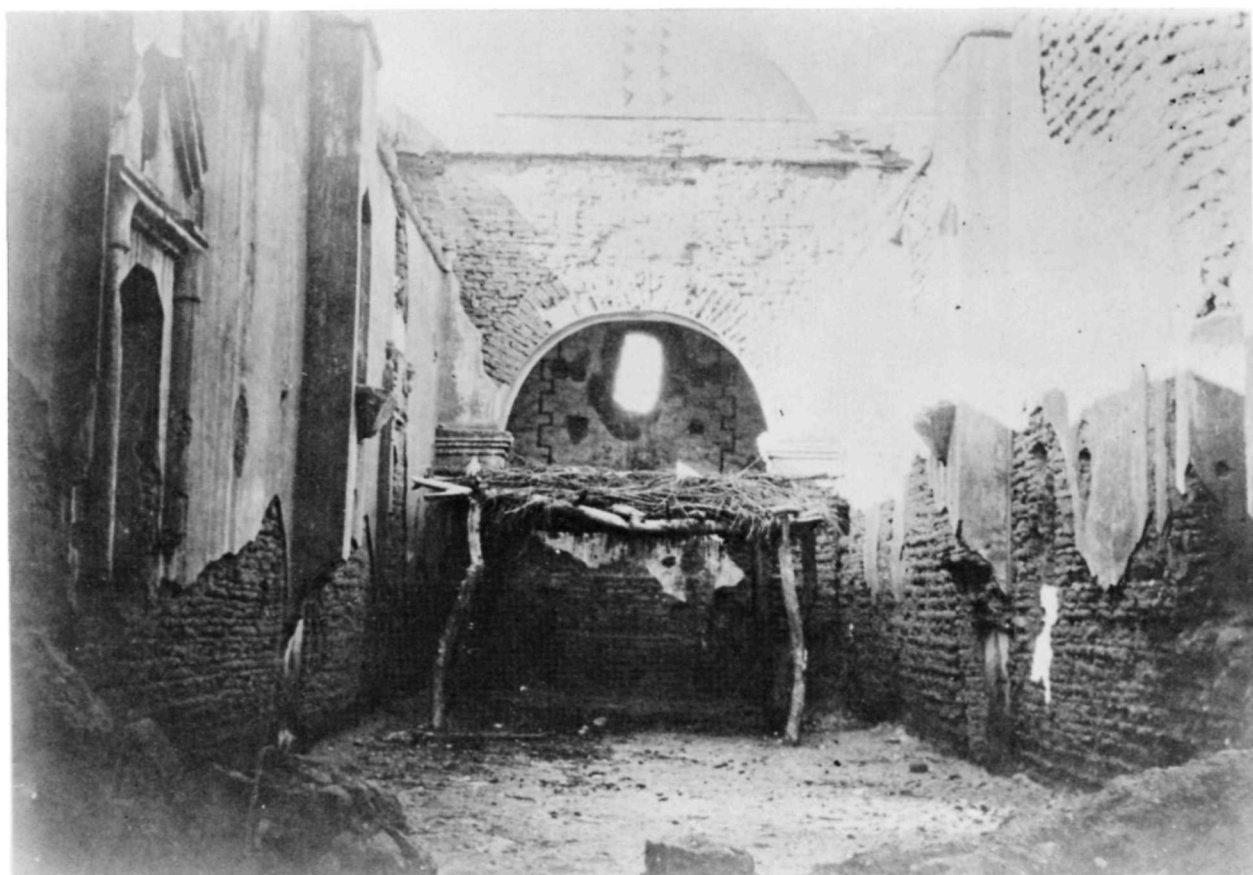


Figure 23

Ca. 1907 photograph, Tumacacori National Monument Files.

A photograph (Figure 24), exposed about 1913, displayed the deteriorated condition of the east side of the mission. Only a few logs remained of the ramada which had stood against the corridor east of the sacristy. Another picture (Figure 25), taken between 1913 and 1918, showed even more damage to the entrance arch.

Left to stand against the elements and vandals, Tumacacori mission deteriorated. Treasure hunters convinced of finding "Jesuit" gold continued to dig and redig in and around the mission. Without the interest of local residents to preserve this monument of early history, Tumacacori would probably be no more than a mound of earth--a monument to the destructive force of vandals and treasure hunters.

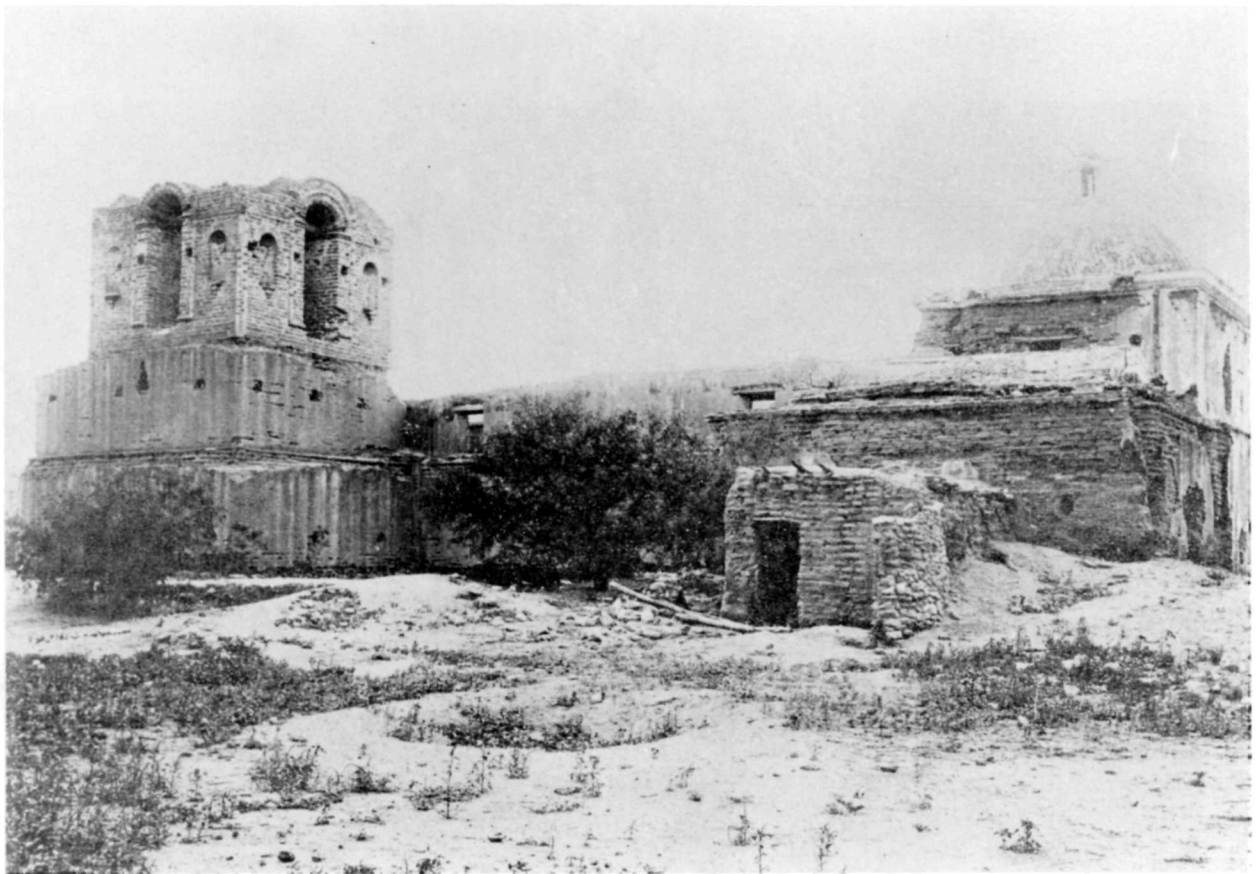


Figure 24

Ca. 1913 photograph, Tumacacori National Monument Files.

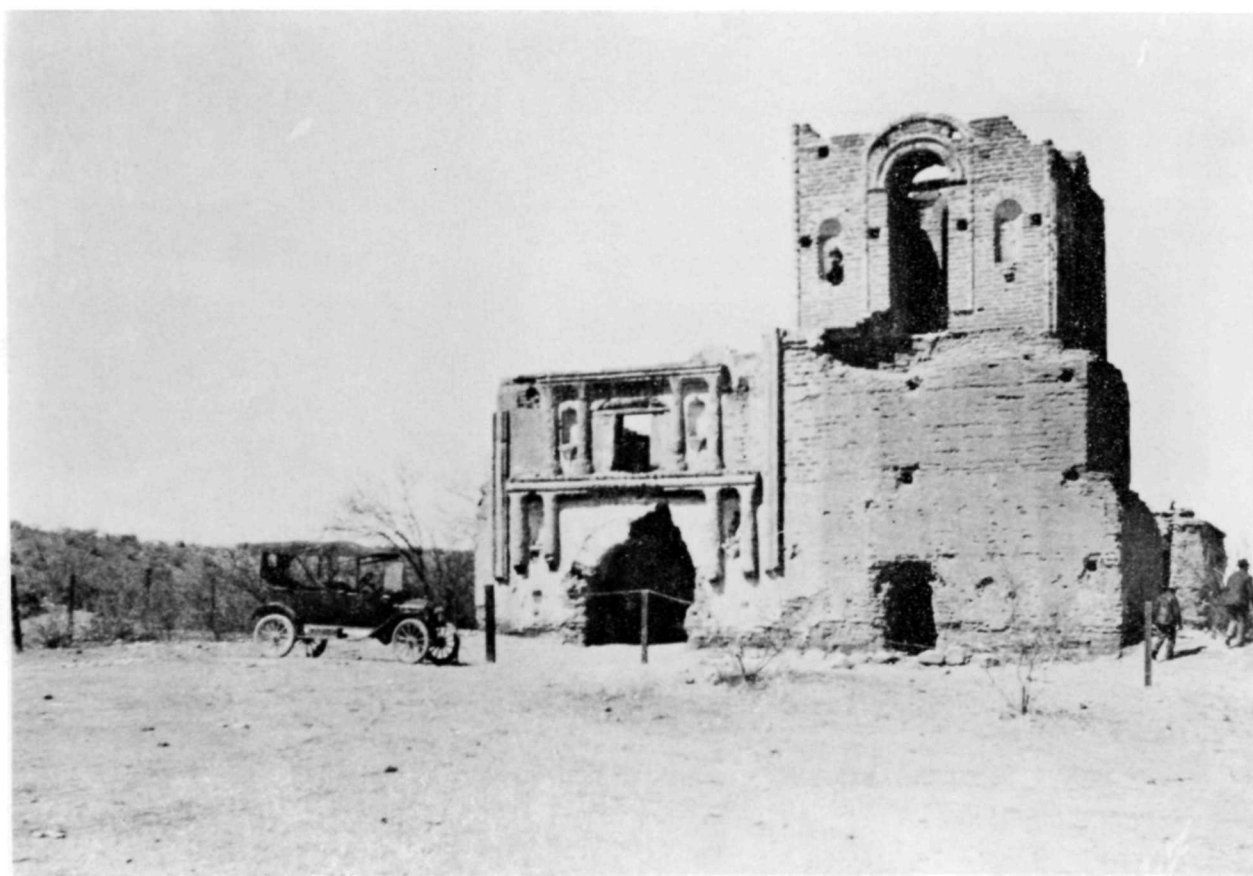


Figure 25

Ca. 1913-18 photograph, Tumacacori National Monument Files.

CHAPTER III: TUMACACORI NATIONAL MONUMENT: STABILIZATION AND RESTORATION

Although in December 1918 he found the mission in better condition than he expected, Frank Pinkley began what became a constant struggle to restore and stabilize the deteriorating structures at Tumacacori National Monument. In his initial report on the mission, Pinkley requested \$400 for immediate work. On January 6, 1919, while waiting for that appropriation, he made a second trip to the national monument, this time in the company of Park Service landscape engineers Herbert Gleason and Charles Punchard, Jr. At that time they had a conference with A. S. Noon, a Nogales contractor whom Pinkley had contacted, to discuss the initial work at the mission.¹

On February 20, 1919, Pinkley received the \$400 he requested. With this money available, A. S. Noon began work at the mission on March 14 and continued through March 22. He returned five days later and worked until March 30. The expenditure for the first operation totalled \$400.45. Noon made only absolutely needed repairs. He put two wagonloads of cement under the southwest corner of the belfry on the top of the second story of the bell tower where the whole southwestern pier threatened to fall. In addition he replaced the missing adobe brick at the top of the second floor of the bell tower. Several more wagonloads of cement and stones were placed under the east sacristy wall. Here treasure hunters had undermined the wall leaving almost no support for the east side of the barrel-vaulted roof. In addition Noon underpinned thirty to forty feet of the west cemetery wall and the whole east side of the church "where the adobe wall had badly ground-sapped."²

Realizing that \$400 would not cover the cost of all the needed repairs, Pinkley traveled to Tucson and Nogales between March 17-20, 1919, to seek local contributions. He received \$200 apiece from the Tucson and Nogales Chambers of Commerce and an additional \$200 from the National Park Service. These contributions allowed A. S. Noon to continue work into May. He reconstructed eighty to ninety feet of the cemetery wall on both the east and west sides and the cemetery gate except for the decorative brick frame.³ Figures 26 and 27 show the rebuilt east cemetery wall. With this work accomplished, Noon turned to the interior of the mission and removed the debris from the nave floor. In his initial cut along the east nave wall he found a side altar around which at floor level was a six-inch-thick layer of rotten lime mortar. Further excavation revealed more side altars and the choir loft supports. In the debris Noon found most of the parts of the holy water basin and the top third of the ball which set atop the facade. A mark in the ball showed where the cross had been. Close to the

1. Department of the Interior, *Third Annual Report*, pp. 258-59.

2. *Ibid.*, p. 259.

3. *Ibid.*



Figure 26

1919 photograph, Tumacacori National Monument Files.

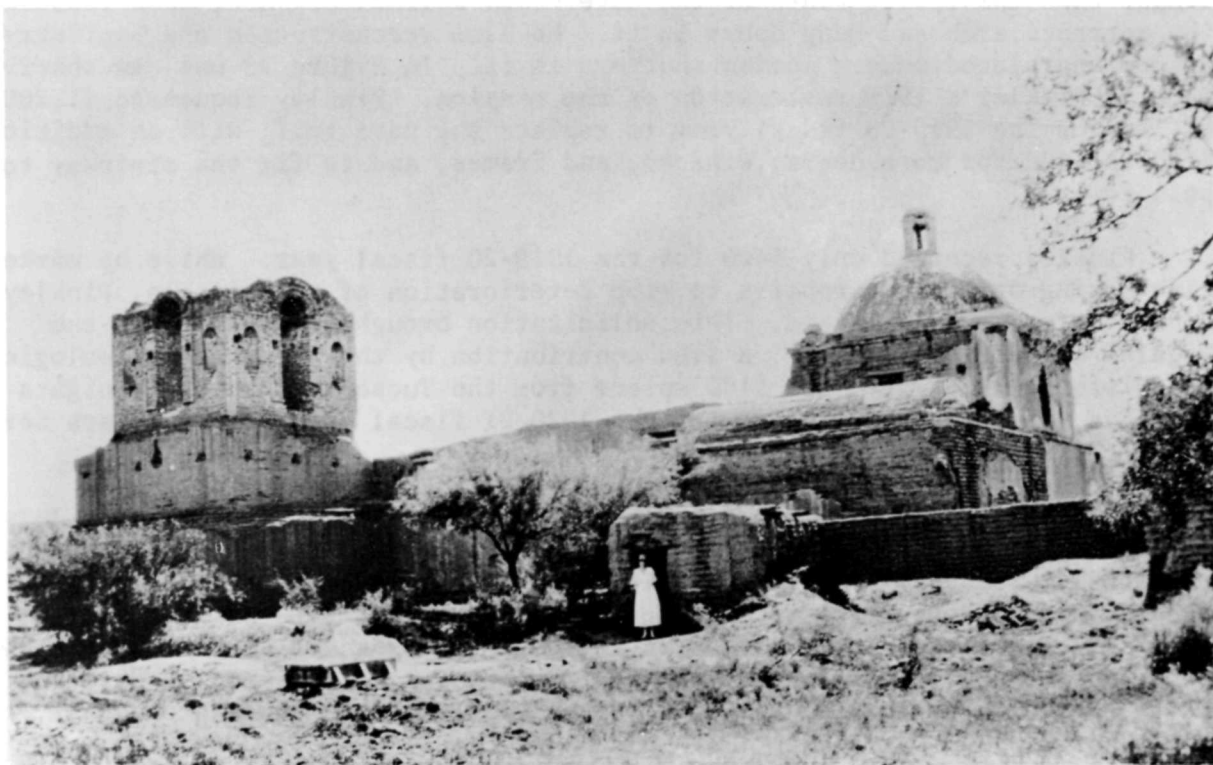


Figure 27

1919 photograph, Tumacacori National Monument Files.

east wall he also recovered a few small pieces of rotten wood.⁴ These fragments were undoubtedly the remnants of a nave roof viga. Someone evidently mentioned to Noon that Henry Lowe had used these roof timbers for his house, for Noon went to the site where the Lowe home had stood. In 1910 the Southern Pacific Railroad had built a spur from Tucson to Nogales. The spur passed through the Lowe property so near the house that the construction workers had razed it. Noon, however, found one hewed pine timber against a fence where the railroad laborers had thrown it. The timber measured eight by eight inches with a length two feet longer than the inside width of the nave.⁵ As a final measure, Noon restored the entrance arch and hung doors in it. He also reconstructed the baptistry window and placed modern wooden shutters in it. In Figure 28 one can observe some of Pinkley's 1919 restoration of the mission. Pinkley requested \$1,200 to \$1,300 for the 1919-20 fiscal year to replace the nave roof, with an additional \$200 to \$300 for more doors, windows, and frames, and to fix the stairway to the bell tower.⁶

Pinkley received only \$400 for the 1919-20 fiscal year. While he marked time making only minor repairs to stop deterioration of the mission, Pinkley appealed for more local aid. This solicitation brought him \$600 from the Nogales Chamber of Commerce, a \$160 contribution by the Arizona Archaeological and Historical Society, and \$100 apiece from the Tucson and Phoenix Knights of Columbus. He requested \$1,000 for the 1920-21 fiscal year from the Park Service and received \$800.⁷

With ample funds available to restore the nave roof, Pinkley spent July 1920 studying California missions to get ideas for reconstruction and improving services at Tumacacori.⁸ In April 1921 he began replacing the nave roof. Special-sized adobe brick were made to reconstruct the nave walls to their original height (two to four feet in most areas with an occasional one to two feet of rotten brick removed to provide a solid base from which to work). These bricks measured eleven and one-half inches wide, twenty-five and one-half inches

4. *Ibid.*; A. S. Noon to Frank Pinkley, May 10, 1919, "Archaeology and Stabilization Overview of Tumacacori National Monument," p. 6.

5. *Ibid.*; Bents, "The History of Tubac, 1752-1948," p. 209.

6. Department of the Interior, *Third Annual Report*, p. 259.

7. Department of the Interior, *Fourth Annual Report of the Director of the National Park Service to the Secretary of the Interior For the Fiscal Year Ended June 30, 1920* (Washington, D.C.: Government Printing Office, 1920), pp. 330-31; Monthly Report of Frank Pinkley to the Park Service Director, February 1, 1920; Department of the Interior, *Fifth Annual Report of the Director of the National Park Service to the Secretary of the Interior For the Fiscal Year Ended June 30, 1921* (Washington, D.C.: Government Printing Office, 1921), p. 273.

8. Monthly Report of Frank Pinkley to the Park Service Director, August 3, 1920.



Figure 28

Approximately May 1919 photograph, #2554, Arizona Historical Society,
Tucson, Arizona.

long, and two and one-fourth inches thick. The cornice was constructed of burnt bricks which were twenty-two inches over their greatest length, thirteen and one-half at their greatest width, and three inches thick. One end was molded in a scroll shape which projected over the wall. Pinkley found wedge-shaped bricks (eleven and one-half inches wide at one end, eight and one-half inches wide at the other, and three inches thick) in various places, including the shoulder of the outside wall and the facade pediment on top of the front wall. He decided that in the 1822-24 period, when work was delayed for lack of money, Padre Liberos had depleted his supply of standard-size bricks, but still had vital exposed areas to cover. As a result, Pinkley concluded, Liberos had used the fired wedge-shaped bricks intended for the mortuary chapel roof and bell tower dome to finish the exposed areas. Pinkley replaced the wedge-shaped bricks wherever he found they had been used except for the facade pediment. Here he used eight- by sixteen-inch bricks.⁹

Pinkley designed the nave roof of partly restoration and partly modern weatherproof construction. Timbers for the beams came from the south and south-east sides of the Santa Rita Mountains. Pinkley gathered twenty-six pine trees cut to eighteen and one-half feet in length for this purpose. He tried to hew them into ten by ten inches, but some trees were not thick enough. The beams, set three feet on center, rested on the burnt cornice bricks with a one- by twelve-inch wooden plate under them. Next, Pinkley used thirty-eight-inch ocotillo placed in a herringbone pattern over the beams. On this layer he put two- by twelve-inch rafters set on side and three feet apart. He spread one ton of straw in the space between the rafters and then covered the roof with one- by twelve-inch boards. Finally, Pinkley applied roofing paper. The gutters were made with a rubble of lime, cement, and rocks. To waterproof the roof joints and gutters Pinkley used a special roof cement.¹⁰

Additionally, Pinkley repaired the downspouts (*canales*) with cement. Removing the debris along the west mission wall to repair the *canale* footings, he discovered a rock abutment wall which ran along the base of the mission and west cemetery walls. It had been placed there after the church was constructed.¹¹

With the nave roof in place, Pinkley restored the facade pediment. Since it had been broken off at the lintel line over the choir loft window, it required raising the wall ten to twelve feet. He used the George Roskrige pictures taken in July 1889 for his guide. Pinkley surmounted the facade with a ball and cross. The top third of the ball was formed with the original portion found by A. S. Noon in the nave debris.¹²

9. Pinkley, "Repairs and Restoration of Tumacacori--1921," pp. 261-67.

10. *Ibid.*, pp. 268-70, Plate II; Department of the Interior, *Fifth Annual Report*, pp. 273-74.

11. Pinkley, "Repairs and Restoration of Tumacacori--1921," p. 281.

12. *Ibid.*, p. 282.

No redecorating was done to the interior of the church. Pinkley did patch some vandal holes, including the large one in the back wall of the sanctuary over the main altar. In the bell tower he restored the stairs from the ground level to the third floor belfry.¹³

On the mission exterior Pinkley filled many small holes to strengthen the walls and remove traces of vandalism. In addition he reinstated the exterior coping along the top of the second story of the bell tower.¹⁴ By the fall of 1921 Pinkley finished his work. A Historic American Buildings Survey drawing (Figure 29) shows the restoration accomplished on the front of the mission through 1921. Most of the dates listed on the drawing are incorrect.

Pinkley spent only \$30 in the 1921-22 fiscal year. He used this money to clear debris from the west side of the mission and cut the ground level to its original line.¹⁵

During the 1922-23 fiscal year Pinkley received \$1,000 from the Arizona State Legislature. He planned to use this money for improvements at Tumacacori in the succeeding fiscal year.¹⁶ As a result, between December 6 and 18, 1923, Pinkley supervised two gangs of adobe bricklayers who worked to restore 600 to 700 feet of the cemetery wall to its original height. He found several more weak areas in the wall foundation which the work force underpinned. In addition they began to place a concrete cap on the wall and completed the decorative brick frame over the cemetery gate.¹⁷ However, they did not finish the wall cap.

Since cattle roamed the area, Pinkley decided to fence the mission grounds. He used a portion of the Arizona Legislature money to purchase three twenty-rod rolls of fifty-five-inch woven wire fence and four- by four-inch posts. On December 14, 1923, Albert Steinfeld and Company of Tucson delivered these purchases. They returned on January 16, 1924, with a fourteen-foot steel gate for the wagon entrance and a nineteen-foot cattle guard for the automobile entry. In February 1924 Pinkley installed the fence. At the same time his work crew gathered many wagonloads of stones strewn about the grounds and used them to

13. *Ibid.*, pp. 261, 283; Department of the Interior, *Fifth Annual Report*, p. 274.

14. Pinkley, "Repairs and Restoration of Tumacacori--1921," p. 262; Department of the Interior, *Fifth Annual Report*, p. 274.

15. Department of the Interior, *Sixth Annual Report of the Director of the National Park Service to the Secretary of the Interior For the Fiscal Year Ended June 30, 1922* (Washington, D.C.: Government Printing Office, 1922), p. 156.

16. Department of the Interior, *Seventh Annual Report of the Director of the National Park Service to the Secretary of the Interior For the Fiscal Year Ended June 30, 1923* (Washington, D.C.: Government Printing Office, 1923), p. 182.

17. *Southwestern Monuments Monthly Reports* (Tumacacori), January 2, 1924.

border the road after it entered the premises. As the final beautification measure, they painted the fence posts Park Service green.¹⁸

Pinkley also worked to make improvements on the mission building in February 1924. Inside the church he began to restore the destroyed pulpit, and on the exterior more repairs were made to the downspouts at a cost of approximately \$200. Since Pinkley had not allowed the workmen to use any coloring, the white lime patchwork on the *canales* stood out. For artistic appearance, he decided to shade the patches later with a mud and water wash.¹⁹

Another project in February 1924 involved the restoration of the two cisterns located in front of the mission. Pinkley discovered one cistern in the summer of 1921. Erosion from a heavy rain that summer had uncovered a brick wall about twenty-one feet south of the southeast corner of the bell tower. Investigation showed it to be a reservoir about six by twelve feet with a floor approximately thirty-six inches below ground level. Since it was in poor condition, Pinkley's men excavated only one side. Some plaster remained on the brick. Workmen told Pinkley of a second cistern near this one. Both had been destroyed by treasure hunters. Pinkley, however, did not search for the second cistern until December 1923. At that time exploratory excavations revealed the other reservoir. It, too, was brick lined with a dimension of six by six feet and a depth of eighteen inches. Pinkley believed that both cisterns had originally projected eighteen inches above ground, so he rebuilt them to that height.²⁰

During June 1924 Pinkley restored the double doors between the sanctuary and sacristy. The old doors had been absent for so long that Pinkley could find no one who remembered them. Treasure hunters had used picks and bars to remove the doors and in the process had destroyed the surrounding frame. Although he guessed at the details, Pinkley used similar doors at San Xavier mission for a guide. A Mexican carpenter made the doors of Spanish cedar with a pine frame. He used no nails, mortising the stiles and rails together with wedges driven into the tenons. Each door, stained with crude oil and gasoline, contained six small and two large panels. A blacksmith made six iron hinges from old quarter-inch wagon wheel rims. After the doors were hung they roughed in the broken wall around the door frame with mortar. On the sanctuary side they brought the floor to its original level and built two steps into the sacristy.²¹

18. Department of the Interior, *Eighth Annual Report of the Director of the National Park Service to the Secretary of the Interior For the Fiscal Year Ended June 30, 1924* (Washington, D.C.: Government Printing Office, 1924), p. 150; *Southwestern Monuments Monthly Reports* (Tumacacori), January 2, March 3, 1924.

19. *Ibid.*, March 3, April 1, 1924.

20. Pinkley, "Repair and Restoration of Tumacacori--1921," p. 277; *Southwestern Monuments Monthly Reports* (Tumacacori), January 2, April 1, 1924.

21. *Ibid.*, July 1, 1924.

Additional repair work was done in succeeding fiscal years during the 1920s. The Park Service report for 1925-26 merely stated some repair work was done.²² In February 1928 Earl Jackson did extensive replastering on the exterior north end of the mission. During the same period he made some repairs under the cornice of the sanctuary walls. He also repaired the nave roof and gave it a coat of roof paint. In addition Jackson cleaned the cemetery and provided for better drainage of that enclosure as well as making many minor repairs.²³ Figure 30 shows the mission as it appeared in 1928. In the rear view one can see the uncapped east cemetery wall. From June 10 to 18, 1929, more repairs were made on the mission, including the nave roof.²⁴

Before 1929 Frank Pinkley served as custodian of Tumacacori, but resided at Casa Grande National Monument. In 1925 Pinkley recruited John Cummings (probably a local resident) to help protect the monument from vandalism.²⁵ Cummings evidently served in that capacity for only a short time. J. B. Bristol, secretary of the Nogales Chamber of Commerce, then acted as part-time custodian. He resided in Nogales and periodically visited the mission.²⁶ Johnwill Faris arrived in April 1929 as the first permanent custodian. He served only six months, for on October 30, 1929, George Boundey took his place. When Boundey arrived, he found the fence in poor condition on three sides of the mission. Cattle wandered in and out of the mission.²⁷ No attempt was made to rebuild the fence until 1934 when an adobe wall was erected.

In early January 1930 C. E. Peterson inspected the church. He concluded that minor repairs would keep the mission in a safe condition. His estimation proved wrong, for extensive repairs were soon needed. In addition he recommended that visitors be prevented from driving and camping among the *convento* ruins.²⁸

22. Department of the Interior, *Tenth Annual Report of the Director of the National Park Service to the Secretary of the Interior For the Fiscal Year Ended June 30, 1926* (Washington, D.C.: Government Printing Office, 1926), p. 154.

23. *Southwestern Monuments Monthly Reports* (Tumacacori), April 1, 1928.

24. Department of the Interior, *Annual Report of the Director of the National Park Service to the Secretary of the Interior For the Fiscal Year Ended June 30, 1929* (Washington, D.C.: Government Printing Office, 1929), p. 156; *Southwestern Monuments Monthly Reports* (Tumacacori), July 10, 1929.

25. *Ibid.*, April 1, 1925.

26. *Ibid.*, November 1, 1928.

27. *Ibid.*, November 25, 1929.

28. C. E. Peterson, "Report to Mr. Vint on Tumacacori National Monument," January 25, 1930, typescript, Western Archaeology Center.



Figure 30

February 1928 photographs, #51,684 and 51,685, Western Archaeology Center, Tucson, Arizona. Taken by Earl Jackson.



Custodian George Boundey did not report any repair work until November 1931 when he wrote of mends made to the churchyard wall.²⁹ In September 1932 he removed the straw from the nave roof. The straw had provided a hiding place for bats and in wet weather gave the mission an odor. In addition water had entered the nave roof through undetected leaks causing the straw to rot to such an extent that he feared spontaneous combustion. At the same time Boundey repaired irregular pockets in the mission floor caused by visitor traffic and continual sweeping to remove straw and the bat droppings.³⁰

In January 1934 the Civil Works Administration began an extensive project at Tumacacori. Workmen excavated 400 linear feet of the mission and cemetery foundations to permit repairs.³¹ They also mended the walls. Exposure to the elements had caused the unplastered areas of the adobe walls to crumble off to a depth of eight inches in some places. These decayed areas were "cleansed" and repaired by fastening one-inch mesh, eighteen-gauge poultry netting on the walls with three-inch box nails driven at opposing angles. A mixture of one part cement to four parts sand was placed over the mesh until the walls were level with their original line. It was then coated with a lime plaster.³² Workmen also made repairs on the bell tower and nave roof. The entire plaza, especially near the mission, was graded to aid water drainage and stop its entrance into the base of the mission walls. An additional fifteen yards of earth were excavated in the construction of a drainage ditch.³³

Another portion of the project involved making 27,000 adobe brick for an outer wall to replace the deteriorated woven wire fence Pinkley had built. This wall was needed to keep cattle off the mission grounds.³⁴ Workmen had erected only a small portion of the outer wall when the Civil Works Administration dissolved on April 5, 1934. Construction, however, did not end, for the Federal

29. *Southwestern Monuments Monthly Reports* (Tumacacori), December 2, 1931.

30. *Ibid.*, October 1, 1932.

31. "Civil Works Administration Repair to Mission Walls, January 8-March 27, 1934, National Monuments, Tumacacori, National Park Service Central Classified File, 1933-1949, Record Group 79, 619, National Archives; Department of the Interior, *Annual Report of the Southwestern Monuments For the Fiscal Year Ended June 30, 1934* (Washington, D.C.: Government Printing Office, 1934), p. 11. Construction material used to repair the foundation walls included 426 sacks of cement, 85.29 yards of sand and gravel, and 85.29 yards of ready-mix concrete.

32. *Ibid.*; Wall repair material included eighty-five sacks of cement, 500 pounds of lime, 750 feet of poultry netting, 100 pounds of nails, and ten yards of sand.

33. *Ibid.*

34. George L. Boundey to Julius F. Stone, January 29, 1934, National Park Service Central Classified File, 1933-1949, Record Group 79, 619, National Archives.

Emergency Relief Administration provided funds to continue work.³⁵ FERA officials sent local men, who worked between June 1 and October 31, 1934, to complete the enclosure. They constructed 1,607 feet of the adobe wall on a reinforced concrete base and capped it with concrete. The wall did not extend to the back portion of the monument. Because of a shortage of funds they did not plaster it.³⁶ Reports on these extensive projects made no mention of any artifact discoveries during excavations.

Since adobe decay continued, an experimental waterproofing compound of vinyl resin in acetone and toluene, called NPSX, was applied to the mission on March 29, 1935. Two coats of a three percent solution were sprayed at sixty pounds pressure on the exterior mission wall at the east side of the south entrance. It covered the whole area to approximately the spring line of the entrance arch. Inside the mission nave two coats of the same solution were applied at the base and on the first pilaster in the south corner of the wall. Interior exposed adobe and white plaster frescoed in colors were also sprayed after all dust had been removed with compressed air at sixty pounds pressure. By the end of 1935 no determination had been made of the experiment's effectiveness.³⁷ It evidently did not provide an answer to adobe decay, since it was not used later on other areas.

Approximately the same time as the vinyl resin was applied, Arthur Woodward suggested future restoration projects. He felt the choir loft arch and floor as well as part of the railing should be reconstructed. The mission, he thought, needed a floor and small burnt brick put on the restored pulpit to give the visitor a better idea of the original appearance. To keep birds and bats out of the mission, Woodward advocated a fine mesh screen for the windows. He also stated that the bell tower needed reinforcement and the stairs inside that structure required repair and strengthening.³⁸ Several of Woodward's suggested improvements were later adopted. In the meantime, by the end of April 1935, FERA workmen had made 11,000 adobe bricks for future repairs and construction.³⁹

During August 1935 a roof dressing was applied to the nave roof. This measure only temporarily solved the problem. In May 1937 J. H. Tovrea came to the monument to assess the type and cost of repairs on new leaks in the nave

35. Custodian's Monthly Report, Tumacacori, April 26, 1934.

36. Walter G. Atwell, "Tumacacori National Monument: Report on FERA Project, 1934, Adobe Wall Fence," January 21, 1935, National Monuments, Tumacacori General, National Park Service Central Classified File, 1933-1949, Record Group 79, 208.11, National Archives. The wall cost \$8,102.69.

37. Frederick T. Martius, "Report on Field Tests made During 1935 for the Preservation of Adobe," 1936, manuscript in the Western Archaeology Center.

38. Arthur Woodward, "Report of Investigations of Excavations at Tumacacori National Monument March 1935," National Park Service Central Classified File, 1933-1949, Record Group 79, 208.11, National Archives.

39. Custodian's Monthly Report, Tumacacori, April 26, 1935.

roof. The roof was again repaired in April 1938.⁴⁰ Starting in 1928, periodic leaks had continued to appear in that roof. Stopgap repairs only prolonged water seepage into the mission until the nave roof was replaced in 1947.

Evidently the effort in 1934 to solve water drainage did not correct the problem, for in September 1936 Custodian Louis Caywood reported that a drainage ditch was dug west of the mission to keep water from seeping into the foundation.⁴¹ He made no mention of finding any subsurface foundations or artifacts during the ditch excavations.

In April 1938 Caywood had the top of the cemetery wall cleaned in preparation for capping. Almost 1,000 adobe brick were made at the mission for use in bringing the wall to its original height. By June this task had been completed, but the wall did not receive a cap until January 1939. Only a short section of the north wall containing the original cap was left untouched. Niches in the cemetery wall, where the stations of the cross had been, were also repaired and readied for plaster.⁴²

April 1938 proved a busy month. Red and blue paint samples from the mission interior were taken to Nogales where Hugo Miller assayed them for metal content. Because the samples evidenced little metal reaction, Caywood considered the paint to be basically organic. At the same time a concrete foundation was laid in the mission interior in preparation for a brick floor. Laying floor brick, however, did not begin until January 1939. Caywood used eight- by twelve-inch bricks placed in a basket-weave pattern. Although he originally planned to cover the entire nave floor, Caywood's final arrangement left the areas between the nave altars uncovered. Repairs were also made on the steps from the nave to the sanctuary and on those from the sanctuary to the sacristy.⁴³

During March 1939 larger holes in the mission walls were filled with adobe bricks to improve the mission's appearance and strengthen the walls.⁴⁴

Nave roof leaks remained a problem. In June 1941 Caywood sealed cracks on that roof and along the gutters and downspouts with a bitumium mastic. Some of the roof cracks, which were more than an inch wide, allowed water to enter the walls. The worst split occurred on the northeast side of the nave roof. To improve roof drainage, Charles A. Richey, the assistant custodian, felt that the gutters needed a waterproof cover of eight-ounce canvas applied directly with

40. *Ibid.*, August 26, 1935; May 23, 1937; April 25, 1938.

41. *Ibid.*, September 23, 1936.

42. *Ibid.*, April 25, May 25, June 23, 1938; *Southwestern Monuments Monthly Reports* (Tumacacori), January, February 1939.

43. Custodian's Monthly Report, Tumacacori, April 25, 1938; *Southwestern Monuments Monthly Reports* (Tumacacori), January, February 1939.

44. *Ibid.*, March 1939.

cold asphalt roof paint and coated with the same material.⁴⁵ This task apparently was not accomplished. After a rain and snow storm on January 1 and 2, 1942, leaks again occurred in the nave roof. Caywood applied a coat of hot tar because he could not discover where the water entered the roof.⁴⁶ Inspection in March 1943 revealed the need for more nave roof repairs.⁴⁷ One year later, in March 1944, Caywood reported that heavy rains had once more created bad leaks in the nave roof. Repairs only temporarily solved the problem, for in August 1944 new leaks appeared in the north end of that roof. A weak arch which formed the entrance between the nave and sanctuary and the decaying nave roof probably caused the cracks in the north end of the nave roof. Ted Sowers, the new custodian, thought it necessary to replace the roof. In March 1945 the Tucson Roofing and Supply Company repaired a leak in the area where the nave roof joined the sanctuary dome.⁴⁸

Not only did the nave roof leak, but cracks appeared in the sacristy roof. Senior Engineer E. F. Preece from Region Three headquarters inspected that roof in July 1941. He recommended sealing the cracks with oakum and mastic.⁴⁹

Wind and rain took its toll on other areas of the mission. A heavy rain on August 8, 1944, caused the lower left column to fall from the facade. Only the capital and several inches of the column remained. Sallie Brewer, a monument employee, gathered the pieces for use in future restoration.⁵⁰

During October 1944 test patches of a mixture of stabinol and soil were fixed to cracks and unplastered areas on the bell tower's north wall. A month later various mixtures of that compound were placed on splits in the east mission wall. When these areas dried, a prime coat was applied. Other work in this period included a thin coat of concrete placed around the exterior edge of the sanctuary dome. It was covered with a prime coat and a final zone coat. Badly

45. Charles A. Richey, "Report of Inspection," July 13, 1941, National Park Service Central Classified File, 1933-1949, Record Group 79, 208.11, National Archives.

46. *Southwestern Monuments Monthly Reports* (Tumacacori), February 8, 1942.

47. *Ibid.*, March 15, 1943.

48. *Ibid.*, April, August 1944, March 1945.

49. Charles A. Richey, "Report of Inspection," July 28, 1941, National Park Service Central Classified File, 1933-1949, Record Group 79, 208.11, National Archives.

50. Ted C. Sowers, "Report on Flood and Flood Damage at Tumacacori National Monument," August 1944, National Park Service Central Classified File, 1933-1949, Record Group 79, 600.01, National Archives; *Southwestern Monuments Monthly Reports* (Tumacacori), August 1944.

damaged sacristy floor bricks were replaced and bricks were laid on the nave floor between the altars.⁵¹

In February 1946 Charlie Steen inspected the mission and found it in a disturbing condition. Keystone bricks in the west and south arches of the belfry were loose. Bricks in the west arch had slipped. They needed replacing and repointing, he wrote. Exterior plaster continued to decay. On the west wall, pits and small holes in the surface allowed rain to enter. Much of the original plaster on the north mission wall was loose. The columns on the mission's facade needed attention. Inside the mission Steen found the bell tower steps in need of repair.⁵²

Dale King arrived on June 4, 1946, to oversee many of the required repairs. Weathered exterior wall holes were patched with both lime mortar and stabilized earth mortar. The work crew replaced missing brick facing on the south side of the sacristy exterior with modern brick and plaster. They used a stabilized earth mortar to cover temporarily 225 square feet of the sacristy's east and north exterior. King "tastefully" blended the repairs to match the weathered appearance of the church. His crew replaced the missing portions of the lower facade columns and their bases. While inspecting the nave roof King discovered that the beam ends of Pinkley's roof had almost rotted away. Many beams gave only two or three inches of support.⁵³

In May 1946 custodian Earl Jackson reported in May 1946 that the roof flashing on the north end of the nave had put a downward pressure on that exterior wall above the sanctuary arch entrance. It occurred, Jackson felt, because that arch, which was weak, had settled. (In October 1934 George Boundey mentioned that a crack in the east pillar of the arch which supported the sanctuary dome had widened. No mention was ever made that the crack was repaired.) The settling caused a horizontal crack about twelve feet long and three-fourths inch wide completely through the plaster. Jackson had the crack filled with

51. *Ibid.*, October, November 1944.

52. Charlie R. Steen, "Memorandum for the Associate Regional Director," March 5, 1946, National Park Service Central Classified File, 1933-1949, Record Group 79, 740.03, National Archives.

53. *Southwestern Monuments Monthly Reports* (Tumacacori), June 1946; Earl Jackson, "Mission Stabilization Subsequent to July 1947," p. 1, typescript in the Western Archaeology Center. To make the temporary stabilized earth mortar for the sacristy wall, King used ten shovels of sand, five shovels of screened adobe soil, and two shovels of cement. His lime mortar formula consisted of three parts sand to one part lime. For the column bases he mixed three shovels sand, one shovel cement, and one-third shovel of lime putty. The lime was only partly hydrated hot ground, slaked the day before its use.

cement and gravel, and the surface sealed with brushed-on concrete.⁵⁴ The weakness of this arch and the decaying roof probably accounted for the cracks which appeared on the north end of the nave roof. Leaks continued to appear on the north end of the nave roof in July, August, and September 1946. Each time, Earl Jackson had the perforations caulked.⁵⁵

Compounding problems, bats again began to inhabit the mission in April 1946. Superintendent Jackson sprayed the sacristy, nave, and baptistry with a solution of naphthalene flakes in an effort to discourage the bats from entering, but it worked for only a few days. He concluded that this treatment was a waste of time. A greater number of bats appeared in August and September. Droppings on the nave floor became a problem. In October the bats caused several portions of the mission's interior plaster to fall. Bats continued as a problem into 1949, causing plaster discoloration and more small pieces to fall.⁵⁶

Despite extensive repair work, the mission continued to deteriorate. In February 1947 an original part of a *canale* fell from the north side of the mission. Superintendent Jackson reported that the entire mission surface needed to be treated with something to stabilize and waterproof the walls. In May, in lieu of an adequate stabilizing and waterproofing material, Jackson used cement-stabilized soil to seal the broken areas of original plaster on the mission walls, particularly on the north end of the mission and including the cemetery wall. He also filled old vandal holes in the walls. While he worked, the Tucson Roofing and Supply Company installed a new nave roof.⁵⁷

On June 30, 1947, Al Lancaster and Charlie Steen arrived at the monument to plan and execute a stabilization program. In July and August they patched original plaster on the north end of the mission, the north second story, and south side of the bell tower. Lancaster covered a large break in the northwest lower corner on the north face of the bell tower. He repaired several substantial cracks in the upper third of the south side on that tower. This south wall also had been badly weathered to a height of three feet above the foundation.

54. [Earl Jackson], "Tumacacori Diary," May 22, 1946, Records of the National Park Service, Record Group 79 (55-A-269) 99493, Regional Archives and Record Center, Denver, Colorado; *Southwestern Monuments Monthly Reports* (Tumacacori), May 1946; Custodian's Monthly Report, Tumacacori, October 25, 1934.

55. *Southwestern Monuments Monthly Reports* (Tumacacori), July, August, September 1946.

56. [Jackson], "Tumacacori Diary," May 9, 1946; *Southwestern Monuments Monthly Reports* (Tumacacori), August, September, October 1946; "Superintendent's Annual Report, Fiscal Year 1948," National Park Service Central Classified File, 1933-1949, Record Group 79, 208.11, National Archives.

57. *Southwestern Monuments Monthly Reports* (Tumacacori), February, May, June 1947; "Superintendent's Annual Report, Fiscal Year 1947," National Park Service Central Classified File, 1933-1949, Record Group 79, 208.11, National Archives.

Lancaster covered it with two to three coats of plaster. He used metal lath to hold the plaster on the larger bell tower areas that he repaired. In addition, his work crew removed Pinkley's modern frame from the baptistry window and restored it to its original appearance. Upon detaching the frame, Lancaster found the window's arched roof ended two feet from the outer wall. He pointed plaster cracks on the upper facade and the weak interior core of the baptistry dome. He found the worst breaks on the facade were over the choir loft window and at the top corner of the eastern upper column. A "deck" of lightweight concrete was used to replace the mission floor/roof between the second story of the bell tower and the belfry. It contained a trapdoor entrance to the belfry. Lancaster replaced one missing column of the sanctuary dome lantern with one of cement and added a new wooden cross atop that lantern. After Lancaster and Steen departed in early August, Earl Jackson continued work by pointing weathered holes on the mission's west exterior wall and making large patches on the north side. He also mended cracks in the sacristy roof with a mixture of plaster and cement. When he finished, Jackson considered that roof permanently stabilized and weatherproofed for two years.⁵⁸

In September 1947 Superintendent Jackson made further exterior mission wall repairs. He replaced the missing sections of plaster along the top of both the east and west nave walls and portions of the upper north and south walls. Those areas on the nave walls which Jackson plastered were the portions that Pinkley had built to the original level in 1921. Pinkley and succeeding custodians had left these adobe brick exposed. In large uncovered areas, Jackson first nailed lath to the adobe and covered it with a scratch plaster coat over which he applied a thin, colored, finish coat. On the many small patches he made, Jackson used only the color coat.⁵⁹

Earl Jackson focused his efforts on the sacristy exterior in October 1947. Dale King had covered 225 square feet of that structure's north and east walls with a temporary stabilized earth mortar coat in June of the previous year. Jackson found King's work still strong, so he left it in place. He covered the

58. *Southwestern Monuments Monthly Reports* (Tumacacori), July, August, September 1947; "Superintendent's Annual Report, Fiscal Year 1948," National Park Service Central Classified File, 1933-1949, Record Group 79, 208.11, National Archives; James A. (Al) Lancaster, "Stabilization Report at Tumacacori, 1947," typescript in the Western Archaeology Center. Lancaster used a scratch coat, final paint coat, and wash coat for his repairs. The formula for the scratch coat consisted of three parts sand, three-fourths part hydrated lime, and one-fourth part cement. The paint coat contained three ounces burnt umber and six ounces yellow ochre mixed to a paste with water and added to three pounds of processed lime putty and two gallons of water. The wash coat, applied after the paint dried, consisted of red clay and water to make a muddy water.

59. *Southwestern Monuments Monthly Reports* (Tumacacori), September 1947; Jackson, "Mission Stabilization Subsequent to July 1947," p. 3. Earl Jackson's scratch coat contained six parts clean screened sand, one part hydrated lime, and one-half part Portland cement. The colored finish coat consisted of six quarts sand, one quart hydrated lime, one pint Portland cement, four ounces yellow ochre, two ounces red cement color, and one-half level teaspoon burnt umber.

remaining areas of the north and east walls with his scratch and colored finish coats. Again he used metal lath to hold the plaster on large exposed areas.⁶⁰

Repairs continued into 1949. In March of that year Earl Jackson made minor mends on the mission walls. Three months later, in June, the Tucson Roofing and Supply Company arrived to attend to a nave roof leak which had been detected in 1948. In September 1949 Jackson widened the steps between the sacristy and cemetery with more brick set in concrete.⁶¹

Original plaster continued to suffer damage. In April 1949 several square feet broke into pieces when it fell from the east end of the south corridor wall leading to the patio area. Lichens harmed the plaster on the *canales*. Only two of these downspouts retained an original thin plaster finish. Superintendent Jackson tried to kill the lichens with a copper sulfate solution. He also suspected a leak in the sacristy roof since a small piece of interior plaster fell from that room in August 1949.⁶²

Rutherford J. Gettens and Charlie Steen arrived at the monument in June 1949 to make a detailed study of the mission plaster and frescos. Two years before their appearance, Earl Jackson had expressed concern about the fresco and plaster deterioration at Tumacacori. His distress resulted in a two-year search for an individual skilled in preserving and restoring frescos. Finally, Rutherford J. Gettens of the Fogg Museum of Art at Harvard University agreed to inspect the mission and make preservation recommendations.⁶³ Gettens found that interior plaster, particularly on the sanctuary dome, had continuously peeled. In his report he concluded that the mission interior needed to be thoroughly cleaned and then sprayed with light vinyl acetate. This substance, Gettens thought, would fix surfaces and prevent plaster chalking and paint fading. He also suggested that broken plaster edges be pointed. Steen returned to the mission on October 15, 1949, to execute the recommendations. After an area had been cleaned, he sprayed it with vinyl acetate. He found the soot and grime on the

60. *Southwestern Monuments Monthly Reports* (Tumacacori), October 1947.

61. *Ibid.*, March, June, September 1949.

62. *Ibid.*, April, August 1949.

63. M. R. Tillotson, "Memorandum for the Director of the National Park Service," September 26, 1947, National Park Service Central Classified File, 1933-1949, Record Group 79, 704.03, National Archives; Ned Burns, "Memorandum for the Chief Historian," November 20, 1947, *ibid.*; Charles W. Porter to Dr. Fiske Kimball, November 28, 1947, *ibid.*; Kimball to Charles W. Porter, December 2, 1947, *ibid.*; Newton B. Drury to George Stout, June 16, 1948, *ibid.*; Stout to Drury, June 22, 1948, *ibid.*; Rutherford J. Gettens to the Director of the National Park Service, July 14, 1948, *ibid.*

sacristy interior almost impossible to remove. In addition to the interior work, Steen's crew patched some holes in the mission walls.⁶⁴

Steen's work also included excavation south of the westernmost cistern in front of the mission. Several inches below the surface of a low mound he found some poorly consolidated lime and gravel and two low piles of fired-brick dust. He believed the mission builders had mixed their lime mortar and stacked their brick on that spot.⁶⁵

By March 1950 Earl Jackson found that the temporary coat of stabilized earth mortar which Dale King had placed on a 225-square-foot area of the sacristy in 1946 had begun to deteriorate. He removed this mortar and replaced it with his sand-lime-cement scratch coat over metal lath. In April he added his finish coat. Jackson also noted that the original plaster over the sacristy's east entrance had weakened. To give this plaster support, he replaced the long-missing head timber over the entrance.⁶⁶

During routine maintenance on the mission's exterior walls in April 1950, Jackson found that many original plaster areas continued to become powder-soft and fall. As a result moisture could not be prevented from entering the mission's walls. Jackson concluded that patching only forestalled the disintegration of the original plaster areas. By July 1951 he decided the original plaster on the mission's west exterior wall had become so rotten that patching was impossible. He advocated replacement with his sand-lime-cement scratch coat. Meanwhile, Jackson experimented on selected areas of that wall's original plaster with two coats of a Horn Company product--Dehydratine Number 2A, colorless. This special ingredient evidently failed as a remedy, for in April 1952 workmen began to strip the plaster from the west exterior mission wall. They removed all the plaster except that placed on the upper wall area in 1947, some concrete patches which were too strong to remove, and the concrete *canales*. Some patches were made to these *canales*. By late July the workmen had replaced the stripped plaster with Jackson's scratch coat formula over galvanized metal lath. On this covering they applied Jackson's finish coat. With this work completed, all of the mission's west exterior wall had a reconstructed concrete plaster coat held by metal lath.⁶⁷ Figure 31 shows the mission in November 1952 after Jackson's replastering work.

64. *Southwestern Monuments Monthly Reports* (Tumacacori), June, October, November, December 1949; Charlie R. Steen and Rutherford J. Gettens, "Tumacacori Interior Decorations," and Rutherford J. Gettens, "Report on Inspection and Recommendations for Treatment of Plaster Walls and Wall Paintings," *Arizoniana* 3 (Fall, 1962): 7-33.

65. *Southwestern Monuments Monthly Reports* (Tumacacori), December 1949.

66. *Southwestern Monuments Monthly Reports* (Tumacacori), March, April 1950.

67. *Ibid.*, April 1950; July, September 1951; April, May, July 1952; Earl Jackson, "Maintenance and Rehabilitation Stabilization of Historic Structures," (continued)



Figure 31

November 22, 1952, photograph, #58,119, Western Archaeology Center,
Tucson, Arizona. Taken by Earl Jackson.

Toward the close of fiscal year 1950 Earl Jackson directed extensive patch-work on the two-story wall section which formed part of the east cemetery wall. In addition, contracts were completed for the installation of windows in the upper openings of the mission and metal frame screen doors at ground level. By July these openings were covered.⁶⁸

On July 19, 1950, approximately one square foot of original plaster fell from the north interior sacristy wall. Superintendent Jackson found more plaster about to fall. He scraped the deteriorated edges and pointed them with his sand-lime-cement mixture. Jackson gave similar treatment to the upper part of the sacristy's interior south wall. Part of the deteriorating plaster problem in this room probably stemmed from a roof leak, for in February 1951 Jackson applied four square yards of his sand-lime-cement formula to seal holes in the northwest corner of that roof. This roof required additional repairs for leaks in December 1952.⁶⁹

Weathered cavities continued to appear in the exterior mission walls. In February 1951 and again in July of that year, Jackson sealed these holes. In the latter month he also filled a large hole in the south interior wall of the baptistry beneath the window with adobe brick and mud mortar. Pinkley and his successors had never restored this area below the window. Jackson continued his maintenance work in October 1951. He replaced the worn top bricks in the sacristy-sanctuary steps and coated all the modern brick steps with a Horn Company product, Duocrex.⁷⁰

The weather continued to exact its toll on the mission. Rain in August 1951 washed away small areas of original plaster and adobe wall from the corridor east of the sacristy. In March 1952 wind and rain peeled part of the facade's fragile painted plaster veneer above the entrance arch. Almost to the day one year later, rain again damaged the area over the entrance. It caused

67. (Continued) August 2, 1952, Construction, Program Correspondence (Tumacacori) August 1941-February 25, 1954, Records of the National Park Service, Record Group 79 (62-A-566) 62886, Regional Archives and Record Center, Laguna Niguel, California. Jackson purchased the following materials for his project to re-cover the west exterior wall: 222 yards of 3.4 weight galvanized metal lath; twenty sacks of hydrated lime; twelve sacks of Portland cement; one keg of twenty-penny nails; forty-one pounds of thirty-penny nails; five pounds of color hardener #2 Richetron yellow; five feet of one-fourth-inch mesh hardware cloth, thirty-six inches wide; six board feet of two-by-six pine lumber, six feet long; and forty-three board feet of two-by-four pine lumber eight feet long.

68. *Southwestern Monuments Monthly Reports* (Tumacacori), May, July 1950.

69. *Ibid.*, July 1950, February 1951, December 1952; Jackson, "Mission Stabilization Subsequent to July 1947," p. 4.

70. *Ibid.*; *Southwestern Monuments Monthly Reports* (Tumacacori), February, July, October 1951.

one square foot of red painted plaster to fall. This plaster, a part of the original recessed, painted decoration band, could not be salvaged. The March 1952 storm also contributed to the loss of a large area of original plaster along the top of the two-story wall on the cemetery's east side. Another two square feet fell from this area in April 1953. Jackson patched some of the weathered holes in December 1952, including those on the mission's north side and the lower west *canale* on that same wall.⁷¹

Earl Jackson reported in April 1953 that a crack in the sanctuary dome lantern had widened. The crack, which began where the missing column had been replaced in 1947, made the whole small dome loose.⁷² It evidently was not repaired until March 1961.

The deteriorating condition of the corridor east of the sacristy prompted a decision to construct a covering over it. In May 1953 Young Steel Builders Incorporated of Tucson won the contract to build a freestanding metal shelter above the exposed adobe walls. After much prodding, that firm finally completed the project in September.⁷³

Stabilization and repair projects began again during the first half of 1954. In January of that year Superintendent Ray Ringenbach mended leaks in the nave roof. Three months later, in April, he added tar and gravel on part of that roof. Ringenbach also applied new plaster to several areas of the mission's west exterior wall. A March 1954 inspection showed a small area of the nave wall had begun to crumble. Superintendent Ringenbach did not indicate the location of the area, but presumably it was on an interior wall. He tentatively ascribed the cause of the crumble to salt erosion.⁷⁴

A two-year cemetery wall stabilization program began in May 1954. Work started with the interior wall where metal lath was applied to the adobe at the base and cap. It was then plastered using Earl Jackson's formula. In June 1954 the interior wall was completed. Stabilization of the exterior wall continued through June 1956. The same process used on the inside of the wall was applied to the outside. The program included strengthening both the interior and exterior original plaster.⁷⁵

71. *Ibid.*, September 1951; March, December 1952; March, April 1953.

72. *Ibid.*, April 1953.

73. Ray B. Ringenbach, "Project Completion Report," October 1, 1953, Records of the National Park Service, Record Group 79 (62-A-566) 62886, Laguna Niguel Regional Archives and Record Center; *Southwestern Monuments Monthly Reports* (Tumacacori), May, September 1953. Total cost of the covering was \$1,428.78.

74. *Ibid.*, January, March, April 1954.

75. Ray B. Ringenbach, *A Short History of Tumacacori National Monument*, (1955), p. 37, typescript in the Western Archaeology Center; *Southwestern Monuments Monthly Reports* (Tumacacori), May, June 1954; June 1956.

Experiments to discover a waterproofing and stabilization chemical began in 1935 with the use of vinyl resin. Since this mixture proved unsuccessful as a permanent preservative, Earl Jackson, in the latter 1940s and early 1950s, turned to cement stabilized plaster for exposed exterior adobe areas. Original plaster, however, continued to deteriorate. During one interlude in that period, Charlie Steen did use another vinyl compound, vinyl acetate, in an effort to preserve and bond original plaster to the mission's interior walls. It, too, proved ineffective. In 1954 Gordon Vivian experimented with silicone as a waterproofing chemical. Vivian treated the vaulted sacristy roof with a silicone product called Daracone. It appeared to hold up during the 1955 rainy season. As a result Vivian used this product when he returned in March 1956 to attend to the erosion problem at the base of the corridor walls east of the sacristy and the water difficulty in the mission walls. Vivian sprayed Daracone on the base of the corridor walls and on the west mission wall. In addition he again treated the vaulted sacristy roof with silicone.⁷⁶ This chemical, however, did not provide the answer to a permanent stabilization solution, for it required reapplication every few years.

In addition to the silicone treatment, other repairs were made to the mission during the 1956-58 period. Gordon Vivian made plaster mends to the mission walls in March 1956. Further repairs were made in March and June 1957 and to the corridor east of the sacristy in April 1958. The nave roof was retarred in June 1956. Brick floors were sealed in March 1957 and resealed in April of the next year.⁷⁷

Joel Shiner arrived at the mission in March 1959 primarily to repair the vaulted sacristy roof. Since previous attempts to repair and waterproof the roof had failed, he decided to remove all the plaster and cover it with a lightweight mixture of cement, perlite, lime, and sand. Shiner nailed metal lath to the roof before he spread the compound on it. He gave the new roof cover two coats of latex paint on which he sprayed silicone.⁷⁸ While at the monument, Shiner patched the mission's west wall and sprayed it again with silicone (Gordon Vivian first used this substance on that wall in 1956). He repaired the eroded plaster edges under the entrance arch with Rock Hard putty. In addition he put

76. *Ibid.*, September 1955; March 1956; Joel Shiner, "Maintenance Stabilization at Tumacacori National Monument, 1959," p. 3, typescript in the Western Archaeology Center; "Archaeology and Stabilization Overview of Tumacacori National Monument," p. 27.

77. *Southwestern Monuments Monthly Reports* (Tumacacori), March, June 1956; Superintendent's Monthly Reports, March, April, June 1957; April 1958.

78. Shiner, "Maintenance Stabilization at Tumacacori National Monument," pp. 1-5. Shiner's sacristy roof mixture consisted of one-half cubic foot of Portland cement, three cubic feet of perlite, one-half cubic foot of sand, and one-fourth cubic foot of lime.

a large patch on the baptistry window sill, cleaned the *canales*, and mended several areas of the west nave wall offset.⁷⁹

The paint which Joel Shiner applied to the sacristy roof cracked and peeled by the next year. Roland Richert inspected this roof in March 1960 and decided that Shiner had not allowed the roof covering to dry properly before he painted it. Cracks had also developed, he thought, because temperature changes had caused the metal lath to contract and expand. Richert removed the old paint and repainted the roof with one coat of a cement bonding paint.⁸⁰

In May 1960 Roland Richert experimented with Daraweld on selected areas of *canale* adobe. Rain had soaked into the old adobe on the downspouts, causing it to flake. He evidently wished to ascertain if Daraweld was superior to silicone as a waterproofing compound. By July Superintendent Michael Becker thought it proved its value and advocated covering all the *canales* with Daraweld.⁸¹

Becker discovered a nave roof leak in October 1960. Inspection revealed that approximately fifteen feet of roofing paper had shrunk and pulled apart. The paper was replaced.⁸²

Roland Richert returned to the monument on March 23, 1961, to continue stabilization work. He first attended to the shaky sanctuary dome lantern. Two columns of that lantern had broken and its dome had almost split in half. The columns were grouted, and the upper lantern dome moulding was rebuilt with reinforced steel and covered with plaster. With the lantern mended, Richert removed loose and cracked cement, flaking original mortar, and disintegrating roofing tar from the sanctuary dome and apron. In its place he applied a light waterproofing grout consisting of sand, cement, Daraweld, and water. Richert also repaired a short vertical section of broken moulding brick on the southeast

79. Superintendent's Monthly Report, March 1959; Shiner, "Maintenance Stabilization at Tumacacori National Monument," pp. 5-7. Shiner's patching formula contained twelve quarts fine sand, two quarts lime, two and one-half quarts Portland cement, six ounces yellow mortar color, three ounces red mortar color, and one-half ounce burnt umber mortar color.

80. Roland Richert, "Maintenance Stabilization Sacristy Roof Tumacacori National Monument 1960," pp. 2-5, typescript in the Western Archaeology Center; Superintendent's Monthly Report, March 1960. Richert's cement bonding paint consisted of eight pounds of Sears Roebuck Spanish White paint (catalogue number K1508K), five ounces burnt umber, two ounces sunset orange, and one ounce yellow. He added that mixture to one pint Daraweld and three pints of water. Daraweld, a high polymer resin internally plasticized, was marketed by W. R. Grace and Company, Dewey and Almy Chemical Division, San Leandro, California.

81. Superintendent's Monthly Report, Tumacacori, July 1960.

82. *Ibid.*, October 1960.

pier of the belfry. In addition he raked, grouted, and pointed severely eroded bricks in the four belfry arches.⁸³

Mission repair work continued periodically through the 1960s. The sacristy roof was again painted in the latter part of 1966. The nave and bell tower roofs received a flood coat of hot tar in May 1969. The Johnson-Vose Company of Tucson won the contract to patch mission plaster and paint the sanctuary dome in June 1969. Their work crew completed the task in July of that year.⁸⁴

A major stabilization program began in 1970 with the objectives of eliminating the entrance of water in the mission walls and patching deteriorating wall areas. In January a test trench two feet wide and three feet deep was dug along the exterior east and west nave walls in an effort to determine the source of moisture in those walls. Dampness in the soil began at eight inches and continued below the foundation. No immediate decision, however, was made as to whether this moisture was the source of water in the nave walls. Instead, the trench was left open for further investigation.⁸⁵ A ruins stabilization planning conference in February decided that moisture in the nave walls came from the capillary action of groundwater outside the walls.⁸⁶ In May additional groundwater tests were made. Roland Richert used an auger to dig holes eight to ten feet deep on both sides of the mission. These holes revealed ground moisture which extended to buried walls that paralleled the church. He found no dampness beyond these underground walls. This condition led him to conclude that underground water did not enter the walls. Instead, rainwater from the mission roof became trapped in a narrow perimeter along the mission and seeped into the nave walls by capillary action. This circumstance could be rectified, he felt, by correcting drainage and sealing wall foundations with plastic.⁸⁷

On August 10, 1970, Martin Mayer and Thomas Caperton arrived at the monument to execute Richert's recommendation. Their work crew exposed the mission foundation along both nave walls, the east and north sides of the bell tower, and the south and east skirt of the sacristy. After they repaired and plastered the foundation, the workmen applied an elastometric membrane called Thiokol to the dry surface. As a final measure they glued a twenty-millimeter-thick

83. Richart, "Maintenance Stabilization Tumacacori National Monument 1961," pp. 1-3, typescript in the Western Archaeology Center; Superintendent's Monthly Report, Tumacacori, March, April 1961; "Archaeology and Stabilization Overview of Tumacacori National Monument," p. 28.

84. Mawson and Holden, "Tumacacori National Monument: Its Origin, Development and Administration," (1970), p. 73; Superintendent's Log of Significant Events, Tumacacori, May, June, and July 1969; "Archaeology and Stabilization Overview of Tumacacori National Monument," p. 30.

85. Superintendent's Log of Significant Events, Tumacacori, January 1970.

86. *Ibid.*, February 1970.

87. *Ibid.*, May 1970.

polychloride vinyl liner to the east and west nave foundation and buried it in apron fashion for a distance of fifteen feet from the mission.⁸⁸

Once the dampproof liner was laid, work turned to the mission exterior. The crew painted a resin base sealer called Hydrozo on the top of the protruding west foundation. The west wall *canales* were sprayed with a silicone solution, while those on the south sacristy wall were grouted with tinted cement. Since no waterproofing chemical which gave permanent protection against plaster and adobe deterioration had been found, Mayer and Caperton returned to the resin and silicone sealers which afforded only temporary preservation. Continuing with the work, they applied plaster to some areas on the lower portion of the bell tower's north side. Workmen removed old cement from the base of the east and south sacristy walls and replaced it with waterproofed, tinted cement. Deteriorated areas on the mission walls were patched with mortar mixed from Joel Shiner's 1959 formula (see footnote 79). Inside the mission the two men capped the sanctuary altar with soil/cement adobe bricks set in tinted concrete and made minor mends on the sanctuary walls.⁸⁹

Despite the elaborate effort to divert water from the nave walls, moisture continued to exist in them. In June 1971 Superintendent Ray Ringenbach decided to test the moisture content of the soil under the mission floor to determine if water was trapped inside the church. He sank five holes with an eight-inch-diameter posthole digger in various nave and sacristy locations (Figure 32). Each hole revealed only dry dirt.⁹⁰ Under these circumstances, Al Schroeder of the Southwest Regional Office and Reid Malin, the acting general superintendent of the Southern Arizona Group, decided to test the moisture in the mission's adobe walls. They hired Daniel Evans, a soils physicist from the Hydrology Department at the University of Arizona, to make the tests.⁹¹

In October 1971 Evans tested the mission walls for moisture. He drilled the test holes in eight locations on the interior and exterior mission walls (Figure 33). The southernmost wet spot on the west interior nave wall he

88. Martin T. Mayer, "Stabilization Report Tumacacori 1971, Mission, Granary, and Convento," p. 6, typescript in the Western Archaeology Center; Superintendent's Log of Significant Events, August, October 1970; "Archaeology and Stabilization Overview of Tumacacori National Monument," p. 31.

89. Mayer, "Stabilization Report Tumacacori 1971," pp. 7, 12, 14-15, 135, 140-43; "Archaeology and Stabilization Overview of Tumacacori National Monument," p. 33.

90. Superintendent's Log of Significant Events, Tumacacori, February 1971; Ray Ringenbach to General Superintendent, SOAR, June 30, 1971, Historic Preservation Division files, Denver Service Center, National Park Service.

91. Al Schroeder to the General Superintendent, Southern Arizona Group, July 13, 1971, *ibid.*; Reid Malin to the Director of the Southwest Region, August 2, 1971, *ibid.*; Al Schroeder to the Director of the Western Service Center, August 6, 1971, *ibid.*

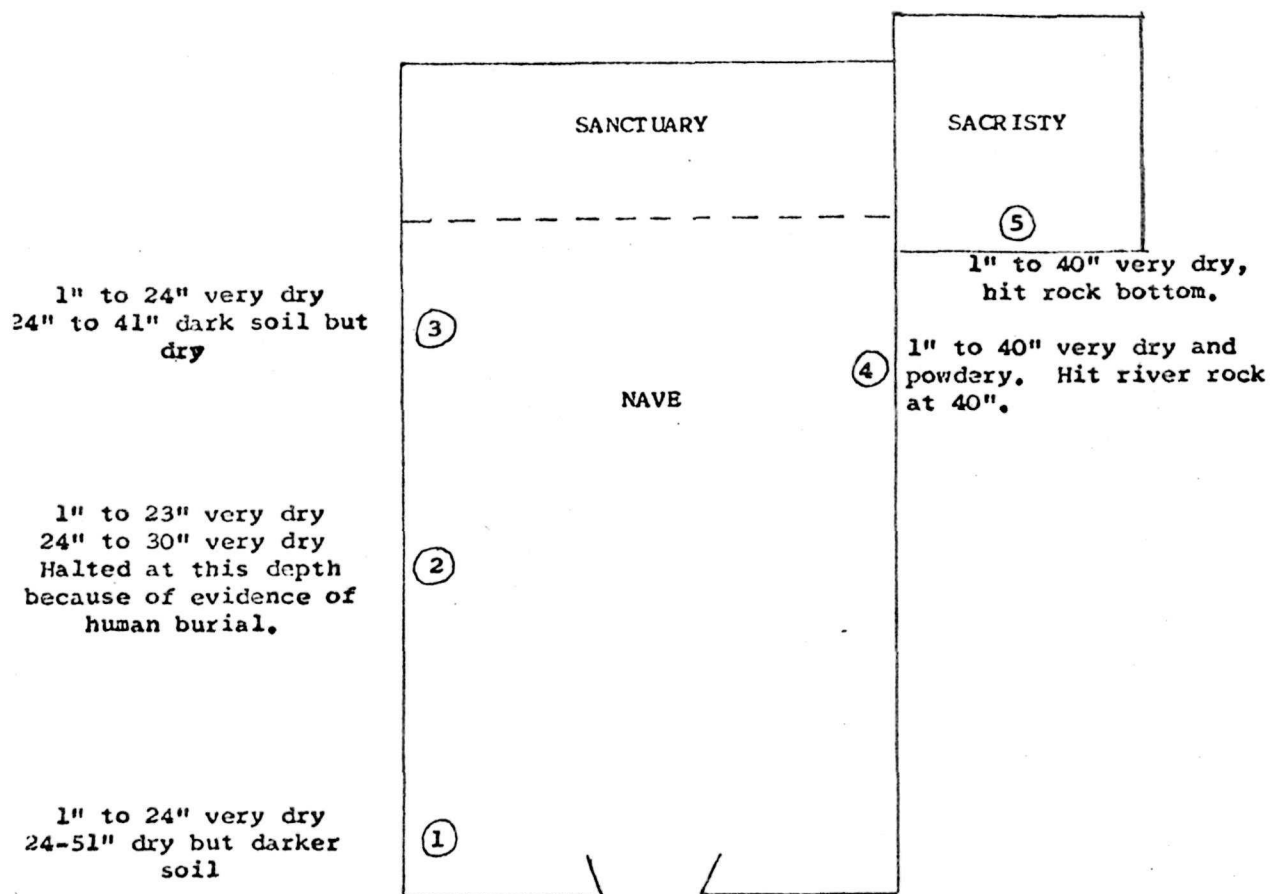


Figure 32

Mission interior moisture test holes, June 1971.

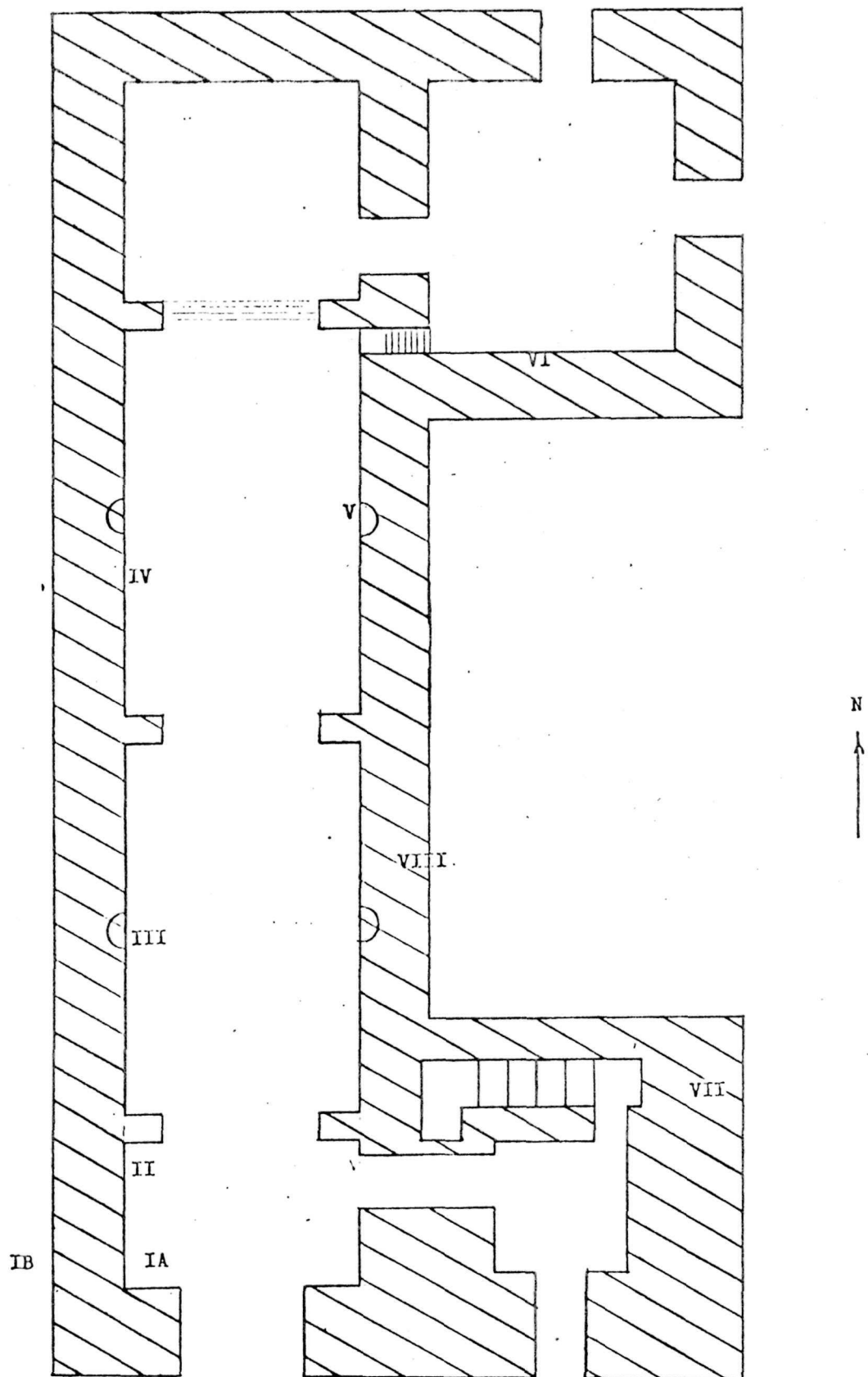


Figure 33

Location of Daniel Evans's moisture test holes.

designated IA. Here Evans drilled six holes. The first he located at the center of the wet area a distance of three feet six inches above the floor and twenty inches from the south wall. He found more moisture content in this hole than in any other he drilled. Water in the adobe of the first hole increased to a high of 20.4 percent between a depth of eighteen to twenty-two inches. Beyond that point it decreased. The second hole, located forty-four inches above the first, yielded a high of 9 percent moisture at ten to twelve inches. He sank the third hole eighteen inches below the first. Here the highest water content measured 10.6 percent at a depth of eight to nine inches. Evans situated his fourth perforation in the corner south of the first hole. He found the highest moisture content, 14 percent, at a depth of between fourteen to sixteen inches. At floor level beneath the first hole he drilled number five to a depth of only two inches and found 7.1 percent water. (It would seem that this hole should have been longer to obtain evidence of moisture content.) After a rain, Evans bored his last hole in area IA to a depth of eight inches one foot south of the first perforation. At that depth it yielded the highest moisture content of 14.1 percent.⁹²

Directly opposite hole one of area IA on the mission exterior, Evans designated IB. Here he perforated the wall to a length of two feet and found the highest moisture ratio, eleven percent, between fourteen and sixteen inches.⁹³

For area II Evans chose a dry section on the west interior wall midway between the south and middle wet spots. His single hole showed 6.1 percent as the highest water content at a depth of between three to six inches. Evans felt the moisture ratio of this hole could be used as a comparison to determine excess water in other areas.⁹⁴

Evans designated the middle wet spot on the west interior nave wall as area III. He sank four holes. The first was 122 inches above the floor. At a depth between 6 to 8 inches he discovered the greatest moisture of 5.8 percent. Evans located the second hole 50 inches above the floor. Drilling to a length of 11 inches he found the highest moisture ratio of 9 percent. Holes three and four were sunk after a rain. Both were shallow at a depth of 2 and 3 inches respectively. Number three yielded 5.8 percent moisture and four contained 5.7 percent. Because the water proportion was relatively low in this area, Evans decided the dark color was a surface stain. The general appearance of the wall in area III led him to believe that it had held more water in the past and had slowly dried to the moisture content he found.⁹⁵

92. Daniel D. Evans, "Wall Deterioration at Tumacacori National Monument," Research Report Number One, November 1, 1971, pp. 5-6, typescript in Historic Preservation Division files, Denver Service Center; *Daily Citizen* (Tucson), January 25, 1972. See Appendix for moisture content table.

93. Evans, "Wall Deterioration at Tumacacori National Monument," pp. 5-6.

94. *Ibid.*, pp. 2, 7.

95. *Ibid.*, p. 7.

At the north wet spot on the west interior nave wall, area IV, Evans drilled one twelve-inch hole forty-two inches above the floor. He found the highest moisture, 7.4 percent, between ten and twelve inches.⁹⁶

Evans located area V by the north altar on the east interior nave wall. His first hole, twenty-two inches above the floor just south of the altar, penetrated only two inches. At that depth he found 6.9 percent moisture. The second hole was drilled over the altar. Evans measured 9.6 percent water at the furthest depth of nine inches.⁹⁷

Evans located only one area outside the nave. He placed area VI near station eighteen on the south interior sacristy wall. One hole, drilled to two inches, yielded 5.2 percent moisture.⁹⁸

Moving again to the exterior, Evans located area VIII near the south end of the east baptistry wall. His only hole penetrated to six inches and revealed 3.6 percent water. The final area, VIII, was also on the east exterior just north of the south window on the nave wall. Bored to four inches, the sole penetration showed 6.4 percent moisture. Both locations VII and VIII contained dampness only in the surface plaster.⁹⁹

Evans did not determine the source of the excess water in the walls, but suggested two possibilities. Either the water had entered the walls in the past and had been drying or it came from an intermittent source under the foundation or perhaps the outside wall during rainfall.¹⁰⁰

Measurement of the salt content in hole one of area IA showed 80,500 parts per million, a significant increase over a 1954 measurement of 18,000 parts per million. Martin Mayer, however, concluded in a side note on Evans's report that the salt content of the adobe brick was the same as the surrounding agricultural soil.¹⁰¹

To speed the drying process, Evans advocated forcing hot air into the walls. He experimented with this process in hole one of area IA. Periodically over an eleven-day interval in October, he induced air into a 1-1/2-inch hole drilled to a twenty-eight-inch depth. A sample at the end of that time showed a

96. *Ibid.*

97. *Ibid.*, p. 8.

98. *Ibid.*

99. *Ibid.*, pp. 2, 8.

100. *Ibid.*, p. 2

101. *Ibid.*, p. 9.

reduction of 7.2 percent moisture. Evans therefore concluded that air flow in properly placed holes could speed drying.¹⁰²

Daniel Evans returned in November 1971 to make subsequent experiments with forced-air drying. A sample from hole one of area IA showed the moisture content had returned almost to its original level in his eight-day absence. Despite this indication, he drilled nine new drying holes in area IA to about the center of the wall. Evans induced air into the holes over a period from November 1, 1971, to March 31, 1972. He also sporadically heated the exterior nave wall opposite the holes from October 23 to January 18, 1972. In some holes the moisture dropped significantly, but very little in others. He concluded that high winter humidity caused very slow drying. Evans averaged the moisture reduction of all nine holes and decided that the wall had slowly dried during the forced-air period.¹⁰³ No measurements were taken, however, after March 31, 1972, to determine if the water content had again risen.

Evans also sought to measure moisture under the church floor and outside the mission. From January 8 to March 31, 1972, he took five readings from the two holes he drilled. He placed one four-foot hole in the mission floor into which he inserted a two-inch pipe. Here he measured soil moisture at the two- and four-foot levels. He found the water content relatively low, especially at the two-foot depth. Moisture did rise slightly at the four-foot level during the measurement period, but errors in the later readings could have produced faulty results, he thought. The second hole was dug six feet deep beyond the plastic apron west of the mission. Evans monitored soil moisture at the two-, four-, and six-foot levels. Initially, the results reflected higher surface moisture, but this gradually decreased to near the amount found at lower depths. Evans felt the higher surface readings resulted from winter rain. After the rainy season, evaporation lowered the surface moisture, he concluded.¹⁰⁴

Since Evans never located the source of the nave wall moisture, his limited forced-air drying experiment could hardly have been expected to solve the problem. Groundwater was probably the most unlikely origin for the wall dampness since test holes contained relatively dry soil. Some surface water which drained from the nave roof could have entered the foundations. Most likely the moisture which entered the walls came from leaks in the nave roof. These leaks began in 1928 and appeared with increasing frequency until the roof was replaced in 1947. Before this accumulated moisture could evaporate, however, Earl Jackson covered the entire west nave wall and large areas of the east wall with almost impermeable concrete plaster and his successors sprayed silicone waterproofing solutions on these walls. All of the measures taken to keep moisture from entering

102. *Ibid.*, p. 3; "Archaeology and Stabilization Overview of Tumacacori National Monument," p. 33.

103. Daniel D. Evans, "Wall Deterioration at Tumacacori National Monument," Research Report Number Two, April 24, 1972, pp. 2-5, typescript in the Historic Preservation Division files, Denver, Colorado.

104. *Ibid.*, pp. 6-7.

the walls also prevented the accumulated water from evaporating. Had the wall been covered with the same type of plaster that the Spanish priests used, moisture could have evaporated.

Another extensive interior and exterior stabilization program began in May 1972 under Sam Henderson's direction. Henderson attempted to prevent separation of the original plaster from the walls in the nave, sanctuary, sacristy, and baptistry interiors by grouting white cement through and over a wire mesh ribbon secured to the lower plaster edges. He also repaired the bell tower stairs with the white cement. Henderson painted the east and west exterior walls with a tinted wash containing a bonding agent to make the wash hold. This process accomplished two ends: it filled many surface cracks and made the walls one color. On the facade Henderson mended the westernmost lower column by grouting the cracks at the joint of the column and wall. He removed the seal coat along the entire length of the west wall ledge. In its place he put a twenty-millimeter-thick plastic liner set in a layer of tinted warmtone cement. Fired adobe bricks were positioned on the ledge cap and plastered with white cement. In a trench near the center of the wall Henderson laid a perforated plastic pipe in pea gravel to remove accumulated roof water. He repaired the base of the north exterior sanctuary wall, replaced old patches, and pinned a large bubble in the original plaster. Henderson grouted small holes on the exterior north, east, and south bell tower walls with tinted warmtone cement and applied a wash coat to earlier patches. He placed soil-cement adobe bricks in the space of the north corridor wall where it joined the sacristy and added a mud wash finish on them. As the final measure for the church, Henderson coated the sacristy *canales* with a Daraweld and water mixture and then sprayed them with the silicone product Daracone. Moving from the mission, he put a tinted wash on old patches of the two-story east cemetery wall.¹⁰⁵

During April 1973, W. E. "Ed" Sudderth came to the monument to work on the bell tower and nave. On the north side of the bell tower roof, water entered a drain and sheeted down the north baptistry wall. Because of this sheeting, the original plaster on that wall had begun to decompose. Fungus also grew on it. To remedy this situation, Sudderth sealed the north bell tower roof drain and rerouted the water through the west bell tower wall to the nave roof. He then sprayed the north and east baptistry walls with Supercrete, a chemical designed to join with decaying plaster and reknit it. To complete his work on the bell tower, Sudderth poured a concrete apron on the four quarters of the roof. In the nave interior he removed wet adobe wall bricks to a depth of twelve to eighteen inches and replaced them with soil-cement adobe bricks. Those wet portions of the nave on which he worked included the east area near the pulpit. On the west he removed wet bricks from the north and south sides of the wall

105. Sam Henderson, "Stabilization Report Tumacacori National Monument, 1972," typescript in Western Archaeology Center, pp. 6-10; "Archaeology and Stabilization Overview of Tumacacori National Monument," p. 33. Henderson's formula for exterior repair material consisted of one sack of warmtone cement (ninety-four pounds), and one twelve-ounce can of red mortar color mixed at a 1:2 ratio with washed sand. Interior patches were mended with a combination of one part Trinity White cement and two parts washed sand.

which covered the old transept entrance, the portion adjacent to the south edge of that wall, and the central part of the nave wall.¹⁰⁶

Since the main thrust of the stabilization-preservation programs at Tumacacori National Monument centered on the church, the outlying structures, mortuary chapel, granary, and "schoolhouse" received only sporadic attention.

Mortuary Chapel

The mortuary chapel, located just north of the church, is the main feature in the cemetery. It is circular in design with an approximate sixteen-foot interior diameter and has a single entrance on the west.

When A. S. Noon removed the debris from the mission interior in 1919, he also cleaned the floor of the mortuary chapel. The absence of roof material plus the presence of scaffolding holes in the side of the chapel led Frank Pinkley to conclude that it never had a roof.

Evidently few preservation measures were applied to the mortuary chapel in the 1920s and 1930s. The first recorded repair to that structure occurred when Dale King applied a temporary stabilized adobe mortar to the unplastered areas of the "much weakened" walls in June 1946. It consisted of the same formula as the mortar he placed on the sacristy (see footnote 53).¹⁰⁷

By November 1947 King's repair had deteriorated to the point that it needed replacement. Some of his mortar was removed in that month with the remainder eliminated in April 1948. Earl Jackson braced the areas of original plaster and replaced King's mortar with his scratch and finish plaster coats. In December 1949 Charlie Steen patched exterior holes on the chapel with plaster. By May 8, 1950, Jackson had applied scratch and finish coats to all exposed adobe on the structure's walls.¹⁰⁸ In June 1951 he repaired new weathered holes in the original plaster. He turned his attention to the chapel interior in December 1952 and stabilized the inner walls.¹⁰⁹ Additional patches and preservation material were undoubtedly applied to the mortuary chapel in the years after 1952, but little of this activity has been recorded.

106. W. E. Sudderth, "The Nave and Bell Tower Tumacacori National Monument Arizona," (1973), typescript in Western Archaeology Center, pp. 1-3; "Archaeology and Stabilization Overview of Tumacacori National Monument," p. 34; Nogales *International*, April 17, 20, 1973.

107. Jackson, "Mission Stabilization Subsequent to July 1947," p. 1; *Southwestern Monuments Monthly Reports* (Tumacacori), June 1946; Ringenbach, *A Short History of Tumacacori National Monument*, p. 37.

108. *Southwestern Monuments Monthly Reports* (Tumacacori), April, May, June 1948; December 1949; Jackson, "Mission Stabilization Subsequent to July 1947," p. 3.

109. *Ibid.*, p. 4; *Southwestern Monuments Monthly Reports* (Tumacacori), December 1952.

Granary

In 1849 H. M. T. Powell first noted the existence of a granary at Tumacacori. In his journal he wrote, "East of the Church there was a large square yard, on the West side of which, passing under some solid arches, we came to a flight of steps leading to a granary, etc."¹¹⁰ Frank Pinkley described the structure as a dormitory. The west wall of the building formed part of the east cemetery wall. Pinkley observed that it stood nearly two stories high without a roof or floor. Inside the ruins were two rooms separated by a large stairway which led to the second floor from a door in the middle of the east wall.¹¹¹ At one time two families occupied the structure. They evidently made the changes in the granary, which included separating the two rooms by a short wall, closing the middle entrance, and cutting a new door in the east wall.¹¹²

Although Pinkley considered rebuilding the walls and roof of the granary, he never accomplished this task. Few preservation measures, in fact, were applied to the structure until the 1950s. In 1951 Earl Jackson reported that rain had weakened the original door opening in the granary's unprotected walls. To prevent deterioration of the exposed adobe walls, Gordon Vivian experimented with a protective coat of the silicone solution Daracone, sprayed on the granary in 1954. In April 1955 Daracone was again applied to the walls. Superintendent Ray Ringenbach felt the silicone coat had effectively protected the granary during the 1955 rainy season. In March 1956 Vivian returned to the monument. While there, he waterproofed the base of the granary walls, patched deteriorated areas, and gave the structure another coat of Daracone.¹¹³

Silicone did not provide permanent protection for the granary walls. They continued to deteriorate, especially along the top. As a result, in 1962 Superintendent Michael Becker decided to cap the wall with cement-stabilized adobe. He applied this mixture atop the walls while it was still wet. After it had dried sufficiently to hold its shape, Becker painted the cap with three color coats of soil mixed with water.¹¹⁴

110. Watson, *The Santa Fe Trail to California, 1849-1852*, pp. 141-42.

111. Pinkley, *Tumacacori National Monument*, (no date), p. 20.

112. Paul Beaubien, "Excavations at Tumacacori--1934," *Southwestern Monuments Supplement* (March 1937), pp. 16-17.

113. *Southwestern Monuments Monthly Reports* (Tumacacori), September 1951; April, September 1955; and March 1956; Ringenbach, *A Short History of Tumacacori National Monument*, p. 37; Shiner, "Maintenance Stabilization at Tumacacori National Monument, 1959," p. 3; "Archaeology and Stabilization Overview of Tumacacori National Monument," p. 27.

114. Michael J. Becker, "Stabilization Capping of the Granary Wall," (1962), typescript in Western Archaeology Center; "Archaeology and Stabilization Overview of Tumacacori National Monument," p. 28; Superintendent's Monthly Reports, Tumacacori, July 1962. Becker's mixture for the cement-stabilized adobe consisted of twelve shovels of sand, one shovel of lime, one shovel of adobe soil, and three shovels of cement.

Superintendent Becker's attempt at stabilization failed. In 1969 funds were approved for a major granary preservation program. Martin Mayer and Thomas Caperton arrived on August 10, 1970, to begin the work. They removed Becker's wall cap. On the north the work crew replaced missing wall sections with soil-cement adobe bricks. They grouted the exterior with soil-cement and plastered it. They applied a Daraweld bonded adobe wash over the plaster. Buttresses were added on the east and west sides of the south granary wall to give that two-story wall more support. The granary floor was reexcavated and the interior grouted and plastered. The main support vigas were replaced. Mayer closed the later doorway in the east wall and opened the original entrance in the middle of that wall. Fill was removed from the area south of the granary and covered with a buried six-millimeter polyethylene sheet spread in apron fashion to carry water from the space. The wall on the west side of this area, which formed part of the east cemetery wall to the south of the granary, was rebuilt with soil-cement adobe bricks to the height Frank Pinkley had constructed in 1921. Finally, a metal roof was built over the granary in 1971.¹¹⁵ During the course of Sam Henderson's stabilization work in 1972, he grouted cracks in the granary's pot bench with tinted cement.¹¹⁶

Schoolhouse

Located east of the church, the schoolhouse was all that was left of the priest's quarters in the *convento*. Frank Pinkley hoped to rebuild the structure, but never accomplished the task. After George Boundey arrived at the monument in 1929, he oversaw repair of the building for use as a schoolhouse. School was held in one end of the structure. In 1932 Boundey converted the other end into a museum, but he did not display the more valuable items there because of the building's poor condition.¹¹⁷ It evidently served as a museum until the present visitor center/museum complex was constructed in 1937.

The schoolhouse deteriorated in the 1930s. By 1939 Superintendent Caywood reported that ground-level moisture had entered the entire rear wall. He evidently did not attend to the structure until 1941, when he braced the walls by running two five-eighths-inch round iron rods fixed with four wooden plates through them.¹¹⁸

115. Mayer, "Stabilization Report Tumacacori 1971, Mission, Granary, and Convento," pp. 151-52, 166-67, 200-202; "Archaeology and Stabilization Overview of Tumacacori National Monument," p. 32; Superintendent's Log of Significant Events, September 1969; August, October 1970; February, April, and June 1971.

116. Henderson, "Stabilization Report Tumacacori National Monument 1972," p. 10.

117. *Southwestern Monuments Monthly Reports* (Tumacacori), December 1, 1923; November 5, 1929; and November 1, 1932. The structure had also housed a school in the 1915-16 period.

118. *Ibid.*, October 1939; December 1941.

The structure evidently stood without attention until 1954. In that year Gordon Vivian sprayed a test patch of Daracone on one wall. During Vivian's visit the next year, he restored the attic, placed a protective roof over the structure, and gave it a plaster color coat on which he sprayed Daracone. Vivian's efforts did not solve the problem of water in the walls. The monthly report also recorded that schoolhouse stabilization included pouring concrete, but it did not give the location. In addition Vivian excavated the foundation and uncovered an original arcade bench next to the north wall. Interior digging revealed part of the original floor.¹¹⁹

In June 1957 a protective canopy was placed over the schoolhouse's arched window. Repairs were also made to plaster at the same time. Sam Henderson cleaned the interior and patched rodent holes in 1972.¹²⁰

119. Ringenbach, *A Short History of Tumacacori National Monument*, p. 37; Shiner, "Maintenance Stabilization at Tumacacori National Monument, 1959," p. 3; "Archaeology and Stabilization Overview of Tumacacori National Monument," p. 27; *Southwestern Monuments Monthly Reports* (Tumacacori), June 1954; February, March, and September 1955.

120. Superintendent's Monthly Reports, Tumacacori, June 1957; Henderson, "Stabilization Report Tumacacori National Monument, 1972," p. 10.

APPENDIX

Results of Daniel Evans's Moisture Content Measurements
October 1971

Location IA

Hole 1

<u>Depth in inches</u>	<u>Percentage of water, weight basis</u>
0-4	00.0 (no material)
4-6	14.3
6-8	16.7
8-10	18.0
10-12	19.4
12-14	18.8
14-16	19.8
16-18	19.8
18-20	20.4
20-22	20.4
22-24	18.2
24-26	19.6
26-28	15.4

Hole 2

0-1	00.0 (no material)
1-4	4.1
4-6	6.3
6-8	7.1
8-10	8.7
10-12	9.0
12-14	8.6
14-16	9.4
16-18	8.9

Hole 3

0-2	6.1
2-4	7.5
4-5	9.7
5-8	10.1
8-9	10.6
9-12	10.4

Depth in inchesPercentage of water, weight basis

Hole 4

0-2	00.0 (no material)
2-4	10.1
4-6	12.1
6-8	11.9
8-10	12.0
10-12	13.0
12-14	13.6
14-16	14.0
16-18	12.8

Hole 5

0-2	7.1
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Hole 6

0-2	8.3
2-4	11.9
4-6	13.7
6-8	14.1

Location IB

Hole 1

0-4	7.6
4-6	10.4
6-8	10.4
8-10	10.0
10-12	9.3
12-14	10.4
14-16	11.0
16-18	10.9
18-20	9.2
20-22	9.0
22-24	10.2

Location II

Hole 1

<u>Depth in inches</u>	<u>Percentage of water, weight basis</u>
0-3	5.7
3-6	6.1
6-8	4.9

Location III

Hole 1

0-2	00.0 (no material)
2-4	3.8
4-6	5.0
6-8	5.8
8-9	5.7

Hole 2

0-4	00.0 (no material)
4-5	5.8
5-7	6.9
7-9	8.5
9-11	9.0

Hole 3

0-2	5.8
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Hole 4

0-3	5.7
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Location IV

Hole 1

0-2	00.0 (no material)
2-4	4.6
4-6	6.1
6-8	6.7
8-10	7.2
10-12	7.4

Location V

Hole 1

<u>Depth in inches</u>	<u>Percentage of water, weight basis</u>
0-2	6.9

Hole 2

0-3	00.0 (no material)
3-5	7.8
5-7	9.1
7-9	9.6

Location VI

Hole 1

0-2	5.2
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Location VII

Hole 1

4-6	3.6
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Location VIII

Hole 1

Surface 1/4 inch	3.7
0-1	5.8
1-4	6.4

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As the Nation's principal conservation agency, the Department of the Interior has basic responsibilities to protect and conserve our land and water, energy and minerals, fish and wildlife, parks and recreation areas, and to ensure the wise use of all these resources. The Department also has major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

