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Archaeology, History, and Community: Tucson's Río Nuevo Project

William H. Doelle, Center for Desert Archaeology

TUCSON'S HISTORICAL roots run deep. Over much of the urban area, the archaeological evidence of that history has been scraped away – a casualty of our modern times.

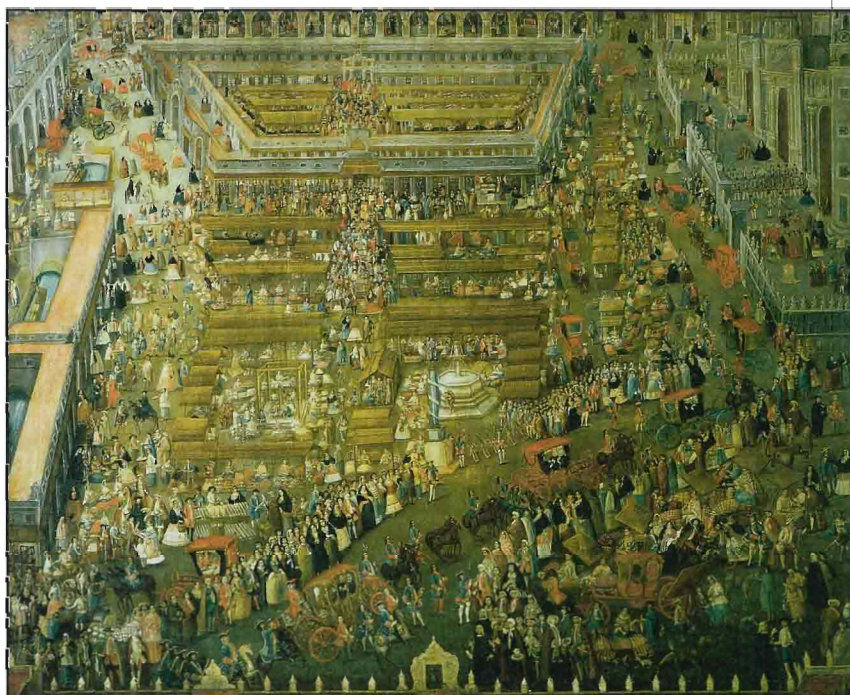
Fortunately, all is not lost. Interest in Tucson's past is growing. Proof of this was the decisive margin of victory citizens gave at the ballot box to the "Río Nuevo" program in November 1999. Río Nuevo seeks urban revitalization through economic development – and to highlight Tucson's unique culture and history.

To begin this process, the City of Tucson is sponsoring archaeological investigations at a number of focal points in the city's history. Important programs of historical research and public outreach are also under way. Desert Archaeology, Inc., is the lead consultant for an extensive project team that includes Estrada-Weber Cultural Connections, Arizona Historical Society, Arizona State Museum, Center for Desert Archaeology, Mr. Daniel Preston, and Dr. James "Big Jim" Griffith.

Some of Tucson's special story is presented in this issue of *Archaeology Southwest*. Archaeology and history are encountered regularly in Tucson. Citizens see excavations along the interstates, in the downtown area, and on the far fringes of town. Yet a great deal remains to be learned.

Although Tucson's impressive prehistoric past is also being revealed through Río Nuevo excavations, this issue gives primary attention to the historical period. The overview in our first article highlights the extensive cultural diversity that has come together in Tucson over the past several centuries. The archaeology of the historic period reflects this diversity. It is also enriched by documents, maps, photographs, and oral histories.

When archaeology is integrated with public policy, things can get complicated. There are diverse opinions



Visit of a Viceroy to the Cathedral of Mexico. Artist unknown, first half of the eighteenth century. Original in the National Museum of History, Chapultepec Castle, National Institute of Anthropology and History, Mexico. This eighteenth-century painting is part of the visual archive being assembled to aid Río Nuevo interpretive efforts (see page 12).

about what is important. Professionals approach key questions, such as reconstructing historic buildings, in very different ways (see pages 10-11). Neighborhoods, ethnic groups, and developers can find that their interests conflict. There has been extensive citizen input throughout the Río Nuevo project. Still, there are many issues to resolve.

Resolution will come through continuing debate. Given that the word community is generally defined as the people who are in regular and direct interaction, it appears that Río Nuevo is truly affecting the Tucson community. Archaeology and history are part of the very foundations for expanding this diverse community's awareness of itself.

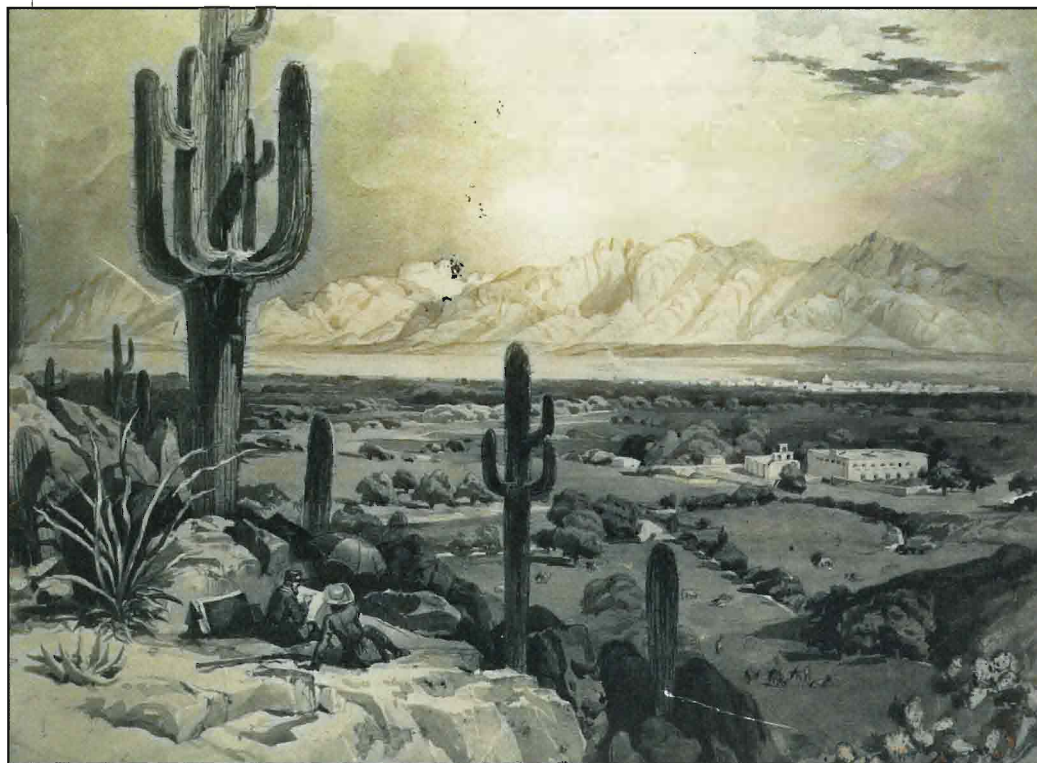
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Tucson: A Short History

William H. Doelle, Center for Desert Archaeology

J. Homer Thiel, Desert Archaeology, Inc.



In July 1852, John Russell Bartlett, a member of the U.S. Border Commission, sat on the side of Sentinel Peak ('A' Mountain) and sketched the landscape below him. In the right mid-ground is the San Agustín convento and chapel (which Bartlett mistakenly called a hacienda), and beyond it the Tucson community is visible. "The bottom lands are here about a mile in width. Through them run irrigating canals in every direction, the lines of which are marked by rows of cottonwoods and willows, presenting an agreeable landscape." (Photograph of the original courtesy of Bernard L. Fontana.)

THE "TWO MAJESTIES" – the Catholic church and the Spanish crown – were on opposite sides of the Santa Cruz River in Tucson. The mission on the west side was a native O'odham community, and the presidio on the east was a military and civil center. A system of irrigation canals that watered fields and provided drinking water occupied the physical space between them. The century and a half before Bartlett sketched this calm, pastoral scene was a period of almost constant change. And the pace was to pick up markedly in the years after Bartlett's visit to Tucson.

In 1687, the northwestern frontier of New Spain was in Dolores, Sonora, the home of newly arrived Jesuit missionary, Eusebio Francisco Kino. Father Kino traveled extensively in the first dozen years he was at Dolores and established several new missions to the north. This pushed "the rim of Christendom" nearly to the Tucson area by 1701 – the year that foundations were laid

for a church at San Xavier del Bac.

San Xavier, located just south of Tucson, was the major population center in Kino's time. At the base of modern 'A' Mountain, Kino visited a small ranchería of O'odham-speaking Sobaipuris. Other small rancherías were found north of 'A' Mountain – each located about "a pistol shot" from the next. Kino noted that Sobaipuris also inhabited the San Pedro River to the east.

Irrigation farming was practiced, and a 1697 journey through Tucson would have passed, "many cornfields, through rich fields of beans, watermelons, and squash, which are in the vicinity." The native villages were clusters of small oval houses made of "poles and mats."

Forces of change were acting from multiple directions. Father Kino introduced wheat cultivation, Spanish-style bread ovens,

and had an adobe structure built at San Xavier by 1696. Horses and cattle were introduced to the San Pedro village of Quiburi and San Xavier by 1697. Attacks from Apaches and other hostile tribes from east of the San Pedro were also increasing. Kino frequently mentions baptizing sick natives, indicating that Spanish-introduced diseases quickly began to take their toll.

Through the first half of the 1700s, the Tucson area was visited by priests from San Xavier del Bac or missions farther south. The first presidio was established at Tubac in 1752. It was in response to an O'odham rebellion the previous year; however, it became an important location in the response to Apache raids in what is now southern Arizona.

A church was completed at San Xavier in 1757, as the church Kino started in 1701 was never finished. That same year, Father Middendorff came to live at San Agustín de Tucson. He spent the time unhappily in a

crude brush hut, and he had little success in getting the native population to settle in permanently. Their seasonal hunting and gathering practices were a frustration to him, but a brief rebellion led to his departure several months after he arrived.

In 1767, the Jesuit order, which had been responsible for missionary activity in modern Sonora and Arizona, was expelled from New Spain. The Franciscans expanded rapidly into former Jesuit territory. In 1771, Father Garcés reported that a chapel had been built at San Agustín, as well as a surrounding wall to ward off Apache attacks.

In 1775, Hugo O'Connor, an Irishman employed by the Spanish army, toured existing presidios to implement a 1772 plan to strengthen the line of defense provided by these military outposts. On August 20, he selected a location on the east bank of the Santa Cruz River as the place to relocate the Tubac Presidio. Though the troops moved to Tucson in early 1776, construction of a proper fortress proceeded slowly. An attack by Apaches in 1782 finally led to a rapid completion of the enclosing walls.

Tucson's history was closely tied to the San Pedro



The ruins of the convento of the San Agustín Mission were featured on this postcard from the early 1900s.

River. In 1762, some 400 Sobaipuris from near the San Pedro were relocated, primarily to San Agustín. Further, Hugo O'Connor selected a new location for the Presidio of Terrenate on the San Pedro, just two days after choosing the Tucson location. The Presidio at Terrenate was partially constructed, but had to be abandoned in 1780.

San Xavier del Bac had a resident priest

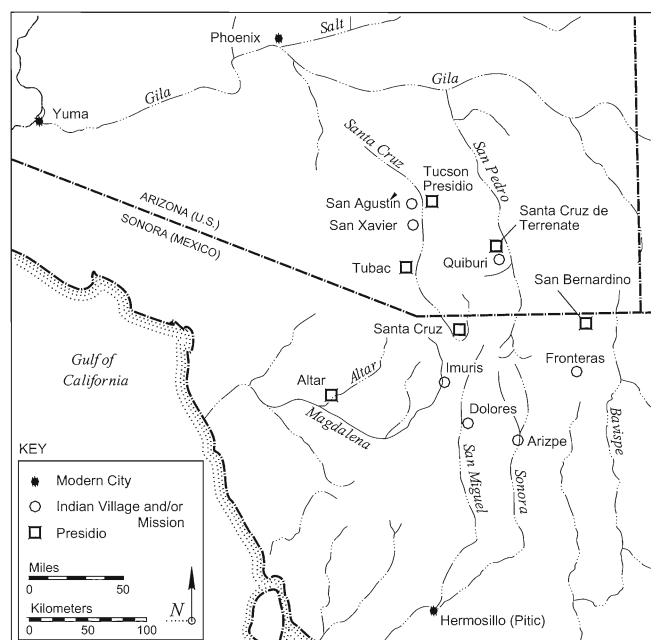
much of the time, whereas San Agustín was a *visita* (served by a visiting priest). In 1783, the Franciscans began building the magnificent church that survives at San Xavier to the present. When that church was completed in 1797, it is believed that the laborers may have shifted north to San Agustín to build the mission complex there. It eventually included a two-story convento, a granary, and walled garden and cemetery areas.

The 1790s saw a change in Spanish policy against the hostile Apaches. They encouraged the Apaches to settle down, providing them with food rations and land to cultivate. A small Apache peace camp was established northwest of the Tucson Presidio in 1793. As a result, more peaceful conditions prevailed and led to a short period of prosperity. However, Mexico's War of Independence from Spain began in 1810 and was concluded in 1821. Places like Tucson on the far frontier were forced to be even more self-sufficient, and following independence, Mexico moved to shut down the mission system. As a result, the mission at San Agustín went into decline soon after it was established.

The presidio continued in operation in Tucson under the new Mexican government. The Gadsden Purchase of 1853 brought the portion of Arizona south of the Gila River into the United States. Mexican troops left Tucson in 1856 as United States soldiers arrived.

The American period saw rapid population growth. In 1880, there were just over 7,000 Tucsonans – the approximate peak population of prehistoric times. With the coming of the railroad in 1880, still greater changes ensued.

The following four articles on the historic period archaeology of Tucson focus on key recent work around downtown Tucson: the mission, the presidio, a Mexican household, and a Chinese household.



Location map for places in southern Arizona and Sonora.

Tucson's Birthplace

J. Homer Thiel, Desert Archaeology, Inc.

TUCSON'S FERTILE FLOODPLAIN has drawn people for thousands of years. Today, the Santa Cruz River is usually dry, and irrigation canals and fields have disappeared. The area was once the location of the San Agustín Mission. The recent excavations for the City of Tucson's Rio Nuevo project uncovered portions of the site, well-known as the birthplace of Tucson.

We lack records describing the construction at San Agustín, but suspect it was completed in the late 1790s or soon thereafter. The mission was used for only a short time and declined after the Mexican War of Independence. Spaniards, including priests, were expelled from Mexico in 1829. An inspection in 1843 reported that the mission structures were deteriorating and most of the ritual items had been taken to Imuris, Sonora.

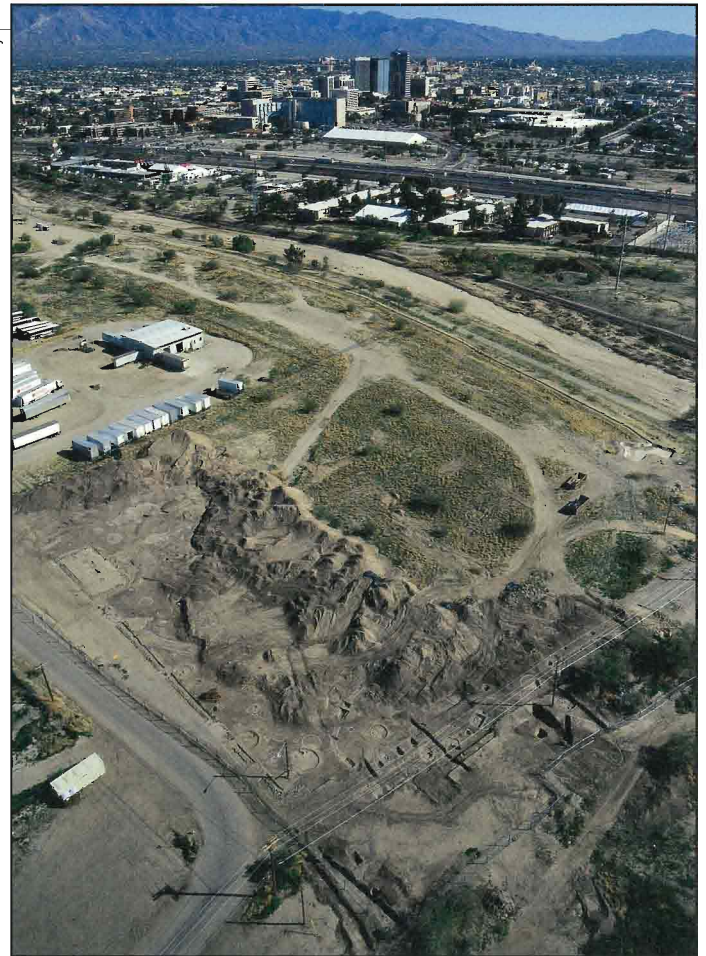
The mission complex continued to decay, with the chapel collapsing into rubble before 1880. The advent of photography led to the first detailed documentation. By the early 1900s, the upper floor of the convento was largely gone, and by the 1930s, children playing in the ruins saw only a few wall stubs.

In the 1940s, the Tucson Pressed Brick Factory began mining clay in the mission area, and archaeologists from the University of Arizona became alarmed at the destruction. Several student projects in the late 1940s and early 1950s excavated burials and discovered an Early Agricultural period pithouse. Just before the City's landfill operation moved into this area, Arizona State Museum archaeologist William Wasley conducted a brief salvage excavation using "volunteer" labor from the Pima County Jail. A great deal of information was saved, in great haste. As Wasley concluded his excavations, the last remnants of the convento and chapel were destroyed and replaced with landfill. Wasley mapped the entire mission complex, and his floor plan of the chapel is the only one available.

The Rio Nuevo Excavations

In November 2000, Desert Archaeology, Inc., began work at the mission site. Most of the mission complex was destroyed, but the west edge had been spared. We soon uncovered the rock foundation of the west compound wall, which extended for 97 meters (315 feet), as well as the mission granary. There were no

© Adriel Heisey



View of the completed San Agustín excavations, February 2001. The west wall of the mission complex is along the left side of the photo; the foundations of the granary are at the end of the wall. The large backdirt piles overlie deep landfill; the chapel and convento were once near the two trees to the right of the backdirt. Not a trace of them is preserved.

timbers long enough to span the entire 25-foot width of the building, so pillars were placed down the center of the structure, with a north-south beam helping to hold up the shorter beams running to the side walls. This method of construction has also been documented at the second church at San Xavier del Bac. Mission-period features were filled with chopped cattle bone and pottery, as well as a number of Piman arrow points and will provide information about the diet and material culture of the mission residents.

The work at the San Agustín site allows for planning for the proposed cultural park. When completed, the San Agustín Mission Cultural Park will commemorate the lives and achieve-

ments of Tucson's Native American, Spanish, and Mexican heritage.

Jonathan B. Mabry



J. Homer Thiel stands near the center of the excavated granary.

Exploring Tucson's Presidio

J. Homer Thiel, Desert Archaeology, Inc.

BURIED IN THE HEART of downtown Tucson are the remnants of the Spanish presidio, founded in 1775. The tall adobe walls of this fortress once enclosed and protected soldiers and civilians. Today, a few markers are the only visible evidence for the presidio. However, as part of the Rio Nuevo project, the city will search for preserved remnants of the fort and develop a cultural park to commemorate the presidio.

Presidio Excavations

In 1928 and 1929, City Engineer Donald Page uncovered portions of the presidio wall next to the Pima County courthouse and recovered bricks which were later placed inside a glass display case, now in the County Assessor's office.

In 1954, plans for a parking lot at the southwestern corner of Church Avenue and Washington Street caught the attention of Tucson businessman George Chambers. He was able to get permission for Emil Hauray and Ned Danson of the University of Arizona to conduct a short excavation at the site. They found a corner segment of a three-foot-wide wall made from layers of adobe bricks and puddled adobe. It remains unclear if this is the actual presidio wall corner, or instead, the corner of the *torreón* (or tower) that is reported to have stood at this location.

By 1991, there were questions as to whether any of the presidio survived. In that year, a ground penetrating radar study was conducted by Karl Glass of the University of Arizona, assisted by Desert Archaeology, Inc. Several areas, including the courtyard of the Pima County courthouse, had promising signatures that might represent the wall.

In 1992, a two-phase testing program began in the courtyard and led to the discovery of a north-south adobe wall on a stone foundation, extending for over 100 feet (see *Archaeology in Tucson*, July 1993). The east wall of the presidio had been located.

In 1998, the Center for Desert Archaeology searched for the west presidio wall in the lawn next to City Hall. Work uncovered a variety of features, including a north-south adobe wall (*Archaeology in Tucson*, Summer 1998). Was this the presidio wall? Further work was needed.

The 1999 Excavation

In the Spring of 1999, the Center for Desert Archaeology returned to the City Hall lawn, 40 feet to the south of the previous trench. The rock retaining wall for the Cosmopolitan Hotel front garden was soon found,

positioned on top of the 1870s surface of Main Street.

To the east of the street was a fragmentary, north-south, three-course adobe wall. The bottom course was made from adobe bricks, the middle was puddled-in-place adobe, and the third, another layer of adobe bricks. The wall segment aligned with the adobe wall found in



Top: William Doelle examines the section of the west presidio wall uncovered in 1999. Bottom: Majolica sherds, from dishes brought to Tucson from Mexico between 1775 and 1850, were recovered during the excavations of the presidio wall.

the 1998 season and indicated that the wall was at least 50 feet (15 meters) long. Based upon the length, its stratigraphic position, associated artifacts, and the known history of the

site, it was concluded that this is the west wall of the presidio. The interior (east) side of the wall in this area was never built upon and contained trash with chopped animal bones, Mexican majolica sherds, Native American pottery, gun flints, and lead musket balls. These artifacts and food materials provide additional information on the lives of Tucson's presidio residents.



Future Work

Desert Archaeology, Inc., will be returning to the northeastern parking lot in early 2002 to re-expose the features found in the 1954 excavation. These will be re-examined, and the rest of the lot will be explored. We expect that other Hohokam pithouses, Spanish and Mexican period presidio structures, and even American Territorial features are present. Excavations will precede the planning for the Tucson Presidio Cultural Park, one of the many cultural attractions of Rio Nuevo.

The Archaeology of a Mexican Family

J. Homer Thiel, Desert Archaeology, Inc.

A FLOOD DESTROYED the León family household in the 1860s. In the summer of 1999, excavations for the Arizona Department of Transportation near downtown Tucson uncovered the farmstead occupied by this Mexican family from the 1840s to the 1910s. Few sites have been excavated from the Mexican Period (1821-1856) in southern Arizona – and none that had been occupied by a single family for such a long timespan. Computer map overlays, archival research, interviews with descendants of the family, and the analysis of recovered artifacts have led to a better understanding of the lives of Francisco Solano León and Ramona Elías.

Francisco Solano León was born in Tucson in 1819, son of a presidio soldier, Juan León, and his wife, Francisca Acuña. Four years later, Ramona Elías was born to another presidio soldier, Cornelio Elías, and his wife, Concepción Apodoca. Francisco and Ramona married in the early 1840s and built a house to the west of the presidio. Francisco was a soldier in the Mexican army, guarding the monthly payroll on trips from Arizpe and helping to lay out the international border after the 1853 Gadsden Purchase.

After the destructive flood of the 1860s, the León family moved downtown, only to have Meyer Street extended through their house in 1873. They returned to their old farmstead and built a new house. The three-room structure had a central breezeway, or *zaguán*, as well as a kitchen on the east side and a bedroom on the west.



María León, Ramona Elías de León, and Cleofa León (Sister Amelia). (Photo courtesy of Andrew Romo, the Leóns great-great-grandson.)

Ramona was the mother of twelve children, eight of whom survived to adulthood. The León family stressed education, and four of the children attended college. Educational artifacts – such as ink bottles, pencil leads, chalk, and school slate fragments – were very common. Many of the slates had five parallel lines scratched into them, perhaps for musical notation. Oral traditions suggest the family owned one of the first pianos in Tucson. Other artifacts reveal that the Leóns used locally made ceramics for cooking and food storage. They ate from imported Mexican-made bowls and saucers, along with a few brightly decorated English ceramics.

Historical records reveal that Francisco was a strongly religious man. One daughter became the first Tucson-born nun in the St. Joseph order. A brass and wood crucifix found at the site was likely

used by Sister Amelia. A mourning crucifix, made of hard rubber and decorated with acorns, may have been worn after Francisco died in 1893. Francisco's role as an intermediary between the Mexican and Anglo popula-

tions, his service as a member of three Territorial legislatures, and his business acumen led to the publication of an obituary in Tucson's English-language newspapers, an unusual occurrence:

"The deceased was highly respected by all of the old people who knew him, for he was the soul of honor and a light for good among his people."

David A. Gregory



Archaeologists uncovered the foundations of the Leóns four-room, adobe house. It had a central breezeway (zaguán) and corner fireplaces in flanking rooms. A line of bricks extending through the center of the building once supported a wood floor that replaced an earlier dirt floor. Excavations funded by Arizona Department of Transportation.



Henry Buehman photographed Chinese for identification papers which they were required to have after 1892. (Photo courtesy of Arizona Historical Society, photo B8379.)

"If one rides around outside [Tucson] one might suppose himself in a foreign land. I have addressed half a dozen men in succession without being able to talk with them. One was a . . . Chinese market gardener, living in a shanty of mud and boards beside a beautifully tended patch of cabbages, onions, lettuce, spinach, and other vegetables . . ."

Ellsworth Huntington,
March 20, 1910

The Chinese in Tucson

J. Homer Thiel, Desert Archaeology, Inc.

because life was difficult in territorial Tucson. Anti-Chinese laws and public opinion limited opportunities and prevented Chinese from marrying Anglo or Mexican women. As a result, some of the Chinese dreamed of a return home with accumulated wealth. As the floodplain was developed and the water table dropped, gardening became less profitable. Farming ended in the 1930s. Most of the Chinese moved to the operation of grocery stores. Many of their families can still be found in Tucson, contributing to our diverse community.

J. Homer Thiel



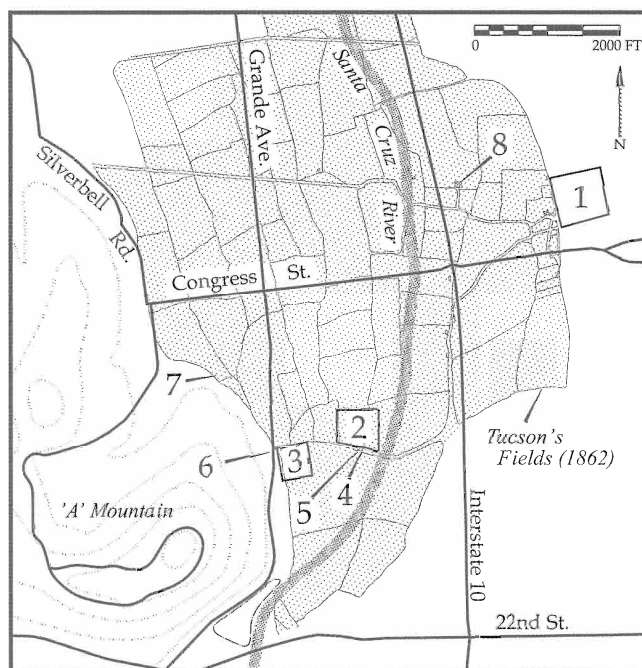
Catherine Treat and Dottie Ohman excavate the Chinese gardener's well.

MANY CHINESE ARRIVED in Tucson after helping to build the Southern Pacific Railroad tracks eastward from Yuma. Among the men who chose to remain behind were about 30 who took up farming in the Santa Cruz floodplain. The Chinese recognized an opportunity – no one was growing fresh produce for restaurants and homes.

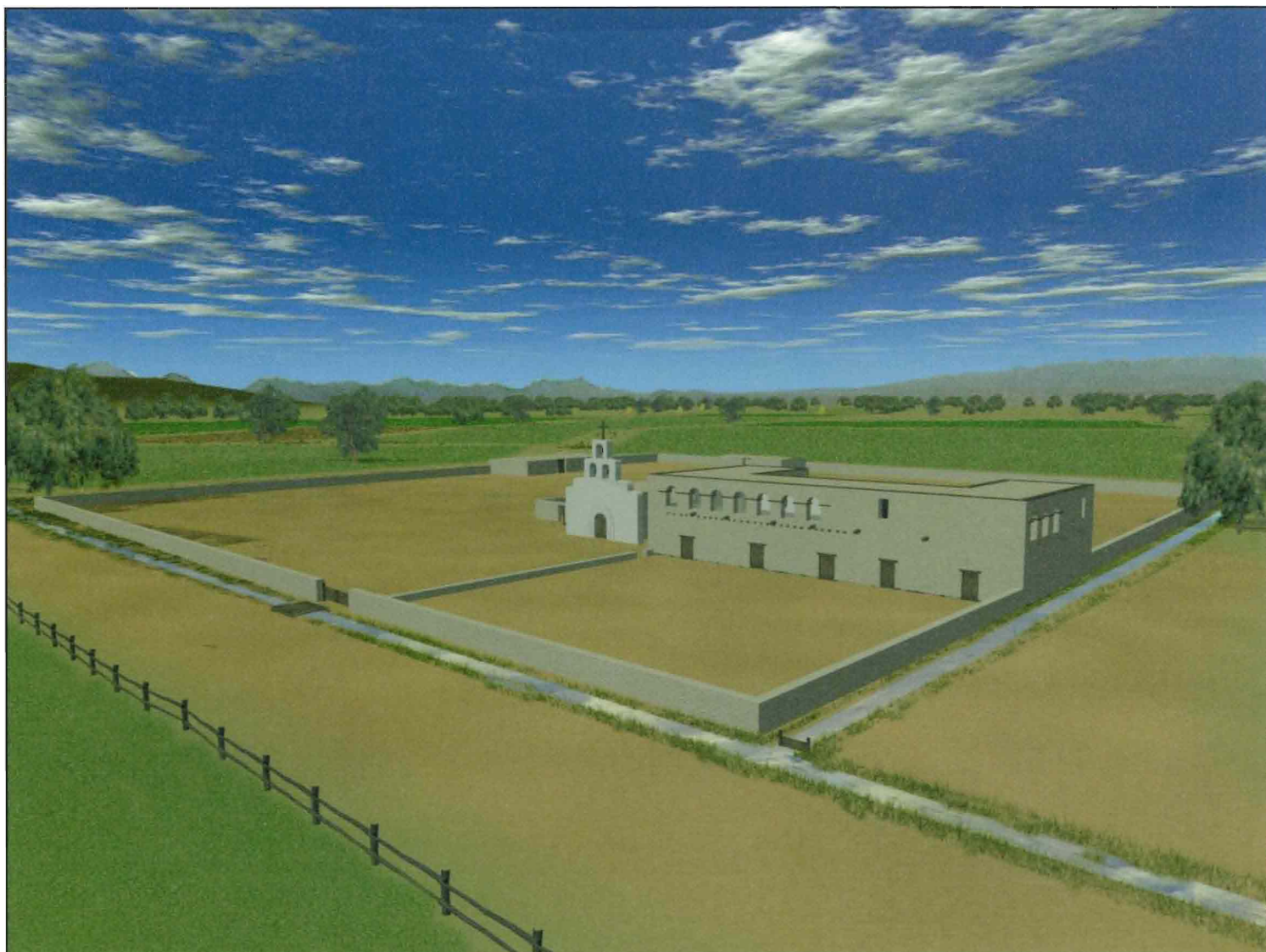
One group of Chinese farmers rented land from Mexican businessman Leopoldo Carrillo, who had purchased property in the very old fields just south of the Mission of San Agustín in 1871. By the 1880s, these Chinese farmers were growing a variety of crops that required extensive watering, including watermelons, strawberries, and potatoes. Water became scarce and Carrillo and other nearby landowners cut off water to the Mexican farmers in recently established fields north of St. Mary's Road. The ensuing court case resulted in the loss of water rights for these Mexican farmers. The court found that owners of the older fields had the "prior right" to the water, ending a communal tradition of water sharing dating to the Spanish presidio.

A nine-foot-deep well found during the Rio Nuevo excavations at San Agustín yielded a large collection of artifacts discarded by the Chinese farmers between 1880 and 1900. These included many items imported from China – soy sauce jugs, rice bowls, ceramic soup spoons, and bones from Pacific Ocean fish and cuttlefish, a squid-like animal. The items reveal a strong desire to re-create the culinary traditions these men had known in their homeland. Nearby excavations at another Chinese gardener's household yielded a similar pattern (*Archaeology in Tucson*, Spring 1998).

One reason the farmers clung to their past was



Location map for places in Tucson: (1) Tucson Presidio; (2) San Agustín Mission; (3) Mission Gardens; (4) Carrillo House; (5) Well with Chinese trash; (6) Warner's Mill; (7) Chinese gardener's household; (8) León household.



Computer model of San Agustín Mission developed by Doug Gann, Center for Desert Archaeology. The view is from the southeast corner of the mission complex looking northwest. The two-story convento and the chapel are in the foreground, and the granary is visible beyond the chapel.

What Do We Know? How Do We Know It?

William H. Doelle, Center for Desert Archaeology

SIMPLE QUESTIONS present big challenges to archaeologists, historians, and planners working on the early stages of the Rio Nuevo project. We have an excellent opportunity to demonstrate how researchers answer questions about the past. These articles explore a few of the tools being used to ground this project in the best possible science.

Technology presents an array of new tools to supplement traditional information sources such as archaeological excavations and historical documents. Doug Gann uses three-dimensional modeling software to create a synthesis of information (above) from historical maps, photographs, and archaeology.

The model shown here is the current “best concept” of what the mission complex looked like. However, it is

not a finished product. Now that it is built, we will bring in experts who will figuratively “tear down” Mr. Gann’s model. In collaboration, we will devise ways to resolve any problems so the model can be “rebuilt again.”

James Holmlund uses the technology of the modern surveyor on problems that cannot be addressed by archaeologists since so much of the mission complex was destroyed in the 1950s (see page 9). Mr. Holmlund uses multiple lines of evidence to estimate where the cemetery and north wall of the mission complex were located.

The tool kit for recovering information about the past is constantly expanding. The Rio Nuevo project will continue to refine what is known, but there are also limits to what is knowable. It will be important to acknowledge that as this project moves forward.

The Surveyor as Historical Detective

James P. Holmlund, Geo-Map, Inc.

NOTHING IS LEFT to map, so what is a surveyor to do? The chapel, convento, and all but one of the enclosing walls around the San Agustín Mission are simply gone. However, knowing where the northern enclosing wall was once located can help us better understand the fragment of the main mission cemetery that is still preserved. To solve this problem, there is quite a bit that a surveyor can do – in the office.

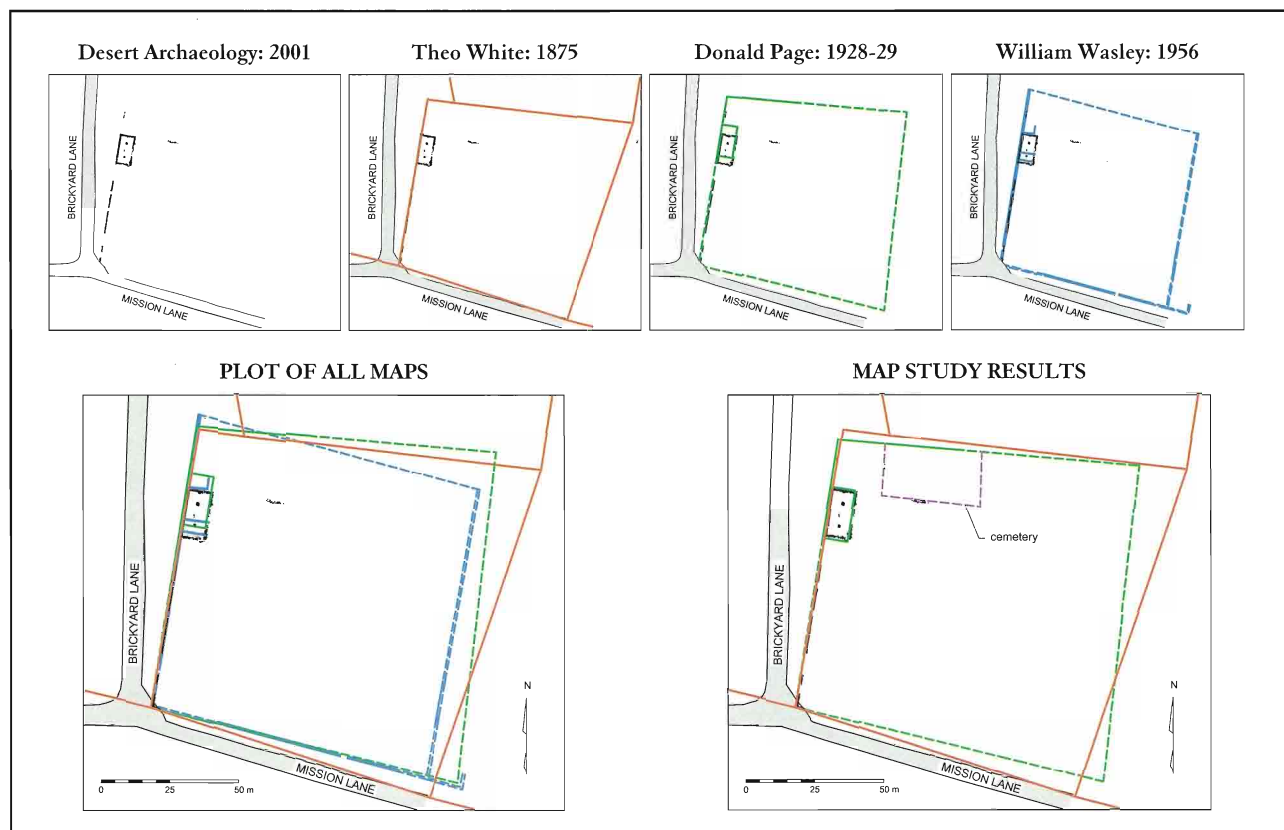
The recent excavations provided the Geo-Map team with three high-precision spatial control points: the western enclosing wall (including the corner it makes at its southern end), the full floor plan of the granary, and a small section of wall footing that is believed to be the southern wall which originally enclosed the main mission cemetery. Three earlier surveys share at least some of these points: an 1875 survey by Theo White, a compass-and-pace map prepared by City Engineer Donald Page in 1928 and 1929, and a map by William Wasley after his 1956 excavations.

The four small figures below show, first, the control

map with the information from the recent excavations; each earlier survey is then imposed over the control map. On the first of the larger maps, all this information is plotted together. We had hoped for closer correspondence, but instead, we see significant differences. This forces a bit more work.

Note that Donald Page's map of the granary nearly matches the size of the recently excavated granary footings, but it is offset a bit to the north. Page was counting his paces as he walked along the wall. It is more likely he was a bit off on the long measurement south of the granary rather than the short measurement north of it. Further, that short measurement is nearly the same as a measurement we can take from an 1890s photograph. This, and other information, suggests Page's work has the greatest reliability. Finally, using an 1880 Watkins photograph (see page 15), we can estimate where the walled cemetery would fall on our map.

The results of this rather complicated study are shown in our final map. Adjusting Page's measurements slightly gives us the best fit. In the area of the cemetery, the White survey is only slightly different from Page's. It has been a great deal of work, and as a surveyor, I would like to see even greater accuracy. However, as a historical detective, I think we are close to our limits.



Multiple sources of information are combined to document the former location of the San Agustín Mission cemetery.

POINT: Reconstruction Doesn't Work!

R. Brooks Jeffery, Coordinator, Preservation Studies, College of Architecture, Planning, and Landscape Architecture, University of Arizona

A FALSE SENSE OF HISTORY will be created if the San Agustín Mission is reconstructed. The result would convey more about the values of today's "hyper-realistic" culture than it ever could of the nineteenth-century culture the original building represented. Nothing remains of this building. Furthermore, it has lost its contextual relationship to the other built features and open spaces of Mission San Agustín, the flowing Santa Cruz River that supported it, and the Tucson Presidio that protected it.

The Secretary of the Interior's Standards for the Treatment of Historic Properties defines four treatments: Preservation, Rehabilitation, Restoration, and Reconstruction. These treatments were devised in a hierarchy of preference and authenticity. Thus, it is better to preserve than rehabilitate; better to rehabilitate than to restore; better to restore than to reconstruct. As defined by the Secretary of the Interior:

Reconstruction recreates vanished or non-surviving portions of a property for interpretive purposes when documentary and physical evidence is available to permit accurate reconstruction with minimal conjecture and such reconstruction is essential to the public understanding of the property . . . A reconstruction will be clearly identified as a contemporary re-creation.

Analysis of these standards provides sufficient evidence of the inappropriateness of reconstruction as a treatment in the case of the convento. First, reconstruction as a treatment was only intended to re-create *portions* of a property, not the entire property, as in the case of the San Agustín Mission. This implies the existence of some remnant of the property, such as was the case in the reconstruction of the buildings at Williamsburg. Second, lacking the physical evidence, the documentary evidence for the convento – exterior photographs of an unplastered ruin and written descriptions – leave much to conjecture regarding the internal spatial relationships, structural systems, and wall treatments of the original building as it appeared before the advent of photography. Third, if the convento is to be more than just an icon for the larger mission site, then reconstruction must include the entire complex, including its chapel, granary, gardens, and acequias, to convey a legitimate public understanding of the property. And fourth, how does a reconstruction

accurately educate the public about that period's building materials, construction technologies, and other physical qualities while clearly being identified as a contemporary re-creation?

Compliance with the Secretary of the Interior's Standards provides historic properties with the legitimacy sought in a project as prominent as Rio Nuevo. The guidelines continue to advise that if sufficient information is not available, it is better to interpret the lost building through other media, than to run the risk of fabricating an expensive historical untruth. In Philadelphia, the structures around Benjamin Franklin's house were heavily restored by the National Park Service based on existing physical and documentary evidence. In the case of Benjamin Franklin's actual house, the National Park Service concluded that there was insufficient information to create a credible reconstruction, and a full-scale, three-dimensional, metal frame of the house was erected – along with outdoor exhibit materials – to represent and interpret the site. I am not advocating for a steel frame outline of the convento. Rather, we should look at creative ways to represent the convento, and its context, that will satisfy the educational as well as experiential goals expressed in the Rio Nuevo proposal without falsifying the authenticity of the original building.

By re-creating an historic artifact, we also devalue the truly authentic historic structures, such as Mission San Xavier, which deserves to remain as the symbol of the Spanish Colonial presence in Tucson. Rebuilding the convento, in the context of the contemporary tourist-oriented development of Rio Nuevo, would serve more as a Disneyland-esque stage prop, just as its ruin did for late nineteenth and early twentieth century curiosity-seekers, as represented in their photographs.

Umberto Eco, in his influential 1961 essay, "Travels in Hyperreality" first coined that term to describe the pseudo-places of his American travels. He described places like Disneyland (and now Las Vegas) as where, "the American imagination demands the real thing and to attain it, must fabricate the absolute fake." Any reconstruction of the convento would be a fake; a dishonor to the authenticity of extant historic structures and the validity of Rio Nuevo's attempt to interpret Tucson's cultural identity.

Visit Río Nuevo's website at: <http://www.río-nuevo.org>

COUNTERPOINT: Reconstruction Can Work!

Marty McCune, Historic Preservation Officer, City of Tucson

RECONSTRUCTION IS a controversial and expensive means of interpreting historic buildings. However, if done properly and labeled appropriately, reconstruction can provide an experience for the visitor that other means of interpretation cannot. Size, scale, and use of materials can all be conveyed better by looking at an actual building than through photos, metal frames, or computer-generated images.

While Brooks is correct in that the Secretary of the Interior's Standards for Reconstruction are usually applied to a missing part of a building such as a cornice or piece of trim, one of the Standards for the Treatment of Historic Properties does address reconstruction of buildings or sites and provides guidance for how that should be accomplished. These suggestions include preceding reconstruction with thorough archaeology, as well as preserving remaining historic materials, features, and spatial relationships.

The National Park Service has completed at least one entire reconstruction that has been a resounding success – Bent's Old Fort in La Junta, Colorado, which was dedicated in July 1976, as part of the nation's two-hundredth birthday and the one-hundredth anniversary of Colorado statehood. Merrill J. Mattes, a Park Service historic interpretation specialist, wrote:

All who have visited the project have marveled at the detailed authenticity... Call it reconstruction if you want to be technical, but to those who waited so long it is truly a resurrection.

Detailed plans for the San Agustín Mission complex have not yet been formulated, but the intention is to provide a variety of means of interpretation of the different eras and resources available on this rich site. Recent excavations have uncovered evidence of habitation from 3,000 years ago, as well as use of the site in the late 1800s by Chinese farmers and the Carrillo family. Resources in various stages of preservation are present on the site – some may be interpreted through display of actual archaeological remains such as the perimeter wall of the mission complex. The Mission Gardens will be recreated by planting fruit trees and other crops that were grown when the mission was active. It is also possible that at least one pithouse will be “built” by constructing a wood frame and covering it with reeds to show the prehistoric architecture.

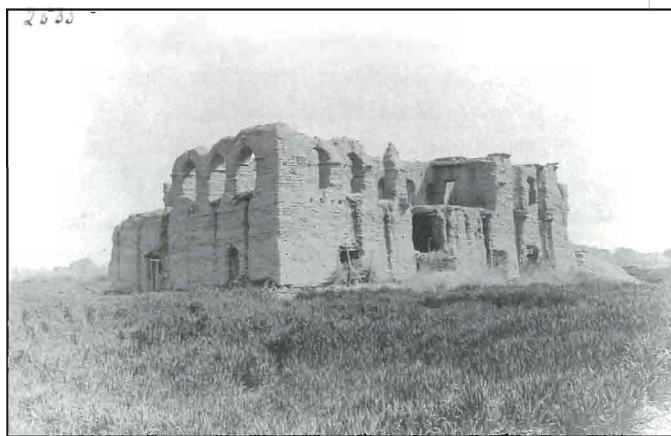
The other point about doing reconstruction on this site is that we have excellent information from diverse sources. Excavations in the mid-1950s documented the

foundation and floor plan of the convento; photographs of the deteriorating building show size, location, and style of windows; and historical accounts provide us with still more information about the building. What the interior might have looked like is an area of some conjecture, though missions in Mexico had similar structures from which we can glean information. In addition, the surrounding open space provides a rare opportunity to recreate the environment around the building as part of the interpretive plan. Perhaps the most difficult issue is the intended use of the reconstructed building – as a museum with exhibits, as “house museum” with period furnishings, or as something altogether different, such as community meeting or event space. This will also affect the interpretation needed to convey the meaning of the structure.

There are many ways to interpret historical remnants – from exhibits to viewing actual artifacts to partial or complete reconstructions. Each way has its strong and weak points and will highlight diverse elements of the resource being interpreted. For the convento – different from what is available to be viewed at San Xavier – reconstruction can provide a unique experience to learn about this period of Tucson's rich history.

Point:Counterpoint Background

Not everyone believes that reconstruction of historical buildings is the best interpretive approach. To engage this issue and to give it a Rio Nuevo focus, we asked Brooks Jeffery and Marty McCune to argue the pros and cons of reconstructing all or part of the San Agustín Mission.



Photographs document the decline of the San Agustín Convento over a period of 75 years. This photo from the 1890s is one of the best. (Courtesy of Arizona Historical Society, photo 2535.)

Creating a Visual Archive

Michael F. Weber,
*Estrada-Weber Cultural
Connections*

GREAT CARE must be taken to ensure that the interpretation of Tucson's past is as authentic as possible. In a historical park, much of the information is transmitted visually to visitors, often through artistic recreations. Visual presentations communicate ideas quickly; however, they often reflect more about their own time than the time they are meant to depict.

To counter these problems – and to provide diverse interpretive resources – a visual archive is being assembled. Soon, there will be hundreds of photographs of drawings, paintings, maps, and artifacts made between 1700 and 1860. Images from the period are relatively rare and are scattered through many archives and museums in Spain, Mexico, and the United States.

One purpose of the archive is to provide as many images from the eighteenth and nineteenth century as possible to use in interpretation. A second purpose of the archive is to provide direct historical evidence not readily available in written form. Sometimes, this evidence clarifies the appropriate type of clothing or technology at a specific time, and sometimes it raises questions that must be answered by further examination of historical documents.

I have selected two paintings done in Mexico City as examples: *Visit of a Viceroy to the Cathedral of Mexico* (see page 1) and *Buñuelos Seller* (this page). Also included is an artifact photograph of small copper jars called *chocolateros* (see page 13), and the initial article on Tucson's history features Bartlett's sketch of the local area from 1852 (see page 2).

The subject of the *Buñuelos Seller* is a man and a woman making and selling buñuelos, confections of fried dough sprinkled with sugar or covered with honey that are still made today over much of the Southwest. They are related to fry bread and sopaipillas. The painting documents the clothing and hairstyles of the buñuelo seller and his family, a couple standing behind the vendor, a seller of fruit, a soldier and female companion, and others. The different clothing styles highlight the variety of social



Buñuelos Seller. Attributed to Manuel Serrano, circa 1850. Original in the National Museum of History, Chapultepec Castle, National Institute of Anthropology and History, Mexico.

and economic classes in the street in the evening with glimpses of their interaction. For example, the woman with the soldier is wearing more fashionable dress than the vendor. Especially valuable is a view of details of a common daily activity – the process of selling goods, including cooking and display. Beyond the physical description, one can experience the function of streets and plazas in the evening as areas of visiting and sales.

The wealth of details about the main plaza in Mexico City was not the subject of the second painting, *Visit of a Viceroy to the Cathedral of Mexico*. The artist used these complex details to put the viceroy's visit into a familiar context for the viewer. For us today, these incidental details of clothing, diverse activities, and the market are a major value of the painting. We also gain insight into the function of a plaza and a glimpse of colonial society. Finally, the painting raises questions for further research. Was this a special market day or a daily occurrence? In any regard, it challenges our cultural understanding of the function of a plaza and the use of space.

Tucson was at the far margin of the Spanish colonial system, but the three illustrations considered here are reminders that the center and the periphery were linked in very tangible ways. Although Tucson and other colonial areas were isolated by distance and hardship, they were connected to the central area through family ties, appointed officials, merchants, priests, and a common culture. While the viceroy never traveled to Tucson, lower

level governmental and clerical officials did from time to time. For example, the Viceroy of New Spain appointed Hugo O'Connor to implement the Spanish king's regulations of 1772, which led to the selection of the Tucson Presidio site. Further, local priests and presidial leaders both traveled and sent information to the centers.

The following discussion of chocolate underscores the extent to which New World goods affected the

European newcomers. The organizational effort to move chocolate, a crop grown in southern Mexico (as well as the tools to prepare it) to the distant northern frontier is interesting to ponder. The visual archive will provide a wealth of information that can be used creatively in the interpretation and understanding of a past that cannot be fully recovered.

Chocolateros

Michael W. Diehl, *Desert Archaeology, Inc.*
Christopher Sugnet, *University of Nevada*

QUECHAN REBELS caught Fathers Francisco Garcés and Juan Antonio de Barreneche at a small village near Yuma in 1781. The Quechan revolt sprang from mistreatment by the Spaniards, whose animals had eaten their crops and whose soldiers had requisitioned food. Now, a rebel leader demanded the priests leave a sheltering house to meet a certain death. Garcés protested, "We'd like to finish our chocolate first." Unfortunately for Garcés, the beverage was his last meal.

Theobroma cacao – "Cocoa, food of the gods" – is a plant native to the Central American rain forests. The shade-grown tree flowers from the trunk, producing long, narrow fruits that contain a sweet pulp and 20-60 seeds. The seeds are the source of a variety of products, including cocoa and chocolate.

The word "chocolate" derives from the Nahuatl (Aztec) word *Xocolatl*. Prehistoric Mexicans and Central Americans prepared a variety of astringent beverages from the toasted, ground seeds, and they drank the tonic from special cups. Depending on the desired taste or effect,

other additives such as chile or hallucinogenic mushrooms were added to the mix. Cocoa seeds were so precious that they were used as currency, and cocoa is known to have been an item sent as tribute to the Aztec king, Moctezuma (Montezuma).

The Spaniards took up chocolate beverages with great enthusiasm, altering them by adding sweeteners such as honey and sugar. Small vessels, called *chocolateros*, were used to prepare the substance. The soldiers and settlers at the presidio of Tucson were well supplied with both chocolate and chocolateros. We know this from the detailed inventories that Esteban Gach, provincial manager for a *tienda* or general store in the Sonoran capital of Arizpe, kept of annual shipments of goods from his business partners in Mexico City. His records indicate his customers included the presidios of Santa Cruz, Pitic, Altar, and Tucson.

From the 1785 records, we know that Francisco Luis Nuñez from Tucson held 735 pesos on account with Gach. Nuñez was the paymaster at Tucson who won a commendation in May of 1782 for defending the stockade gates against the largest Apache attack against the presidio.

In 1783, Gach notes that his costs for medium and small chocolateros averaged 4 reales, or half a peso. The regular grade of chocolate, shipped in cases of 175 pieces, priced out at 2 and 5/8 reales each, while the better ("*mejor*") grade of chocolate went for 3 and 1/4 reales. A Tucson soldier's monthly pay came to about 33 pesos, and he had to pay for his horses, weapons, uniforms and other clothing, food, and incidentals for himself and his family. Almost everything was imported. Consider that a pair of stirrups cost 3 reales and a medium-sized, tin-plated frying pan cost 4 and 1/2 reales. Chocolate was an indispensable luxury however, and undoubtedly played a part in the significant individual debts listed in inspection reports of the Tucson garrison.



Two copper chocolateros found near Marana, Pima County, Arizona. The pots are between six and seven inches tall and have riveted handles. (Arizona Historical Society, Southern Arizona Division, Catalog numbers 88.22.1 and 88.22.2.)

Three Thousand Years of Irrigation in a Riverine Oasis

Jonathan B. Mabry, Desert Archaeology, Inc.

RELIABLE WATER is the reason that the location at the base of 'A' Mountain – Tucson's birthplace – has been inhabited more or less continuously for almost 3,000 years. A barrier of volcanic bedrock, of which 'A' Mountain is the only visible portion, forces the underground flow of the Santa Cruz River to the surface. This same situation also occurs at San Xavier and at the northern end of the Tucson Mountains. Even when other stretches of the river ran dry during droughts, these places had water. With reliable water, people could irrigate their crops to ensure there would be enough food to support a permanent community.

Archaeologists have recently found many canals, both prehistoric and historic, buried in the river's floodplain. With the discoveries of canals dating between 3,000 and 2,000 years ago in the Santa Cruz Valley, the famous canals of the Hohokam culture, built between 2,000 and 500 years ago in the Phoenix and Tucson basins, no longer seem so mysterious and unprecedented. Archaeologists are now documenting a long sequence of development of irrigation technology in the Sonoran Desert, with the earliest examples (so far) found in the Santa Cruz floodplain in Tucson. These are the oldest canals yet found north of Mexico!

In some locations, series of canals are preserved in the stacked layers of river silts. Canals dating to 2,000, 1,000, 150, and 130 years ago have been found beneath the remains of the late eighteenth- and early nineteenth-century San Agustín Mission. A small canal was dug by



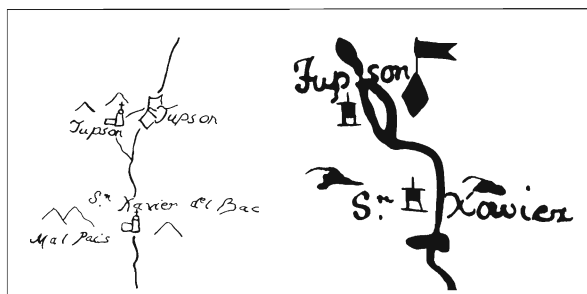
Visitors to Tucson in the late nineteenth century found a lush irrigated valley, as illustrated by this hand-tinted, turn-of-the-century postcard of a canal near the Santa Cruz River.

early farmers who settled here more than 2,000 years ago. A large Hohokam canal, built more than 1,000 years ago, is more than six feet wide and four feet deep. It was probably the largest canal in the area for at least a century. A canal about 150 years old passes south of the Spanish mission. A rock-lined canal was perhaps the tailrace from Warner's Mill, built at the base of 'A' Mountain in the 1870s.

Several other prehistoric and historic canals found near Congress Street are additional traces of the once-extensive waterworks of the first farmers of the desert, their Hohokam and Sobaipuri descendants, the Mexican irrigation community that flourished between the 1770s and 1880s, and the early Anglo-American entrepreneurs who sought to develop Tucson's agriculture and water

In 1780, Gerónimo de la Rocha visited the Tucson Presidio:

"We left the Presidio of Tucson and went one-quarter of a league to the south, and on our return I went off with Captain Don Pedro Allande to examine the dam and the place where the water is divided into three abundant acequias that serve for drinking and for cultivation of the fields of the Pueblo and the Presidio."



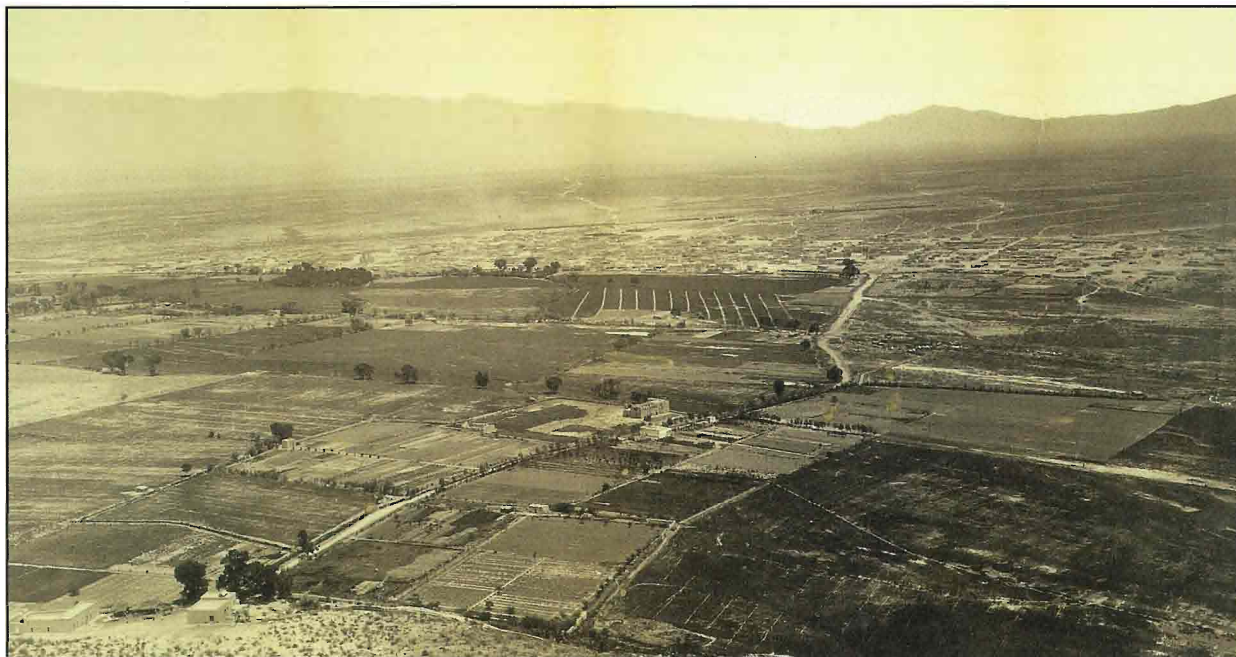
Details excerpted from Gerónimo de la Rocha's maps of 1780 (left) and 1784 (right) show a split in the Santa Cruz River at Tucson (Tupson). The left channel is the irrigation canal, or acequia, that passes west of the San Agustín Mission, creating what was often referred to as la isla (the island).

supply in the late nineteenth century.

The Santa Cruz River flowed year-round in the area of 'A' Mountain and several other stretches until a combination of natural and human-related events in the late 1880s resulted in the entrenched, dry riverbed we see today. First, drought and overgrazing by cattle lowered the water table – when it did rain, the water quickly ran off the denuded surface rather than soaking into the ground. Then, several years of floods cut the riverbed to a lower level (because a river seeks the level of the water table). The starting point of this down-cutting was a new canal built

in 1887 by Sam Hughes near Congress Street. By 1910, the river was entrenched continuously between Tucson and San Xavier. Today, the river is dry and the water table is 150 feet below the surface.

Because it is a continuous sequence extending from the recent past to the distant past, the series of canals preserved beneath the surface of the old floodplain of the Santa Cruz River provides archaeologists an important key to understanding the 3,000-year history of Tucson communities. It also reinforces the realization that, until relatively recently, the Tucson area was a riverine oasis.



Photograph by Carlton Watkins taken from 'A' Mountain in 1880, showing the agricultural fields that filled the bottomlands of the Santa Cruz River. The convento and granary of the San Agustín Mission are visible in the central foreground. This photograph was taken before the entrenchment of the Santa Cruz, and the river channel is not obvious. Tucson is a growing community on the far side of the floodplain, and just beyond it two trains are visible as dark lines – portending the imminent transformation of what is visible in this photograph.

See the Center for Desert Archaeology website for more information: <http://www.cdarc.org>

THE CENTER FOR DESERT ARCHAEOLOGY, a private, nonprofit organization, promotes stewardship of archaeological and historical resources through active research, preservation, and public outreach. The Center is a 501(c)(3) organization and is supported through donations, memberships, and grants from individuals, foundations, and corporations. Center members receive an annual subscription to *Archaeology Southwest*, substantial discounts on other Center publications, opportunities to participate in archaeological projects, and invitations to special lectures and events. For more information or to join, contact Linda Pierce, Programs Manager, at 520.882.6946 or lpierce@cdarc.org.

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Back Sight

TOTAL immersion is a great way to learn, and Tucson offers many avenues to become immersed in the past. For example, Tucson has one of the highest concentrations of professional archaeologists in the nation. The Society for American Archaeology lists 160 archaeologists in Tucson's 857-- zipcode. The next largest numbers are 101 and 98, for Phoenix and Albuquerque, respectively.

Tucson also has an incredibly large and supportive community of avocational archaeologists. It is the home for three membership-based nonprofit organizations: Arizona Archaeological and Historical Society, Center for Desert Archaeology, and Old Pueblo Archaeology Center. It has a nationally ranked Anthropology Department at the University of Arizona, and Pima Community College offers a strong selection of archaeology and anthropology classes. Within a block of one another are the Arizona State Museum and the Arizona Historical Society.

Tucson is also rich in the large number of descendant communities that live here. Already, the Rio Nuevo project has worked with Native American, Hispanic, and Chinese descendants. The photos displayed here are of four generations of the Soza (Sosa) family. Hector and Mickie Soza have been active in the Center's excavations related to the Tucson Presidio and on our fieldwork in the



Four generations of the Soza (Sosa) family. Top left: Luisa Campa de Sosa; Top middle: Antonio Campa Sosa; Top right: Carlos Moreno Soza; Bottom right: Mickie and Hector Soza. The Sozas ties to Tucson extend back to Hector Soza's great-great-grandfather, presidial soldier José María Sosa.



San Pedro Valley – where their family homesteaded in the 1880s.

The Soza family has a passion for expanding the connections to their ancestors. As researchers, there is a special reward and satisfaction in working with such highly motivated people. Also exciting are the thousands of Tucsonans who have visited excavations, museum exhibits, and websites to get closer to this past. It is an opportune time to be an archaeologist in Tucson, for it is rare that connections with people – both past and present – are so direct and so stimulating.

*William H. Doelle
President & CEO
Center for Desert Archaeology*

back sight (băk sīt) n. 1. a reading used by surveyors to check the accuracy of their work.
2. an opportunity to reflect on and evaluate the Center for Desert Archaeology's mission.

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