

ARCHAEOLOGY SOUTHWEST *magazine*

CONTINUE ON TO THE NEXT PAGE FOR YOUR FREE PDF



Archaeology Southwest (formerly the Center for Desert Archaeology) is a private 501 (c) (3) nonprofit organization that explores and protects the places of our past across the American Southwest and Mexican Northwest. We have developed an integrated, conservation-based approach known as Preservation Archaeology.

Although Preservation Archaeology begins with the active protection of archaeological sites, it doesn't end there. We utilize holistic, low-impact investigation methods in order to pursue big-picture questions about what life was like long ago. As a part of our mission to help foster advocacy and appreciation for the special places of our past, we share our discoveries with the public. This free back issue of *Archaeology Southwest Magazine* is one of many ways we connect people with the Southwest's rich past. **Enjoy!**

Not yet a member? Join today!

Membership to Archaeology Southwest includes:

- » A **Subscription** to our esteemed, quarterly *Archaeology Southwest Magazine*
- » **Updates** from *This Month at Archaeology Southwest*, our monthly e-newsletter
- » **25% off purchases** of in-print, in-stock publications through our bookstore
- » **Discounted registration fees** for Hands-On Archaeology classes and workshops
- » **Free pdf downloads** of *Archaeology Southwest Magazine*, including our current and most recent issues
- » Access to our on-site **research library**
- » **Invitations** to our annual members' meeting, as well as other special events and lectures

Join us at [**archaeologysouthwest.org/how-to-help**](http://archaeologysouthwest.org/how-to-help)

In the meantime, stay informed at our regularly updated **Facebook** page!



Archaeology Southwest

Volume 19, Number 2

Center for Desert Archaeology

Spring 2005

Mormon History and Archaeology in Northern Arizona

Alan Ferg, Arizona State Museum

IN EARLY 1876, Brigham Young, president of the Church of Jesus Christ of Latter-day Saints, called a meeting in Salt Lake City, Utah, to select men and their families to travel south and establish several Mormon colonies in the Little Colorado River Valley of northern Arizona. Two earlier attempts had been unsuccessful, but a recent scouting report had described the Little Colorado as full of clear water, with rich soil and plentiful pasture.

Young stated that the purpose of this venture was fourfold: to take possession of the land for the State of Deseret; to establish and develop the United Order; to proselytize among the Hopis, Navajos, and Apaches; and to create settlements that would serve as havens for polygamous families who were being persecuted by the United States government in Utah.

"Deseret" is from the Book of Mormon and is generally said to refer to honeybees and industriousness, with a beehive having long been associated with the Mormon Church and appearing on the Utah state seal; the State of Deseret was to be an independent Mormon homeland in the West. The United Order was an experiment in social organization, with cooperation, rather than competition, as its basis, in which all community members shared resources.

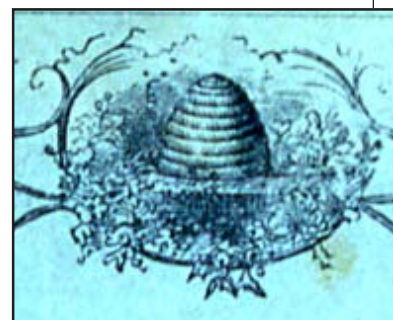
In response to Young's call, more than 200 men, women, and children headed south in the middle of winter, crossing the "Big" Colorado River at Lee's Ferry. In March, the lead members of the wagon train reached Sunset Crossing on the Little Colorado (roughly where Interstate 10 crosses the river east of Winslow). Lot Smith and

his company established Sunset, on the northeast side of the river (see page 9). George Lake and William C. Allen went farther upstream and started Obed (see page 8) and Joseph City (see page 4) on opposite sides of the river. Jesse O. Ballenger arrived in April and began the fort opposite Sunset that would become Brigham City (see page 6). By June, all four settlements were building forts to protect themselves from Indian attacks that never came, and building dams on the river to irrigate crops.

In this issue of *Archaeology Southwest*, we celebrate the perseverance, industriousness, and vision of these Mormon colonists. Various authors explore the historical and archaeological heritage of Mormonism in northern Arizona, including excavations at three of the original four Little Colorado colonies;

the short-lived Mormon occupation of the Forestdale area; the Mormon Lake sawmill, dairy, and tannery; historic petroglyphs near Joseph City; the colonies' lime kiln; Fort Moroni near Flagstaff; and the history and meaning of Mormon town plans. In addition, Benjamin Pykles and Karen Wilhelm discuss the significance of these sites to Mormons themselves.

For this issue, the Center for Desert Archaeology has become, temporarily, the Center for Deseret Archaeology!



Beehive from the cover of a Mormon text published in 1869.



Mormon sites and modern towns mentioned in this issue of Archaeology Southwest.

Richard W. Lord

*Issue Editors: Alan Ferg
and Karen Wilhelm*

Archaeology Southwest
is a Quarterly
Publication of the
Center for Desert
Archaeology



Mormon Heritage and Archaeological Sites

Benjamin C. Pykles, *University of Pennsylvania*

TO MEMBERS OF THE Church of Jesus Christ of Latter-day Saints, sites like those discussed in this issue of *Archaeology Southwest* are of inestimable value. For some, these sites are where their great-grandfathers, great-great-grandmothers, and other ancestors lived, wor-

not only to Latter-day Saints. These places are significant to all Americans because they are the surviving reminders of a crucial time in our country's history. They represent some of the earliest American settlements in the western United States and symbolize the westward expansion of

America in the last half of the nineteenth century. This was America's most expansive period, when the boundaries of the United States were extended across the continent to the Pacific. The emigrants who came to occupy these lands spread Euro-American culture throughout the region. Chief among these emigrant groups were

Courtesy of Karen Wilhelm



The town of St. Johns, Arizona, has deep Mormon roots. This photograph, taken around 1899, shows typically wide, right-angle streets and numerous trees planted for shade and windbreaks.

shipped, and died (see page 3). As such, these sites occupy a significant place in the personal and familial heritage of these individuals. For many other Latter-day Saints, however, these places are meaningful because they are where the Mormon faith was preserved and perpetuated in the everyday lives of the pioneers who willingly made sacrifices for their religious beliefs. The values, attributes, and characteristics embodied by the Mormon pioneers continue to be held up as standards that Latter-day Saints today strive to emulate. Therefore, these sites are significant not only to the direct genealogical descendants of the pioneers who lived there, but also to the millions of twenty-first-century Mormons.

The archaeological heritage of Mormonism in Arizona, and of the entire West, for that matter, is important

the Mormons, who, unlike their contemporaries, were not primarily motivated by the economic prospects of the West,

but instead, were impelled by a desire to practice their religion in peace and in isolation from those who had denied them this right. The successful expansion of Mormon colonies during this period, stretching from southern Canada to northern Mexico, has left a lasting imprint on the land.

Mormon archaeological sites should be protected and preserved for all Americans, Mormon and non-Mormon alike.

These sites are the tangible evidence of a people's enduring faith during a period of history that forever changed America. May we all feel a sense of ownership and responsibility for these important places, and protect and preserve them for future generations.

Courtesy of Karen Wilhelm



The 1912 J. P. LeSueur house in Eagar, as it looks today.

Mormon Memories

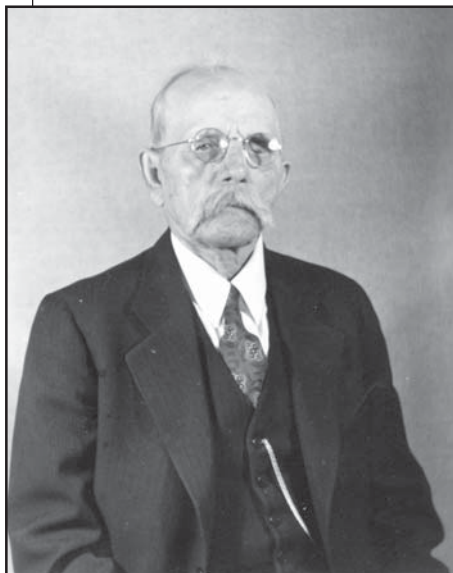
Karen Wilhelm

IT ALL BEGAN with a simple request from my grandmother. We had been talking about archival storage for our photographs, and Grandma wanted help in redoing her photo albums. I had never been very interested in my ancestors, but as I assisted my grandmother, I became cu-

excavations I began to feel closer to my ancestors; being there, I could picture what their life had been like.

My great-great-grandmother Anna Amalia Anderson Peterson was one of the cooks at the Brigham City Fort. When she arrived from Denmark, she spoke hardly any English, and said later that her time as a cook helped her learn the language. My great-great-grandfather Marcor Hansen Peterson was the shoemaker at the fort and had his own little shop. I could envision their daughter, my great-grandmother, Annie Johannah (Hannah) Peterson Davis, running around the fort playing with the other children. I could imagine their voices as they played their games and I could see her clutching the little doll she received one Christmas—the doll's ceramic head made by the resident potter, Brother Behrman, and the doll's body sewn together by her mother.

After a four-year search through old records and conducting interviews with local area residents, I was able to discover the location of Obed Fort, which my great-grandfather, Edmond Nelson, had helped build nearly 130 years ago. I was gratified to be able to stand where he had stood and look across the landscape from the same vantage point. Great-grandfather Nelson was in charge of the bull teams that hauled the rock used in building Obed Fort. As I gazed across the area, I pictured him scouting for the best places to find the rock, using a pick to quarry it, loading the wagons and hauling rock to the fort site, then building the walls of the fort. After a two-week stint spent helping lay up rock walls at Brigham City, I gained a lot of respect for these hard-working people, some of them my ancestors.



Top left: Edmond Nelson, who helped to build the Obed Fort, in a 1920s photograph. Top right: The man and the woman in the middle of this photograph are Marcor Hansen Peterson, who ran the shoe shop at Brigham City, and his wife Anna, who is holding their daughter (Karen Wilhelm's great-grandmother); taken shortly before they left Utah (photographs courtesy of Karen Wilhelm). Left: Avocational archaeologist Karen Wilhelm in the colonies' lime kiln.

rious about the strangers looking out at me from the pages of her albums.

I began to search through old, dusty records for more information. One set of great-great-grand-

parents and a great-grandfather were among the first Mormon colonists sent to Arizona in 1876 to settle along the Little Colorado River in the area of Sunset Crossing near present-day Winslow and Joseph City, Arizona. When the opportunity arose, I became involved in efforts to excavate and restore one of those settlements, Brigham City (see page 6). Working at the Brigham City



Richard W. Lord



Bull Teams at the Obed Fort, by John Wilhelm, 1997.

Joseph City

Alan Ferg, Arizona State Museum

BUILDING A 10-FOOT EARTHEN DIKE atop the site of one of the oldest Mormon forts in northern Arizona did not seem like a good idea. As Interstate 40 was being completed near Joseph City, the Arizona Department of Transportation agreed to move its flood-control feature away from the site, and sponsored limited archaeological test excavations outside the fence that protects it. That is where, in 1979, while working for the Arizona State Museum (ASM) Highway Salvage program, I was introduced to Mormon archaeology.

I learned that the Old Fort at Joseph City was built in 1876, as were its companion forts at Sunset, Obed, and Brigham City. Unlike these, however, the Old Fort was a U-shaped arrangement of three rows of rooms. A fourth side was never built, as it became clear that the Indian attacks were not forthcoming, and families started to build individual homes near the fort. The Old Fort saw various uses over the years and was finally completely abandoned in 1896, having served its purpose as the birthplace of a permanent Mormon settlement in the Little Colorado River Valley—the only one of the four colonies to survive. Around 1906, the last of the fort's structures was accidentally burned down by children trying to roast a rabbit they had shot.

Today, the Old Fort consists of a fenced property on the north side of old Route 66 and it is easily accessible from the interstate. Nothing shows on the surface because it has been repeatedly plowed and planted, and ultimately, covered with 18 inches of fill. Nevertheless, I have learned several important lessons from the Old Fort over the years.

I came to understand that much of the Euro-American portion of east-central Arizona's territorial-era history was Mormon history. Thanks to Nephi Bushman, who

worked at ASM when I was writing a report on the Old Fort, I was introduced to Paul H. Peterson's 1972 Master's thesis, *An Historical Analysis of the Word of Wisdom*. I learned that the doctrine expressed in the *Word of Wisdom* was viewed by Mormons as divine revelation, but that doctrine

had also been modified over the decades by subsequent revelations. This was historically interesting to me in itself; I had wondered about the origins of the Mormons' avoidance of alcohol, caffeine, and tobacco when I was a student the previous summer at the University of Arizona archaeological undergraduate field school in Snowflake, a Mormon community. But it also involved a revelation of another

kind: there was no reason that artifacts related to these substances—such as bottles for alcohol and patent medicines, coffee or tea containers, and smoking pipes—would not be found in nineteenth-century Mormon sites. I also learned that discerning ethnicity in the archaeological record was not as simple as I had at first thought it might be: the mere presence or absence of these kinds of artifacts in an artifact assemblage was not a reliable way to differentiate Mormon and non-Mormon sites.

However, perhaps the most important thing I learned was that even though there is not much left of the Old Fort, the location is still important to the Mormon community. I am not a Mormon, but I think everyone considers certain places special and has some understanding and appreciation of such matters. The Old Fort may look like a flat piece of real estate with a three-strand wire fence around it, where visitors stop to read the bronze plaque in the petrified wood monument, but the site gets weeded, is occasionally planted with corn, and remains the very real heart of Joseph City.



Sketch of the Old Fort by Jack Pickett, done in 1947, from a description furnished by Sophie D. McLaws (from *Unflinching Courage*, by Adele B. Westover and J. Morris Richards [1963]).

Irrigation in Joseph City: Mormon Persistence on the Little Colorado River

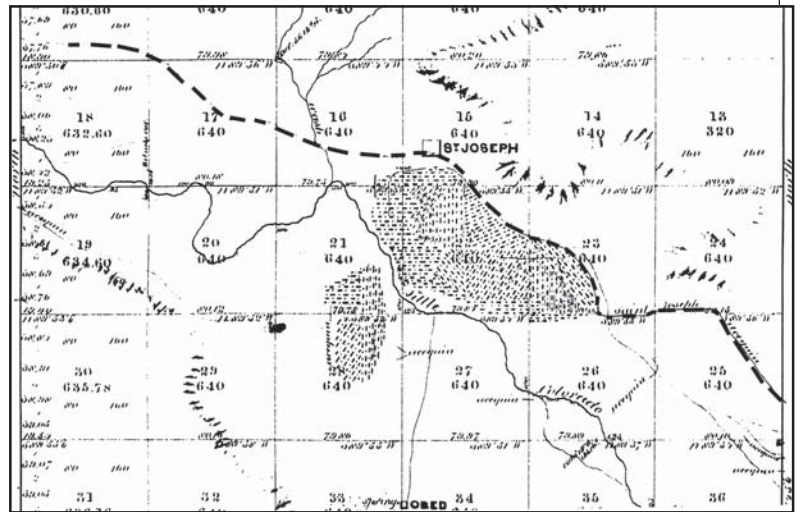
Jon S. Czaplicki, Bureau of Reclamation

SOMETIMES THINGS DON'T go the way they are supposed to. In 1876, farmers at the fledgling Mormon settlement of Joseph City (first known as Allen's Camp), on the Little Colorado River in northern Arizona, built a dam to divert water into a new irrigation system. The first Mormon dam was washed out not long after it was completed, was rebuilt, and washed out again. This cycle was repeated at least seven times between 1876 and 1924, as the Little Colorado River seemingly dared the Mormon farmers to settle along its banks. But settle they did. They rebuilt the dams when they washed out and made repairs when floods damaged, but did not destroy, the dams.

Almost 130 years after it was built, the Joseph City irrigation system is still in use today and is operated by volunteers from the Joseph City Irrigation Company. Over the years, portions of the irrigation system have been upgraded and improved, work that continues to this day. The community of Joseph City and the irrigation company are working to pipe and bury approximately 60 percent of the system that runs through the town. The remaining portion of the canal system that extends beyond the town will remain open canal.

The Bureau of Reclamation recently provided grant money to the irrigation company to assist it in piping another portion of the canal system. By providing federal funds, the Bureau of Reclamation, under the National Historic Preservation Act, had to determine if the irrigation system was eligible for nomination to the National Register of Historic Places. Through its contractor, Archaeological Consulting Services, Ltd., the Bureau of Reclamation undertook an eligibility assessment of the irrigation system that concluded the system was indeed eligible for inclusion in the National Register.

According to anthropologist William S. Abruzzi, the Joseph City irrigation system "constituted one of the most



Top: Government Land Office map surveyed in July 1879, showing Joseph City ("St. Joseph"), its irrigated fields (stippled areas), and the main canal (dashed line) that drew water from behind an upstream dam. Obed, shown at the bottom of the map, was already abandoned at this time. Left: 1894 Joseph City Dam.

expensive community investments in productivity along with other Mormon settlements in the Little Colorado River Basin throughout the nineteenth century." Joseph City, among other Mormon communities, played an important role in the early history of Mormon colonization in the middle Little Colorado River Valley. Today, Joseph City is the oldest Mormon community in Navajo County. Mormon settlement at Joseph City is intimately tied to the struggle to harness water of the Little Colorado River and deliver it through an irrigation system to the fields that supported the community. The Bureau of Reclamation, working with the Joseph City Irrigation Company and the Arizona State Historic Preservation Office, will conduct additional archival research and develop an appropriate format to commemorate this historic irrigation system and the persistent Mormon farmers who built their town around it.

Brigham City, Winslow, and Prospects for Renewal

Alan Ferg, Arizona State Museum

BALLENGER'S CAMP, one of the four Mormon colonies along the Little Colorado River in northern Arizona, was formally named Brigham City in 1878 in honor of Mormon leader Brigham Young. Brigham City was reasonably prosperous and could boast a school, gristmill, pottery, tannery and blacksmith's shops; it also participated in the operation of a sawmill and dairy (see page 10). But the country was hard and the river capricious, repeatedly washing out numerous dams over the years. Families began to move to other settlements, and in 1881 the Mormon Church released the remaining families from their obligations. Virtually abandoned by its settlers, Brigham City was used briefly as the local headquarters during construction of the Atlantic and Pacific Railroad, and with the arrival of the railroad, the City of Winslow was born. The Brigham City property then changed hands twice before being purchased by Fernando Thornton La Prade in 1890.

Over the next 57 years, the La Prade family farmed and operated the Sunset Dairy on the old fort and surrounding properties. Most of the fort's buildings were dismantled and the stone recycled into new structures, including the huge La Prade barn. In 1947, the property was acquired by the City of Winslow and then leased out as part of the City Farms. The remodeled western two-thirds of the fort's communal dining hall had served as a private home, first for the La Prades and then for the families that followed, up to 1980.

The Brigham City Fort was built as a square, about 200 feet per side, with an eight-foot-tall exterior wall made of locally quarried Moenkopi sandstone. It had bastions at the northeast and southwest corners, wide gates in the center of each side of the fort, and a variety of outbuildings and corrals. Today, the only standing portions of the original fort are part of the dining hall and portions of the east wall, which was incorporated into the La Prade barn.

Archaeological investigations at Brigham City began

in 1977, when Archaeological Research Services, Inc., and the historical architectural firm of Gerald A. Doyle and Associates conducted test excavations and documented the remaining structures at the site for the City of Winslow. In 1988, the Brigham City Restoration Committee was formed to restore the site to its original appearance. Between 1991

and 1995, members of the Arizona Archaeological Society conducted additional test excavations here (see page 7). Although they hoped to excavate the potter's living quarters and the shoe shop operated by Marcor Hansen Peterson (see page 3),

testing showed both rooms were destroyed when the entire southwest quarter of the fort was plowed for farming.

There were hopes that Brigham City could become another tourist destination in the Winslow area, along with Homolovi Ruins State Park, La Posada Hotel, a Hubbell trading post, and local attractions related to State Route 66 and the nearby Hopi mesas. Winslow businessman and Mormon Church Elder Harry Hancock began a reconstruction of the southwest bastion and the walls of the fort, but this personal effort has stopped for the time being. And in spite of general community interest, neither public nor church funding has been forthcoming to totally re-

build the Brigham City Fort.

Ironically, as the original Brigham City has deteriorated over the decades, reduced-scale replicas of its walls and circular bastions live on in the heart of Winslow. Architect Mary Coulter, famous for her Harvey Company hotels and complex of buildings at the Grand Canyon, used extensive sandstone walls—some say they were constructed using the actual stones of Brigham City—to enclose the lawn and gardens on the west side of the La Posada Hotel complex north of the railroad. Built in 1929, both La Posada and its garden walls are still there. What the future holds for the Brigham City Fort is hard to foretell.

Richard W. Lord



Richard W. Lord



Top: Janice Griffith, director of the Old Trails Museum (in blue shirt), watches (left to right): Marty Tagg, Lori Hawthorne, Bill Davis, and Alan Ferg excavating Behrman's workshop, kiln, and the northeast bastion in 1991, with the old dining hall in the background. Bottom: The northeast corner of the fort after excavations were backfilled and low walls built to show the locations of the buried features.

Brother Behrman's Pottery

Alan Ferg, Arizona State Museum

Tobi Taylor



Glazed and unglazed milk-settling pan rim sherds.

he could supply the Little Colorado colonies with crockery. In 1879, he moved to Colorado and apparently never made pottery again.

Behrman's workshop was 18 feet square, with a flagstone floor, opening into the 10-foot-diameter bastion on the northeast corner of the fort (see page 6). The kiln, which was built of unfired bricks of local clay, was about 6 feet wide and 10 feet long; it was apparently the only nineteenth-century European-style kiln in Arizona. Behrman was probably firing his pieces with wood (and possibly coal), and he achieved temperatures hot enough to partially melt and vitrify the inner faces of bricks in the kiln walls. When excavated, the remains of the kiln's foundation measured only about a foot high, but the foundation did contain some details of the ventilation system. In the southeast corner of the room was a dense pile of broken pottery and kiln furniture—probably lying where Behrman discarded them after his last use of the kiln 125 years ago.

In addition to the kiln itself, virtually every step in the pottery-making process was

THE WORKSHOP AND KILN of Brigham City's potter, Wilhelm Frederick Otto Behrman, was excavated in 1991 as a joint project of the Arizona Archaeological Society, the Brigham City Restoration Committee, and the Old Trails Museum in Winslow. (The kiln's location had been discovered during test excavations by Archaeological Research Services, Inc., and Gerald A. Doyle and Associates in 1980.) Behrman, who was born in Denmark, worked as a potter in Ephraim, Utah, around 1870, and was among those Mormons called to Arizona in

1876, presumably so

recovered, including raw clay, unfired sherds, sherds from successfully fired vessels, vessels broken in firing, charcoal, and ash. Neutron activation analysis, conducted by Patrick D. Lyons of the Center for Desert Archaeology on a few fired and unfired sherds and on a sample of raw clay from directly underneath the northeast bastion, shows that the clays in all are very similar, and that is distinct from clays used by prehistoric Native American potters in the area.

Behrman's pots are low-fired utilitarian redwares with a greenish-yellow glaze on one or both surfaces. His vessel forms include various sizes of crocks with lids, small plates or saucers, probable water pitchers, and—perhaps his most common product—large, slant-sided bowls (known as "milk-settling pans") probably destined for the dairy at Mormon Lake.

Behrman's pottery, with its very short period of production—1876 to 1879—would be useful to archaeologists attempting to date sites in which it was found. However, his wares have only been found at Brigham City, Joseph City, and Millville at Mormon Lake.

In fact, the presence of these distinctive green-glazed redware sherds was critical to archaeologists' identification of the site of Millville (see page 10).

Finally, the excavation of Behrman's kiln had an unusual application. Samples from the kiln bricks were submitted to an archaeomagnetic laboratory, producing one of the most tightly clustered sets of readings yet run for the Southwest. In a reversal of the usual situation, the archaeologists were able to tell the laboratory technicians that the samples were fired

between 1876 and 1879, which helped them to calibrate the recent historic portion of the curve used to calculate archaeomagnetic dates. This has improved the accuracy of dates that can be provided to other archaeologists using archaeomagnetic samples to date historic sites in the Southwest.

Richard W. Lord



Richard W. Lord



Top: Melted inner faces of kiln bricks. Bottom: A misfired crock lid.

Obed: Death of a Mormon Colony

Alan Ferg, Arizona State Museum

AN APPARENTLY IDEAL LOCATION turned dangerous not long after the Mormon colonists chose the site on which to build the Obed Fort in 1876. The site was located next to two freshwater springs feeding a lush cienega, full of cattails and fish, that the Mormon colonists named Obed Meadow. With a source of easily quarried sandstone nearby, the colonists, including Edmond Nelson (see page 3), built a stone fort in about six weeks in the withering heat of the summer. Colonists' journals recorded that it was 12 rods (198 feet) on a side, with bastions on the northeast and southwest corners, and walls 9-10 feet tall that were two to three feet thick at the base and tapered toward the top. It is unclear if the south wall was ever built to its intended height.

Then people started getting sick. In the fall of 1877, the settlers recorded an outbreak of "Malaria fever and ague," with so many falling ill that there were not enough healthy people to care for the sick. By December, the most massive of the Little Colorado forts lay abandoned, the majority of the survivors moving to Brigham City.

What happened? The mosquito species known to carry malaria, *Anopheles freeborni*, is present in the area today, and could also have been present in the 1870s. But nearby Joseph City did not suffer from this outbreak, and it has been argued that the culprit was more probably typhoid, resulting from inadvertent contamination of the springs. Obed was the only colony that used surface water for domestic use; the other three all used wells. Whatever the cause, Obed's proximity to its springs and Obed Meadow was its undoing.

After 1884, the abandoned fort was reportedly used as a corral by the Hashknife cowboys of the Aztec Land and Cattle Company and was later torn down. Its stones were first reused to line a farming reservoir, and then utilized as riprap for the bridge across the Little Colorado River to Joseph City. When archaeologists

were working at Brigham City (see page 6), they often heard about Obed, but no one could pinpoint where it was located. Research using historical documents and maps led to the "rediscovery" of Obed in 1995 (see page 3), about three miles south of Joseph City. It was bisected by a Navajo County road adjacent to DeSpain's LX Ranch. With permission from the landowners—the Aztec Land and Cattle Company, Arizona Public Service, and the Navajo County Highway Department—and the encouragement of Milton and Jay DeSpain—test excavations over the next three years by Arizona Archaeological Society members revealed most of the foundations of the Obed fort.

It was exciting to prove that the historical descriptions of the fort were extremely accurate, including the improbable-sounding three-foot-wide foundations. The layout of Obed was virtually identical to those of the Brigham City and Sunset forts: a square with circular bastions on the northeast and southwest corners. Evidence for only one internal structure was found. Because the structure was so well preserved, it may have been built later by the Hashknife cowboys, though its fireplace was identical in construction to those found at Brigham City and to a nineteenth-century Mormon house in nearby Woodruff. Artifacts were extremely scarce; with such a short occupation, and systematic abandonment, probably few items were left at Obed.

Obed Meadow dried up after the 1960 construction of the Cholla Power Plant lowered the local water table. The mosquitoes are gone, but so are the cattails and fish. Now this part of the valley is like much of the rest—a marginal pasture for cattle browsing among the camelthorn, with fourth- and fifth-generation ranchers hoping for rain.



Looking down on the foundation of the southwest bastion, with an interior diameter of 10 feet, and the 3-foot-wide western wall extending to the north.



The southeast corner of the fort, looking down the length of the south wall, with Arizona Archaeological Society volunteers spaced every 20 feet.

Richard W. Lord

Sunset Fort and the Sunset Pioneer Cemetery

Kenn Evans, Homolovi Ruins State Park

ALL THAT REMAINS of Sunset Fort, one of four Mormon settlements in northern Arizona, is the Sunset Pioneer Cemetery, now inside the boundaries of Homolovi Ruins State Park.

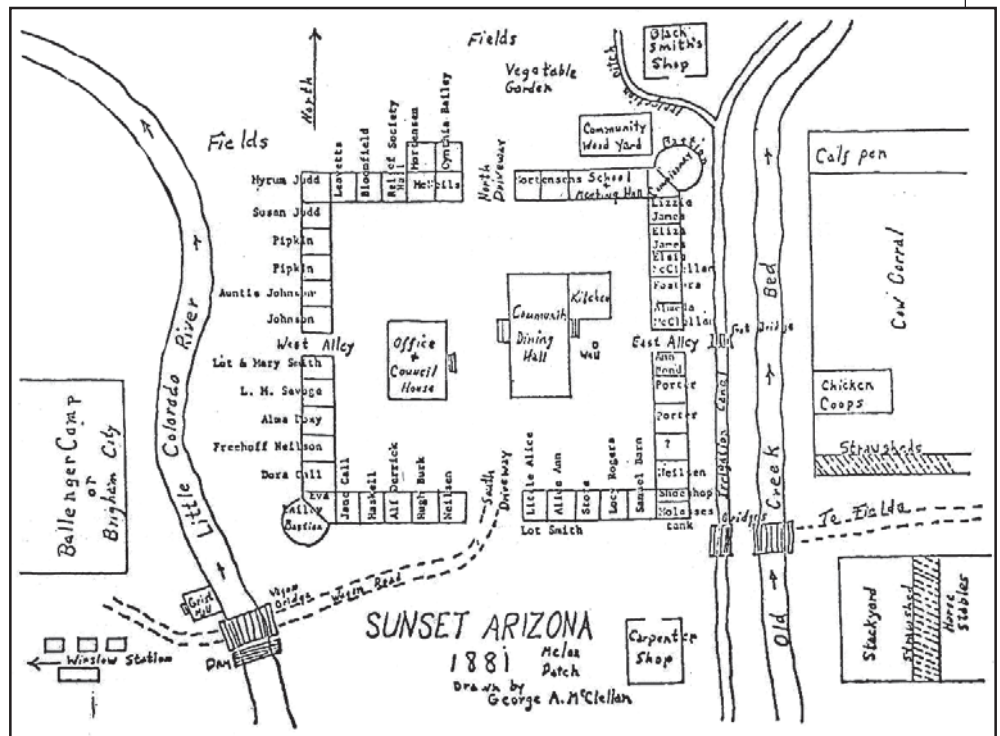
Life along the river was far from easy. Despite the warnings of nearby Hopi farmers, all four Mormon colonies were initially built in the floodplain. The river frequently flooded, washing out the dams the Mormons had built and destroying their crops before they could be harvested. The colonies of Obed, St. Joseph, and Sunset relocated to higher ground, and on Christmas Eve 1876, Sunset's leader Lot Smith and his followers moved into the newly built fort of Sunset.

Sunset Fort was built of upright cottonwood logs and measured 321 feet square. Inside were 31 14-by-16 foot dwellings, a dining hall, a schoolroom, a kitchen, two storerooms, a granary and a corncrib. The stone for some of the fort's walls was collected from the nearby ancestral Hopi site of Homolovi.

The United Order system was practiced at Sunset, whereby all property that the colonists possessed, their labor, time, and talent were to be given to the community for the greater good. There was also supposed to be an appraisal of property and a separation of duties and responsibilities. However, some settlers complained about Smith's handling of the bookkeeping and other matters, and an investigative committee was established. In 1881, the settlers were released from their calling to the Little Colorado River settlements and moved to other missions in Manassa, Colorado, and Safford and Graham, Arizona. In 1888, Smith himself was released from his calling and moved to Moenkopi, near Tuba City, Arizona. Sunset Fort was abandoned

at that time and by 1933, had washed down the Little Colorado as the river repeatedly shifted its channel.

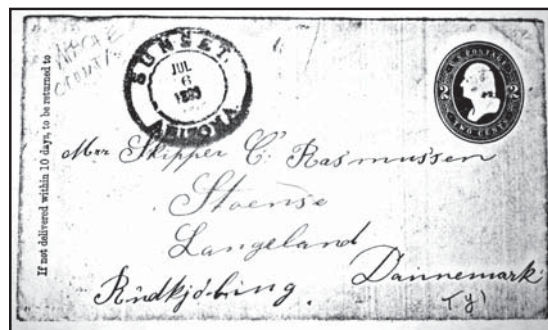
The Sunset Pioneer Cemetery survived because it was situated on a hill near the fort. The majority of the individuals buried there were associated with Sunset Fort. Although some of the cemetery's original gravestones are in



Plan view map of Sunset Fort, drawn by George A. McClellan in 1881 (courtesy of Gerald A. Doyle and Lyle M. Stone).

place, many others have been removed by vandals throughout the decades and some headstones have been replaced by descendants of the settlers. Over the past 13 years, a list of those interred at the cemetery has been compiled by examining headstones, reviewing the journals of the settlers, and working closely with the local Mormon community.

Of the 23 people I have been able to identify, one was a non-Mormon. The others consisted of six adults, seven children, and nine infants or newborns—several of whom appear to have succumbed to the area's harsh winters.



The first post office in the Little Colorado area was established at Sunset on July 5, 1876, and closed on November 23, 1887. This envelope was canceled on July 6, 1885, when Lot Smith was postmaster (courtesy of Kenn Evans).

The Mormon Lake Dairy, Sawmill, and Tannery

Pat H. Stein, Arizona Preservation Consultants

AS PART OF AN EFFORT to become more self-sufficient, Mormon colonists from Brigham City, Obed, Sunset, and Joseph City collaborated during the 1870s to establish home industries, which included a dairy, a sawmill, and a tannery.

The Mormon pioneers sited these communal industries in and near Pleasant Valley (Mormon Lake), about 45 miles southwest of Sunset (see page 1). The valley offered plentiful water, lush summer pasturage, and vast stands of ponderosa pine. The upland paradise was an area that the Mormons were eager to claim but not colonize on a year-round basis because of the high altitude, with its short growing season.

The portable, steam-powered sawmill was donated to the Little Colorado camps by the Mormon Church, and was delivered to them at Lee's Ferry in the late summer of 1876. The mill was installed about five miles southeast of Mormon Lake, and by early November, it was in full production.

The mill, which was capable of processing about 10,000 board-feet per day, ran by means of a quarter-mile-long flume

that delivered water from a spring. Carpenter John McLaws fashioned the rough lumber into millwork, doors, cupboards, and other furnishings that made life in the forts more bearable.

The nearby dairy, established in September 1878 by Lot Smith, was equally successful. Forty-eight men and 41 women from the Little Colorado forts soon staffed the facility, tending a herd of about 115 milk cows and making butter and cheese. The livestock grazed on the meadows during the day and were driven to corrals at night. The herd not only supplied the forts but also produced a surplus for markets beyond the Little Colorado.

The third home industry in the Pleasant Valley locality was the least successful. Leather was an indispensable material for shoes, boots, harnesses, saddles, and many

other articles, but it was in chronic short supply among the Little Colorado colonies. Therefore, the Mormon camps collaborated in the fall of 1879 to set up a tannery at the sawmill (by then called Millville). After much effort and experimentation, the Millville tannery succeeded in producing only an inferior grade of leather. The failure of the tannery was attributed to inexperienced workers and poor raw materials.

The disbanding of the colonies in the early 1880s brought the demise of the three home industries. Only the sawmill experienced an afterlife. Church officials transferred the machinery to Pinedale, Arizona, in 1882 and to Pinetop, Arizona, in 1890. By the early 1900s, the mill was in Lakeside, Arizona, providing lumber for the homes of Mormons and non-Mormons alike. The mill eventually burned down at that location.

In the late 1930s, the U.S. Forest Service was conducting a timber sale near Mormon Lake when the operation was visited by L. S. Kartchner, the ranger in charge of the sale, and his father. The elder Kartchner, then approaching his seventy-fourth birthday, recalled how he had gone to the sawmill as a teenager in 1879 to get lumber. He pinpointed the location of the former mill site, by then reduced to rubble foundations. From old stumps and newer trees surrounding the site, Forest Service staffers deduced that the pioneers had clear-cut the forest for several miles in all directions.

The remains of the mill site were first recorded by Coconino National Forest archaeologists in 1978. Forest archaeologists revisited and recorded the site in greater detail in 1987. The occurrence of green-glazed redware—the unmistakable handiwork of Brother Behrman of Brigham City (see page 7)—confirmed the connection of the site to the Little Colorado camps. The exact location of the old dairy is unknown, although it may be under the waters and mud of Mormon Lake itself.

Although short-lived, the communal industries of the Mormon Lake area helped the Mormon camps become more self-sufficient. Today, place names such as Mormon Lake, Mormon Mountain, Dairy Spring, Smith Spring, and Sawmill Spring each bear witness to the determined efforts of the early colonists.



Looking west across Mormon Lake at Mormon Mountain, with Dairy Spring at its base, February 2005.

Richard W. Lord

Ed Riggs



Ed Riggs



Masonry foundations found at Millville, September 2002; the higher piles of stones are the remains of fireplaces.

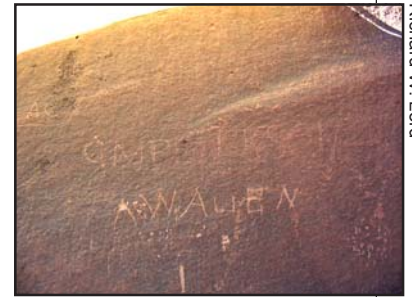
Mormon Petroglyphs at Tanner Wash

Peter J. Pilles, Jr., Coconino National Forest

A FEW NAMES in English letters, a few small panels of prehistoric petroglyphs, and some elements that may be modern copies of the petroglyphs are scattered among the large boulders of Moenkopi sandstone that define the western edge of Tanner Wash, just east of the Old Fort at Joseph City (see page 4). In contrast to the Native American glyphs, which were pecked through the darker surface patina of the stones, the names were lightly scratched in, with single lines, leaving block-printed “calling cards.” These names are nearly invisible, yet they constitute another aspect of the historical archaeology of the Little Colorado. They may also be a tangible reminder of an early friendship.

The clearer of the two inscriptions is “A. W. Allen,” and the name above it is “C. M. Peterson.” Andrew Wainsley Allen was the son of William C. Allen, one of the leaders of the Mormons’ expedition to northern Arizona. Born in Draper, Utah, in 1869, Andrew accompanied his father to Arizona in 1876. While at the Old Fort, Andrew

helped care for the colony’s cattle. C. M. Peterson is probably Charles Mauritz Peterson Jr., rather than his father; it seems likely that the young Andrew Allen would have been friends with someone closer to his own age rather than with the elder Peterson, particularly if these glyphs were made while Andrew was tending cattle. Charles was five years younger than Andrew, was also born in Draper, and he accompanied his parents to Arizona three years after the Allens arrived. Andrew left the Old Fort in 1884, and the Peterson family left in 1891. If the two boys were together when they carved their names on this boulder, it must have been sometime between 1879 and 1884. However, they met again back in Draper, where Andrew married Charles’s older sister Hannah, in 1894.



Richard W. Lord

The names of “C. M. Peterson” and “A. W. Allen” are barely discernible on a boulder on the western edge of Tanner Wash, near Joseph City.

The Little Colorado Colonies’ Lime Kiln

Alan Ferg, Arizona State Museum

WOOD, FIRE, AIR, AND LIMESTONE: not an alchemist’s formula for some arcane substance, but instead, the recipe for making lime. Although all of the early stone masonry at the four original Little Colorado forts used mud mortar, cement (to do brick construction) and white paint were soon in demand—and lime is the critical ingredient in both. To haul in lime from elsewhere would have been prohibitively expensive. To maintain the colonies’ self-sufficiency, men from Brigham City (see page 6) and Sunset (see page 9) built their own lime kiln near limestone outcrops to the south of the colonies.

The kiln stood about nine feet tall, with a D-shaped foundation of large limestone blocks and upper walls of thin sandstone slabs. Inside the kiln, multiple layers of crushed limestone were alternated with loosely stacked wood fuel (to allow airflow) and set alight. The lower limestone walls were lined with bricks (probably made at Brigham City by Brother Behrman; see page 7) so the burning would not convert the walls themselves to lime; had some other type of large stones been available nearby, the Mormons would not have used limestone in the kiln’s

construction. When the fire had burned out, and kiln cooled, a hole was broken in the flat face of the kiln and the lime shoveled out. This type of kiln is referred

to as a semicontinuous vertical kiln because firings have to be done serially by replenishing the materials, usually from the top. The access hole in the flat side of the kiln had to be broken open and then re-closed with masonry each time a load of lime was burned and removed.

This intriguing artifact of nineteenth-century technology now sits alone in the forest, apparently undisturbed since the last time it was used, with the final load of lime still sitting in the bottom. Its remarkable preservation is due to its sturdy construction and—perhaps more importantly—to the protective attitude of the private landowner on whose property it rests, as well as the diligence of the ranch foreman who keeps an eye on it.



Karen Wilhelm

Alan Ferg and avocational archaeologist John Wilhelm look at artifacts next to the Mormon lime kiln.

Mormon Settlement of the Forestdale Valley

Lauren Jelinek, University of Arizona

ABANDONED LESS THAN SIX YEARS after its founding, the Mormon settlement in the Forestdale Valley, on what is now the Fort Apache Indian Reservation in east-central Arizona, continues to raise questions. The settlement in the Forestdale Valley, 60 miles south of Holbrook, near present-day Show Low, was one of the earliest attempts to expand Mormon colonization farther south in Arizona Territory. When the Mormon colonists arrived in Forestdale in 1878, they settled an area they believed was public land. The Mormons invited several Apache families to return to their farms, in hopes of converting them to Mormonism. These missionary attempts failed, and the Apache families demanded the removal of the settlers.

Because the Apaches had used the valley before the Mormons arrived, Indian Agent Tifany at the then White Mountain Indian Reservation, ruled that the valley was part of the reservation and, in 1879, asked the Mormons to leave. In contrast, D. E.

Adams, one of the Mormon colonists in Forestdale, suggests that Corydon Cooley, a wealthy local rancher and farmer, was responsible for the Mormons' removal because Cooley feared the Mormon production of corn in Forestdale would spoil his own market in Fort Apache. Adams felt that the Apaches became hostile because of Cooley's influence.

In 1880, General Carr, the new commanding officer at Fort Apache, assured the Mormons that the colony was not inside the boundary of the reservation and that they could return to Forestdale. The next year, 20 Mormon families returned to Forestdale and built a church. There is some indication that increased tension on the reservation had made the colonists fearful. When the Apaches returned to the valley in 1882 to plant their summer fields, officials at Fort Apache ordered the Mormons to leave, and

the settlers decided to abandon Forestdale.

One Apache consultant related a different account of the events in Forestdale. He recalled that the Mormon settlement had many houses near plum orchards and cornfields and that the local Apache chief told the Mormons to leave the valley. The Apache families then divided the Mormon homes and fields among themselves, while the chief took possession of the only two-story house. One September, all of the Apache families went to nearby Whiteriver

for a big fair. While they were gone, an Apache set fire to all of the houses, but apparently not the church, which was the only building remaining in 1901 when archaeologist Walter Hough, of the Smithsonian Institution, visited the valley.

In 1939, the building locally known as the "temple" was still standing, and Frederick Scantling, a University of Arizona student of archaeologist Emil Haury, collected samples from four of the logs in its walls, all

of which proved to be from ponderosa pines cut in 1881, which corroborated its reported construction during the second attempt to colonize the valley. At some point, this building also disappeared, perhaps scavenged for its timbers, which may yet be found incorporated into other historic structures in the area. Although none of the original Mormon structures remain at Forestdale, it is possible to recognize some of the areas where they were located. Oral history and documentary evidence show that the Mormons were farming near water sources, and two plum orchards frame the eastern end of the valley. Apache and Mormon consultants have said that the Mormons planted these orchards. There is also a scatter of Mormon-era artifacts between these two orchards. The plum orchards now stand as the most visible evidence of what proved to be the brief Mormon occupation of the Forestdale Valley.



The Forestdale "temple" in 1941 (photograph by Emil W. Haury, courtesy of the Arizona State Museum, Negative No. 665).

Finding Fort Moroni

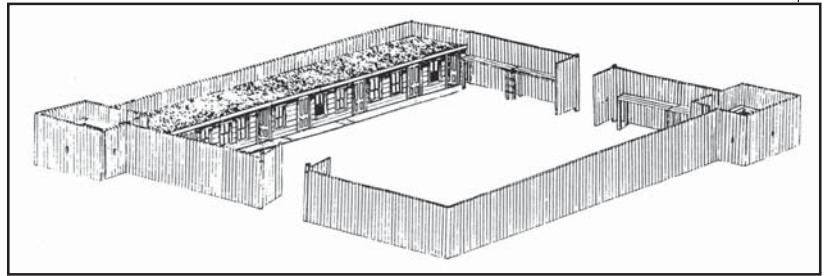
Robert A. Coody

THE ONLY DEFENSIVE STRUCTURE of its kind in northern Arizona, Fort Moroni—built in 1881—was torn down in 1920, and its exact location became a mystery over the next 60 years.

The winter of 1879–1880 was one of extreme food shortage for the Mormon colonies along the Little Colorado River. The settlers needed money to buy provisions until their crops were more successful. John W. Young, son of the Latter Day Saints' president, Brigham Young, and counselor in the Mormon Church's hierarchy, saw the coming of the Atlantic and Pacific Railroad to northern Arizona as a way to provide employment and income to the colonists. He secured a grading and tie-cutting contract with the railroad, and in 1881, his crew encamped at Leroux Spring, six miles northwest of Flagstaff. Years earlier, John Young had foreseen the value of the spring and in 1877 laid claim to it by building a cabin there with men from Sunset and Joseph City (see pages 4 and 9). In June 1881, Fort Moroni was built as a shelter for the railroad construction crews and defense for local settlers against anticipated Apache raids, which never occurred. Today, the area is known as Fort Valley.

In the mid-1980s, I conducted an archaeological survey of the Fort Valley area, with the support of the Museum of Northern Arizona (MNA) and the Arizona State Parks, to determine the locations of historic sites, including Fort Moroni. In 1987, a testing project was conducted in the vicinity of the fort. Instead of finding evidence of the fort's original stockade, we encountered coal and worked metal, suggesting that we were excavating the northwest corner of the fort, where there had been a shed containing a forge attached to the north wall.

At this time I decided I would do an experiment. In 1906, cowboy and author Earle R. Forrest took a photograph of the fort. By then, the fort had passed into the



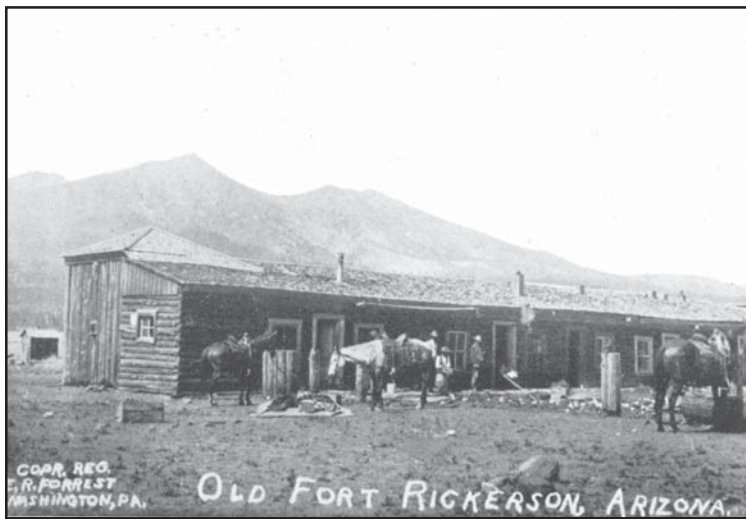
A reconstruction of what Fort Moroni probably looked like in 1881. The fort was a true frontier-style defensive structure, with grand entry gates, walls constructed of upright sharpened posts in which there were loopholes for firing, and bastions on the diagonal corners (drawing by Robert Coody, courtesy of the Museum of Northern Arizona).

hands of the Arizona (or A One Bar) Cattle Company and was renamed Fort Rickerson in honor of the company's treasurer. I was allowed to borrow Forrest's original camera and glass-plate negative from MNA in Flagstaff. I set up the camera near the spot where I believed the photograph had been taken and inserted Forrest's negative. Looking through the view finder, I matched the landmarks and determined that the fort was located beneath a driveway and a trailer home. Because I could not obtain permission

to excavate in these areas, I decided once again to use Forrest's camera and the negative to estimate the fort's dimensions. While I looked through the negative, I directed a volunteer to place pin flags at various points on the ground. This technique may be inaccurate to some degree, but it produced measurements that matched the fort's description of 90 feet on a side. Determining the height of the stockade wall was another challenge. After

doing some documentary research, I learned that the double-length railroad ties used for the walls were about 16 to 18 feet long and set about four feet into the ground, for a height of 12 to 14 feet.

What started out as an archaeological survey evolved into a quest to find Fort Moroni and reconstruct what it looked like in 1881. Unfortunately, no early photographs documenting the original appearance of the fort have been found, and no further archaeological work on the fort has yet been attempted.



This photograph of the fort was taken in 1906 by Earle R. Forrest, by which time it had been renamed Fort Rickerson (courtesy of the Arizona Historical Society/Tucson, 48633).

Mormon Town Plans

Mark P. Leone, *University of Maryland*

THE WAY IN WHICH MORMON PIONEERS set up villages, farm sites, and house plans is closely tied with what they knew their social and religious systems would accomplish. It was obvious to the Mormon leaders that the way the physical environment was managed had direct effects on behavior.

The plan for laying out a town, called the Plat of the City of Zion, was drawn up by the Prophet Joseph Smith and came to have a status not unlike revelation. The key feature of the plat was the equal size of all plots in the city. The plat, which was a grid, guaranteed equal access to irrigation water. Each parcel was chosen using a lottery system. Choosing lots by chance meant that water rights could not provide a basis for social inequality.

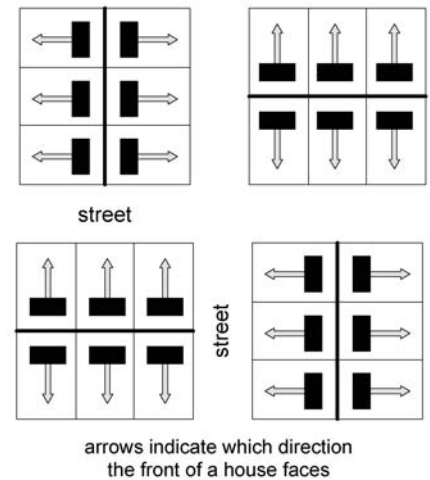
The plat specified that the city be comprised of large square blocks with wide streets between. Each block was subdivided into equally sized rectangular house lots. To create the subdivision, an axis was drawn down the middle of the block. At right angles to this property line were drawn four or five other lines that divided up the block into smaller equal rectangles. A house was to be centered in each rectangle facing the street. With such a setup, houses would be back-to-back facing in opposite directions. The plat alternated the central axis on every other block. This meant that every street had people facing it in equal numbers. It also meant that nobody looked into anybody else's front yard. It made all streets equal and simultaneously heightened the level of privacy.

In addition, every house in a Mormon town had a fence around it, usually a picket fence. Although streets and irrigation ditches separated blocks in a town from each other, fences pro-

vided the visible distinction between individual property holdings. Fences drew the literal line between closeness and privacy. The Mormons put people more closely together than any Anglo group in the West but separated them by using fences.

The number of gates in a fence, like the number of doors in a house, indicated the number of

Schematic of Plat of Zion



Drawing showing the layout of a Mormon town, created according to Joseph Smith's Plat of Zion, with equally sized lots for all residents.



Top: Marcor and Anna Peterson's home. Bottom: The home of the Peterson's daughter and her husband, Hannah and Alma Davis. Both in St. Johns, Arizona, around 1930 (courtesy of Karen Wilhelm).

wives in a man's household and hence his status. The church maintained elaborate rules about the equivalent treatment due to a man's plural wives. Gates and doors serve as examples of how technological items served to accomplish some social tasks.

Mormons have lived by the Little Colorado River for more than a century. They are still building fences. The materials are different now: cinder blocks, chain-link fences with and without aluminum slats woven into them, and prefabricated wooden fences that are almost walls. Despite overwhelming changes in Mormon culture, there is an unchanged relationship between a key set of artifacts and a set of religious symbols. Fences still keep the same things in and the same things out.

Brigham City and Sunset Cemeteries



Karen Wilhelm at the monument marking the Brigham City Cemetery (photographs by Richard W. Lord).



The Sunset Cemetery in Homolovi Ruins State Park with old and new stones (photographs by Kenn Evans).



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.

Board of Directors: William H. Doelle, Ph.D. (President and CEO), Benjamin W. Smith (Vice President), Diana L. Hadley (Treasurer), and Gary A. Hansen (Secretary). **Advisory Board:** Hester A. Davis (Arkansas Archaeological Survey, retired), Don D. Fowler (University of Nevada, Reno), William D. Lipe (Washington State University), Margaret Nelson (Arizona State University), William J. Robinson (University of Arizona, retired), James E. Snead (George Mason University), and Elisa Villalpando (Centro Instituto Nacional de Antropología e Historia Sonora, Hermosillo, Sonora, Mexico).

Administrative Staff: Linda J. Pierce (Programs Manager), Sally A. Thomas (Office Manager), and Tobi Taylor (Content Editor, *Archaeology Southwest*). **Preservation Archaeologists:** Jeffery J. Clark, Ph.D.; Chip Colwell-Chanthaphonh, Ph.D.; Jacquie M. Dale, M.A.; Douglas W. Gann, Ph.D.; Brett Hill, Ph.D.; Patrick D. Lyons, Ph.D.; and Paul F. Reed, M.A. **Preservation Fellows:** Anna A. Neuzil, M.A., and James M. Vint, M.A.

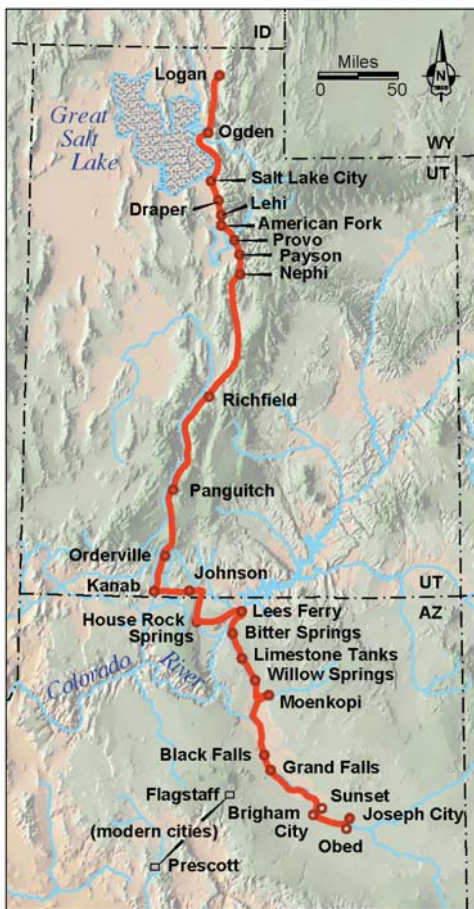
Archaeology Southwest (ISSN 1523-0546) is published quarterly by the Center for Desert Archaeology. Copyright 2005 by the Center for Desert Archaeology. All rights reserved; no part of this issue may be reproduced by any means without written permission of the publisher. Subscription inquiries: 520.882.6946.

Back Sight

MANY LOCAL STORIES come into focus in this issue of *Archaeology Southwest*. When considered on a larger geographic and longer time scale, however, it is clear that the history of Mormon settlement in the Little Colorado River Valley has national as well as local significance.

The Mormon religion developed during a period in the early nineteenth-century United States referred to as the Second Great Awakening. It was a time of increasing religious fervor with distinctive regional expressions. The Mormon prophet Joseph Smith was born in Vermont in 1805. In 1830, he published *The Book of Mormon* and founded his own church in upstate New York. By 1838, a revelation to Smith brought about the name change to Church of Jesus Christ of Latter-day Saints. Seeking relief from persecution, Smith soon moved his church west to Ohio, then to Missouri, and by 1839, to Nauvoo, Illinois. It was there, in June 1844, that Smith was attacked and killed by a mob while in jail awaiting trial. Brigham Young then took over church leadership, moving the Mormons to Nebraska in 1846, and later establishing Salt Lake City in what is now Utah, in 1847. Still part of Mexico at that time, it was within the vast area ceded to the United States by the Treaty of Guadalupe Hidalgo in 1848. The Mormon settlers at Salt Lake City were seeking isolation to pursue their religious practices, but by 1869, the first transcontinental railroad was completed. It passed through Ogden, Utah, and Brigham Young ensured that a trunk line was built, connecting Salt Lake City with the new railroad by 1870.

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.



The Mormon colonists of 1876 who trekked southward in wagons to the Little Colorado River Valley were isolated, but their travel route was also a network of Mormon communities that linked them back to their religious center in Salt Lake City, where political and economic power was increasingly centralized.

Center for Desert Archaeology staff have recently begun to work with local stakeholders to establish a National Heritage Area in the Little Colorado Valley. The Mormon history in this valley will be one of several key themes of national significance that will be documented over the next two years. The ways that the Mormon agricultural communities colonized and adapted to a harsh new environment, the deep Native American history in the region, the historical roles of east-west transportation corridors such as the Southern Pacific Railroad and Route 66, and the vast open spaces and natural resources, such as Sunset Crater, Petrified Forest, and the Painted Desert, are all part of this nationally distinctive landscape that merits wider recognition and celebration.

William H. Doelle

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

Center for Desert Archaeology
Archaeology Southwest
300 E. University Blvd., Suite 230
Tucson, AZ 85705

NONPROFIT
ORGANIZATION
U.S. POSTAGE PAID
TUCSON, AZ
Permit No. 878