

*Your Guide  
to the*

MISSION CHURCH  
*and* GROUNDS



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TUMACACORI NATIONAL MONUMENT  
19 Miles North of Nogales, Arizona



*Visitors using the self guiding trail.*

Tumacacori National Monument, one of 180 areas administered by the National Park Service, United States Department of the Interior, was set aside for its historic values. This area belongs to you and is part of your heritage as an American citizen. The men in the uniform of the National Park Service are here to serve you and welcome the opportunity to make your stay more enjoyable.

**Keep America Beautiful!**

# Tumacacori National Monument, Arizona

You are about to start on the trail through Tumacacori (too-mah-COCK-oree) Mission. By following the numbers and reading from this booklet you will be your own guide. If you read the LARGE PRINT you will get a brief story. If you also read the small print you will get a detailed story. Before proceeding on the Mission Trail you may want to visit the Spanish style Patio Garden. (The sign is to your right.)

Rest rooms are at the far end of the patio garden.

You will find a Park Ranger on duty in the area who will be glad to answer your questions.

## NOTICE

This is *your* National Monument. We want you and those who follow you to enjoy it. To carry out this aim, we ask you to observe the following rules:

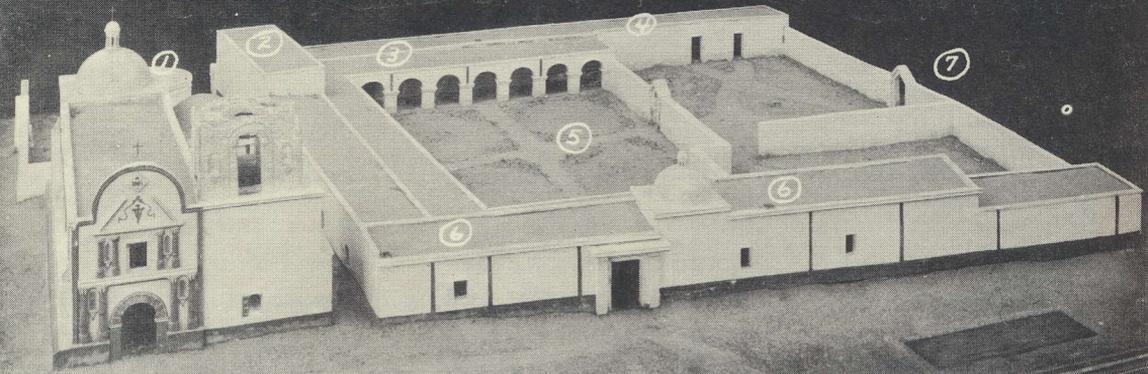
1. Examine the crumbly walls and plaster of the mission church *only* with your *eyes*.
2. Write names and initials *only* in the register book in the lobby.
3. Let pleasant memories and pictures be the *only* souvenirs you collect.

**Station No. 1** The bronze figure on horseback represents Father Kino, who brought Christianity into southern Arizona in 1691.

Father Eusebio Francisco Kino, a Jesuit missionary, was the pioneer figure in southern Arizona mission history. Serving jointly as an apostle of the Roman Catholic Church and as an envoy of the Spanish crown, he spent the last 24 years of his life (1687-1711) establishing missions among the Indians of Pimeria Alta.

Pima Indians of Tumacacori, hearing of the fruit trees, wheat and livestock that Kino was giving to mission Indians farther south, journeyed one day in January of 1691 to the little town of Tucubavia, a few miles southwest of the present Nogales. Here, finding Kino and a fellow missionary, Father Juan Maria de Salvatierra, visiting the villagers, they requested him to come northward to be a missionary for them.

So it was that, at request of the natives, Kino traveled northward into what is now Arizona, and visited Tumacacori village for the first time. Unable to station a resident missionary here, he established Tumacacori simply as a visiting place for missionaries.



*Possible uses of buildings other than the church. (1) Mortuary chapel; (2) Granary; (3) Kitchens and living quarters; (4) Stables; (5) Gardens; (6) Indian School; (7) Orchards.*

**Station No. 2** This table model represents the church you see through the window, and shows it and its adjoining buildings as they probably were in the 1820's.

The model shows the mission church: to the north, a portion of its walled cemetery area (the round structure is the unfinished mortuary chapel); and to the east, the great walled patio, around which are shown arcades and the rooms. Some of the rooms were living quarters for the one or two resident priests, others were for community storage and the granary, still others were classrooms for the Indian school, and a workshop with perhaps a blacksmith forge, space for repairing leather goods, furniture, etc.

The present church, started between 1796 and 1806, was never completed on the outside (see the unfinished bell tower and the unfinished mortuary chapel.) However, it was in use as a church from at least 1822 to about 1828 when the last resident missionary was withdrawn. The missionary's withdrawal doubtless sprang from changed conditions which arose after this portion of New Spain became part of the new country of Mexico.

Mexico declared independence from Spain in 1821, while construction was still under way here, and promptly ended the Spanish practice of using government money for establishing and maintaining missions. Before long, Mexico began ordering missionaries out of the frontiers, and requiring secularization of the missions.

Secularization means changing a church from a mission church to a parish church, changing from missionary priests to diocesan priests. Where a mission church would be supported, in New Spain, partly by the Spanish government, partly by the Roman Catholic Church, partly by private subscription, the parish church was supported mainly by the local community. Parish churches are the kind most of us are acquainted with today.

Most frontier Indian towns were too poor to support a parish church, and so the majority of the missions had to close their doors within a few years. Tumacacori was one of those which lost its priest, although the Indian village continued (even after his depar-

ture) to receive occasional visits by a priest from northern Sonora for several years (until 1848).

In 1849 the Indians abandoned Tumacacori, and after that time there was no real protection for the church. During the next 80 years Tumacacori Mission was at the mercy of weathering and vandalism.

*You will find it interesting to examine the three pictures on the wall to your right. They show progressive stages of deterioration of the church from 1849 to 1912.*

Private owners donated the mission building and 10 acres of its lands to the United States in 1908, and President Theodore Roosevelt made the area a national monument. That is why the National Park Service, Department of the Interior, takes care of it now; so of course there is no connection with any religious organization.

Without some attention the buildings would, before many more years, have gone completely into ruins; consequently the National Park Service has done some restoration work. We have made no attempt at a complete restoration, and do not plan such. Our chief concern is to retain what we have - in other words, to stabilize.

**Station No. 3** Typical bricks, such as were used in the mission church. We suggest you scratch and test these samples, to see what adobe and fired adobe are like. (Saves lots of wear and tear on the church, too, if we do our sampling here!)

Adobe bricks are made of mud, and sometimes have straw mixed in for tempering. The Spanish taught the Indians of this region to make adobe bricks. Sandy soils make very poor adobes; heavy soils make very good ones. (This is a good one).

Fired or burnt adobe bricks are simply adobe bricks that have been baked under extreme heat. They are usually fired in large ovens or kilns and the heat turns them red in color.

**Station No. 4** The mound of dirt, which extends from the building you just left to the Mission church, now covers the foundations of a double row of one-room houses which were part of the Indian quarters here. We are not certain when this village was established, but we know it was occupied during the Mission period. The population varied considerably, but shortly before this church was started the town contained scarcely over 100 people, and that figure would be very close to an average.

This mound was partially excavated by a National Park Service archeologist in 1934, and small rooms were found, as well as pieces of pottery and other items that the Indian used in his everyday life. After the scientist had completed his study, the rooms were covered

over again, until such time as funds become available to stabilize and preserve these crumbled walls from the weather.

**Station No. 5** This is a trailside exhibit. *Please lift metal cover by handle*, and you can tell approximately how much of what you see is original, and how much is restoration.

**Station No. 6** Overhead you can see the only original part of the entry arch remaining.

Notice how the lime plaster was painted and grooved to make it resemble stones of an arch set in mortar. Missionaries often carried over the appearance of old world stone architecture, even when working with adobe and plaster.

**Station No. 7** By using this trailside exhibit you get an artist's conception of what the interior of this church looked like during the celebration of a Mass in early Mission times.

The nave is the body of the church where the congregation met to celebrate Mass. There were no seats or pews. The people knelt or sat on the floor. The original floor of the building was long ago entirely torn up by treasure hunters and the existing floor is a replacement.

It consisted of a 6-to-8-inch thickness of lime mortar, into which were embedded fragments of burned adobe, and it had a smoothly trowelled surface painted red. People used to believe that the missionaries had done lots of mining, and that some of their gold was buried here, with the result that treasure hunters did an enormous amount of digging in floor and walls. We don't think any treasure was ever found, for we believe the missionary priests were as poor as they said they were, which means they had the greatest of difficulty in obtaining funds for their work. Most of this construction was done with donated labor, given by the Indians of Tumacacori village as time and opportunity arose. This made it a very long project, which involved intermittent work during a period of at least 16 years!

The original timbered roof over this part of the church collapsed (probably from rot and termite action) over 100 years ago. The National Park Service has put up this roof purely to protect the remaining features.

**Station No. 8** The baptistry, except for the Main Altar, is considered the most important and sacred part of a church. It contained the font where the converts were baptised.

You have just come through a wall which is 9'2" thick. The walls of this room average over 9' thick (much thicker than any others in the building).

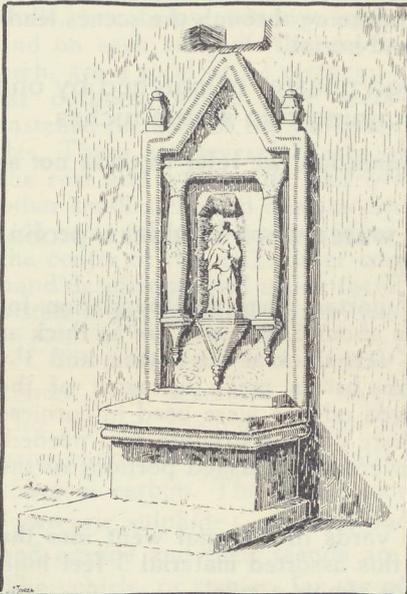
There are two reasons for this extra thickness: (A) this is the

only three-story part of the church; (B) the passage which opens in the corner winds upward *through* three of the walls to reach the top.

Above this baptistry domed ceiling is a tiny, dark storage room, and above it is the unfinished belfry. Opposite the storage room the passage opens to the choir loft entrance. Because there was no dome over the belfry, rain long ago rotted out its floor, and leaked down to weaken the center of the ceiling overhead. For these reasons, it has been unsafe for a number of years to climb into the top section, and we have a locked screen inside the passage opening.

Those are original pine timbers in the corners of this room. They were dressed with adzes, and if you could see the ends you would doubtless find they had been sawed. The timbers were installed by the builders to make it possible to convert the square room into the rounded base of the domed ceiling. The nearest place to obtain such timbers was in the lofty Santa Rita Mountains to the northeast, 15 miles airline, at least 20 for Indians of Tumacacori on foot. In those days, the Santa Ritas were frequently occupied by hostile Apaches, so it was very dangerous business to enter the mountains in search of timbers.

Before leaving the baptistry, please notice more closely the window in its south wall. That window is larger on the inside than on the outside. This device enabled the greatest possible amount of light to enter the room, while at the same time the outside opening was small enough so that heavy wooden shutters in it could have been barricaded against possible invasion by Apaches.



Artist's restoration of a side altar

**Station No. 9** Here is one of the four original side altars in the nave. It is composed of burned adobe bricks and lime mortar, having a base of the same material.

Above the side altars were statues of different manifestations of the Virgin, and of different patron saints. During most times the devout could enter the church to meditate and pray while burning a candle on the altar below the figure of a favorite or patron saint. Side altars also served for celebration of the Mass when there were several priests, although such occasions would have been rare indeed in the understaffed frontier missions!

Directly opposite this altar

you can see the remnants of the double brick-and-plaster attached columns which originally framed the statue niche above a similar altar.

**Station No. 10** This trailside exhibit gives us an idea of how the choir loft might have looked when it was still in place above the door entrance.

The loft might have collapsed when the roof above it fell. The adobe projections on each side once supported an adobe arch which in turn supported the near end of the choir loft. The far end of the loft rested on those large squared adobe projections on either side of the existing entry arch. On the left side, the loft was entered through that rectangular door opening high above the floor. Opposite the level of that door sill, on the right wall of the church, you can still see the groove in which the choir loft floor fitted.

**Station No. 11** Above you is a well-defined, oval depression in the plaster. This niche once contained one of the 14 Stations of the Cross.

Originally these niches extended along both sides of the nave, and there was one on each side of the now missing arch which supported the north end of the choir loft. Each of the niches presumably contained a wooden plaque, with carved and painted figures done in partial relief on the face.

The 14 Stations of the Cross are a series of images or pictures taken from the Passion of Christ, and represent His last day, starting with the scene which shows Pontius Pilate, the Procurator of Judea, condemning Him to be crucified, and going through the scenes leading through the crucifixion, death and burial.

**Station No. 12** This ceiling-high pilaster is matched by one on the opposite side, each containing two statue niches.

Since there are no altars in connection, we refer to these not as altars but as shrines.

**Station No. 13** Foundation of water worn boulders, probably from nearby arroyo bottom.

These boulders, set in adobe mortar, form the foundation for most of the building. They go down about 5 feet, and are as thick as the walls, which average about  $5\frac{1}{2}$  feet thick at the bottom and  $3\frac{1}{2}$  feet thick at the top. Sun-dried adobe bricks make up most of the wall construction, but burned or fired adobes were used in cornices at tops of walls and other spots where greater strength was needed. Two heavy coats of lime plaster covered all finished portions of the church inside and out.

We estimate over 1600 cubic yards of material went into the church building. Imagine a pile of this assorted material 3 feet high and 3 feet thick - it would stretch for almost a mile!

#### Station No. 14 Restored pulpit base.

The original pulpit was destroyed or fell away from the wall, long ago, leaving only the outline where it had fitted, and a couple of timber sockets.

This partial restoration was done in the 1920's, following the old outline, and with the wood fitting the old sockets. Actually, we do not know the shape of the original pulpit, which may have had three instead of two sides.

**Station No. 15** You have entered the sanctuary, that part of a church immediately surrounding the main altar where the priest said the Mass. The original dome is overhead. The walls, plaster and painted decorations are original.

The highest part of the dome ceiling is 32 feet above the floor, and the room is 17' 4" across, both ways. The dome is about 12 inches thick, made of burned adobes and lime.

Along the east and west walls, just below window level, and on each side of the south arch, are a total of 12 rectangular outlines, where once were fastened pictures of the 12 Apostles.

There are several friezes of stencilled flower patterns across the east and west walls, and over the south arch, as well as many other small stencilled designs circling the base of the dome, and inside some compass-drawn circles in the extreme top of the dome. In the center of the arch, other compass-drawn circles have tiny free-hand designs painted inside them. Some free-hand scroll work is also visible in horizontal bands on either side of the arch.

The sanctuary is by far the most highly decorated part of the church, with remnants, in several colors, of a number of designs. One pigment, the blue, is made from indigo, a plant not native to this hemisphere, but introduced into Mexico in Spanish times; black is charcoal carbon. The other colors are all mineral: red is cinnabar (mercuric sulphide), green is one of the copper compounds, yellow and orange and their blends are ochreous hematites (iron oxides). The vehicle, or carrier, for the pigments, has long ago disappeared.



*How the pulpit may have looked*



*North wall of sanctuary as it appears today*



*Reconstruction of how it may have looked in 1820*

It was probably a water-soluble vegetable base, such as Mesquite gum.

The main altar was long ago destroyed. Tradition has it that Pedro Calistro, a very devout Opata Indian who lived nearby in the early part of this century, performed the present partial restoration.

**Station No. 16** Let this trailside display show you the contrast between the way the wall looks now and the way it probably looked 130 years ago.

**Station No. 17** The door headers over this entrance to the sacristy were pine, and two of the originals remain. They are still sturdy, although you can see much evidence of termite and other insect work.

**Station No. 18** This is the sacristy. The floor, like other floors in the building, is entirely modern. Ceiling and walls are original. All three sets of steps in this room are recent. Principal use of the sacristy was as a robing room for the priest, and as a place in which to keep ritual equipment when it was not in use.

The steps in the corner were replaced so as to fit partial original outlines on the wall. They lead to the restored pulpit.

Long after the abandonment, travelers through the valley used to camp in this room. Soot and smoke from their cooking and campfires have blackened walls and ceiling. Brown stains on the ceiling

have been caused by the roosting of hundreds of bats. Bats are kept out now, by closing the modern screening over the doors at night.

**Station No. 19** Originally this opening was a window but long before the National Park Service was in charge the opening had been worn down into a door, through which we now enter the cemetery.

**Station No. 20** The fine tree behind this stake is a Velvet Mesquite (*Prosopis juliflora*, variety *velutina*), one of the most characteristic plants of southern Arizona.

From old photographs, we estimate this tree to be about 75 years old. Mesquites reach large size in the river flats, but on the hillsides they frequently grow only 2 or 3 feet high. The bean pods which they produce, when dried and ground into meal, made an extremely nourishing food which was much used by the Indians.

**Station No. 21** This deep oval niche in the wall is one of the Stations of the Cross, which go all around the cemetery.

Since these Stations of the Cross were out of doors, the niches had to be very deep to afford protection from the weather.

Higher up the wall, you can see a horizontal row of holes which go entirely through. They are timber sockets, and on the other side of the wall the vigas (joists) which supported the second floor fitted into the holes.

**Station No. 22** Above this stake there are two interesting features. First is the narrow rectangular hole through the wall. This hole may have served as a gun port, for defense of the rooms on the other side of this wall. Notice how much higher this section of wall is than the rest? That is because, on the other side, the remnants of a two-story granary formed part of the patio area lying east of us.

So, if a protective gun barrel was stuck through this loophole, it would have been from the other side of the wall. There is pretty good evidence that the rooms of the patio were of earlier construction than the cemetery wall and mortuary chapel, and so, when this was open ground west of those rooms, there would definitely have been some value to gun ports.

The second interesting feature at this point is the double cluster of bullet holes in the wall. These holes have been much enlarged by people digging out the lead slugs, but from the size of some of the slugs it is safe to assume they have come from a .45-caliber gun. Although we have heard

stories that there had been executions against this wall, we were never able to prove any of them. We did learn, after asking many questions, that there are people still living in Arizona who used to shoot at targets here!

However, even if that does somewhat destroy an exciting story, we can assure you there is no need to invent excitement for this area in mission times. From the original burial records which the priest made out, we learn that several of the Pima and Papago Indians buried here had been killed by the Apaches, in the course of a number of different raids. Also, from another source, we learn the Apaches almost destroyed the forerunner of the present church, way back in 1776.

**Station No. 23** This is the north part of the cemetery. The grave mounds you see are all comparatively recent graves.

The missionaries buried a considerable number of Christian Indians here, as we learn by examining the original burial records. However, many years after abandonment of Tumacacori, cattlemen used the cemetery enclosure as a round-up corral. Any grave markers that weren't destroyed by milling cattle were later torn up by treasure hunters. So, there are no Mission period grave markers remaining. The markers you see today are from much later times, dating from possibly as far back as the 1880's, down to as recent as 1916.

The most recent of the burials was that of a little girl, Juanita Alegria, who died at the age of 9 months on September 12, 1916, and was buried here then. Later, in 1939, her family built a little cement monument over her grave, and the family still comes in once a year on November 2 (All Soul's Day in the Catholic calendar) to place flowers on the grave. The next station is to your left.

**Station No. 24** This building was intended, we believe, to serve as a mortuary chapel, or laying-out place for the dead, and possibly the location of the religious burial services.

In other words, an Indian family might have brought a deceased member of the family here and have held their equivalent of a wake in this building, keeping their night-long vigil with the dead before administration of the last rites and burial on the following day.

The chapel was never completed. Doubtless, a dome was intended, but was never built; the plastering was incomplete, with only the base coat applied to the walls. Although there are brick fragments worked into this plaster, there is no pattern to them. The fragments were undoubtedly to provide a good bond for the proposed finish plaster coat.

Around the top of the wall on the inside, you can still see the

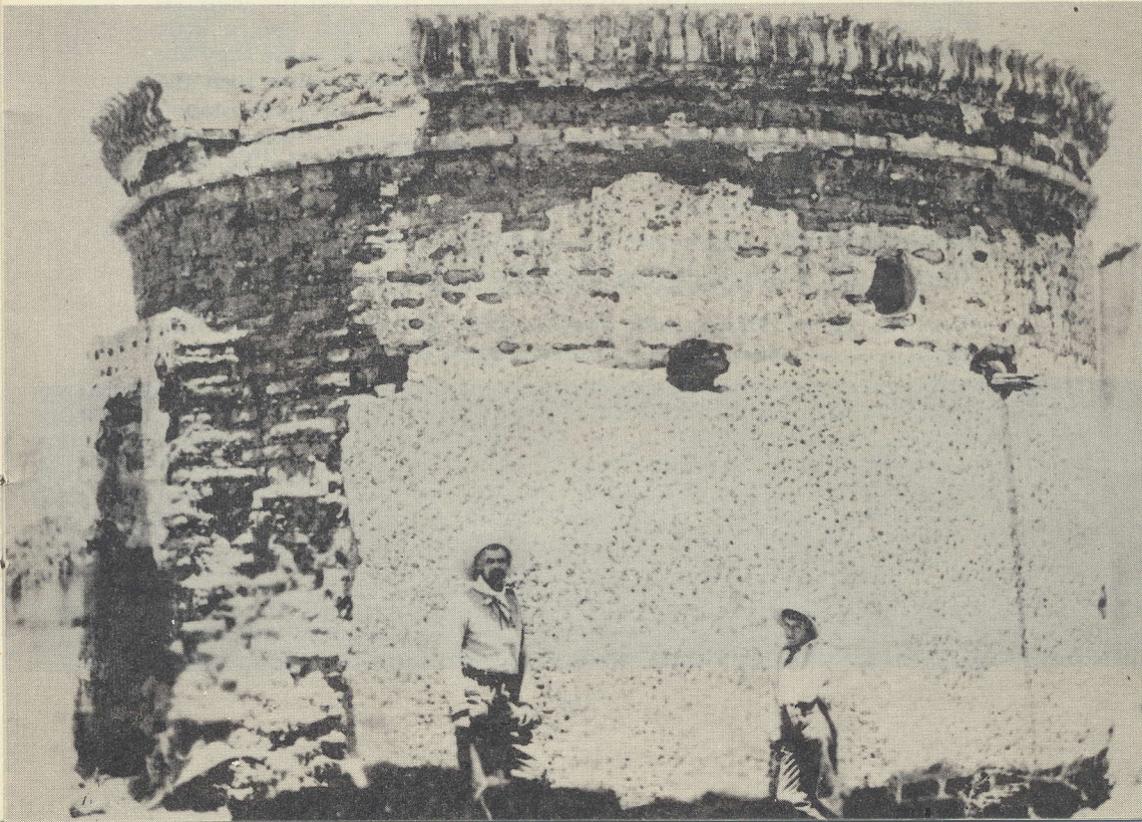
original burned adobe cornice bricks. Below the cornice is the original moulding. The two holes through the walls were too high for defensive loopholes, and must have been simply to provide light and ventilation.

A great deal of re-surfacing has been necessary on this building. Much bare adobe of the walls had been exposed.

Around the outside of the building you can see a line of holes which *do not* go through the wall. From one of these projects part of an original timber. These holes are scaffolding holes, and were used to seat the poles which supported cat-walks or planks. On the planks stood the Indian workmen while they were building upper portions of the wall. The fact that the scaffolding poles were left projecting from the wall is evidence the builders were expecting, at least until very shortly before abandonment, to complete the structure.

**Station No. 25** As you look at the cemetery wall which surrounds this area, you can assume that any portions that have flat-surfaced plaster on them are original. Any re-surfacing of weathered adobe walls which have lost their plaster has been done by us in such manner that the work

*The unfinished mortuary chapel, in 1889.  
Photo by—George Roskruge, Tucson, Arizona*



can be easily recognized: all of our plaster work has followed the irregular, weathered contours of the walls, with no attempt to leave a flat surface. The gate to your right, and about 50' of wall north of it, are restored; most of the burned adobe capping is restored; and you can easily see where, along bottom portions of walls, the Park Service filled in some ground-line cavities many years ago with concrete.

**Station No. 26** This is one of the only two original water drains left on the church building. It is made of the same lime-and-sand mortar as the rest of the exterior surface, but was extremely well polished, and was made ornamental as well as functional by the red pigment (ferric oxide) which the builders worked into the plaster surface while it was soft.

Now, if you will look closely at some of the remaining finish plaster coat outside the drain, you will see how the builders decorated much of the plaster. Small handfuls of burned adobe fragments were worked into the surface while it was soft. These pieces were applied to form a simple pattern of vertical, diagonal, and horizontal lines.

The red fragments are ordinary burned adobe which was adequately fired, with sufficient oxygen reaching it so that the material oxidized and turned red. The black fragments, which look a little like slag, are in reality, brick fragments also. But in this case they are from bricks which were fired without sufficient oxygen to feed the flame, and carbonized instead of oxidizing.

*To continue along our trail route, please re-enter sacristy and turn left.*

**Station No. 27** Here we are in the ruins of the old corridor which connected the sacristy to the patio area. (The

*Part of a typical mission patio garden of the period, with the arcades (loggia) which separated it from the rooms.*



protective steel roof was erected in 1953). About 50 years ago a local family moved into this space, building that wall across the end, putting up a roof, and using the space as a home. On the south wall you can see where they went modern, with the built-in window and cupboards.

**Station No. 28** Here we are in what was the patio area. The picture on this exhibit may help you remember the model you saw in the view room at the museum building (Station No. 2), and may help you more adequately visualize how this area appeared. North of the corridor you see the two-story room remnant. Those rooms originally extended southward, interrupted only by the corridor, to make the west side of the patio. To the east, the row of white stakes shows where the east wall paralleled this one. To the north, the white stakes similarly indicate where a line of rooms made the north side. And to the south, you see the standing remnants of old room walls.

The patio was a completely surrounded space, capable of defense against Apache invasion. Rooms around the north, west, and south sides were separated from the interior of the court by a loggia (series of arches supporting a roof).

In some of the courtrooms originally lived the one or two resident priests. Other rooms would have been for work shops, community granaries, store rooms, guest rooms, and for the Indian school.

The missionary priests ordinarily spent a great deal of time teaching the Indians, not only how to become good Catholics and to speak Spanish, but how to earn a living at any of several trades. Much of a priest's success depended on how adequately he taught his converts to cope with Spanish civilization as it crept north from Mexico.

This would have been just such a garden as we have attempted to reproduce for you on the south side of the museum building. Down to the east of this patio area, beyond those white stakes, is the lower ground in which the big mission orchard lay. Nothing remains of the orchard now except part of the stone and mud wall which surrounded it. Beyond and around part of the orchard were the fields, undoubtedly in much of the area that is now serving as modern fields.

**Station No. 29** During 1934 and 1935 the Park Service conducted extensive exploratory trenching in the patio area. In the course of that work, we located foundation walls of what we believe to have been an earlier church. The yellow

stakes outline the foundation walls of this earlier church, and it is apparent that it was rather a small structure.

**Station No. 30** The building that you have just approached was constructed in 1955 as a protective cover over early mission ruins. More information will be given you at a later station.

Exposed at this point is a portion of the original floor and bench of the arcade which surrounded the patio area. Further excavation to the left and right of this point would probably reveal additional bench and flooring.

**Station No. 31** By looking carefully, you can see the slanted adobe bricks which at one time formed an arched doorway. This doorway served as an entrance into the patio from the outside.

At some time after this arched entrance had served its purpose, it was filled in and made into a solid wall to form the room you will enter next.

**Station No. 32** Under this protective building are ruins of two of the rooms which were on the south side of the early Mission patio. They have been altered somewhat by Americans in the late years.

Between 1900 and 1923, local people built the wall across this end, white-washed the walls, installed doors and windows, built fireplaces, and finally installed a tin roof and a school teacher. The teacher lived in the first room, and the second room served as the district schoolhouse until 1923.

**Station No. 33** Exposed here are the remains of the original floor. The fired or burnt adobe bricks form a very distinctive pattern and provided a substantial yet decorative flooring. The large gaps of ripped up floor are evidences of vandalism. We wish they had had an urge to dig elsewhere.

**Station No. 34** These are believed to have been cisterns, for water storage. The brick lined ditch probably connected the cisterns and patio area, and served the purpose of irrigating the patio garden. Note that the ditch would have to run under the floor of the building.

These tanks are somewhat disappointing, because only the lower parts are original.

And we have yet to prove that they were fed by a ditch. They had to get water from some source, and we long ago established that there was no connection with any roof drains from the church. But

a ditch, taking off from the irrigation canal a half mile or so to the south, could have fed the tanks. At least there is no question about the canal, because it was still carrying water until 1938. The canal came out of the Santa Cruz River about 1 mile south of here, and opposite this point it went northward about 100 yards east of us. The canal, of course, provided water for the mission orchard and the fields.

At the time the church was active, the Indian town of Tumacacori was situated in front of the church, and included the area where these tanks are. The town had a defensive wall around it, although it would be impossible to show you the outlines without excavating the town site. However, we can reasonably assume the town was laid out in a square, with the south face of the church and the mission patio forming the north side of the town square. You can see almost no evidence, above ground, of the town, save for the mound west of the trail which connects the museum building to the church entrance.

**Station No. 35** Barrel Cactus (*Ferocactus wislizeni*). Also called Compass Cactus, because it leans slightly toward the direction from which the most sunlight comes.

Local name is Bisnaga (*biss-NAH-gah*). People who run into one in the night often call them something else, which we won't mention here!

This plant produces a yellowish-orange flower in August and early September. The fruit, at first green, turns bright yellow after winter frost hits, and remains on the plant for several years. The color of the fruit causes winter travelers through the district to mistake it for flowers. The fruit is not fit for human consumption. Cactus candy, however, is made from the pulpy heart of the plant, after repeated boilings to get out the bitter tastes, and after cooking cane sugar back into the pulp.

**Station No. 36** Here we have laid out the different types of milling stones used in this vicinity.

The cigar-shaped pestle was given a pounding or churning motion inside the hole of the rounded mortar, to grind meal or flour. The small, very flat mano or handstone was rubbed back and forth inside the trough of the metate (see—this metate has a hole that was worn through it). Such stones have been in use by the Indians of the southwest for at least 8,000 years.

From the Spanish the Indians learned the use of the European grist mill. We have two sets of these. The best set is the one on the west end. The stone with the pipe sticking up from the center, was the bottom stone. The other stone, now upside down, went over the spindle. Then, by means of projecting pegs which fitted the holes around the upper stone, they were able to turn the stone.

Corn or wheat, fed through the hole in the top, around the spin-

dle (the original spindle was probably of Oak) would be worked out toward the edge by the spiral feathering grooves, and would then fall into the circular trough, from which it could be brushed to the spout and into a basket. Such milling devices are still widely used in parts of Mexico. They are usually operated by burro power, although some of the more influential men can get their wives to turn them!

The trees above these milling stones are Tamarisk (*Tamarix*). They are *not* related to the Tamarack, with which they are often confused because of name similarity. These trees are not native, but were introduced from the eastern Mediterranean region into the United States, and to this district in 1909.

**Station No. 37** This tree is a Chinaberry (*Melia azedarach*), closely related to the so-called Umbrella tree.

It apparently originated in the lower slopes of the Himalayas, but is widely grown in warmer parts of the United States as an ornamental and shade tree.

**Station No. 38** Please return this guide booklet to the table located here, or deposit 10 cents if you wish to take it home.

We are now at the entrance door to the museum. This is a National Park Service building, constructed in 1937. It faithfully embodies accurate details of mission architecture.

For instance, these arcades are copies of the originals from Caborca Mission, in northwestern Sonora.

In the museum you will find the exhibit cases are numbered, and each case has its own text matter.

## CONSERVATION — CAN A LAYMAN HELP?

If you are interested in the work of the National Park Service and in the cause of conservation in general, you can give active expression of this interest, and lend support by aligning yourself with one of the numerous conservation organizations, which act as spokesmen for those who wish our scenic heritage to be kept unimpaired "for the enjoyment of future generations."

Names and addresses of conservation organizations may be obtained from the ranger.

Tumacacori National Monument, a unit of the National Park System, is one of 21 areas administered by the General Superintendent, Southwestern National Monuments, National Park Service, Department of the Interior, Gila Pueblo, Box 1562, Globe, Arizona.

The traveling public is becoming increasingly aware of the National Monuments, which have received less publicity than the great well-known National Parks, yet which possess extremely interesting features.

Many of these are in the Southwest; we hope you will take the opportunity to visit one or more of them on your trip.

*Administered as a group by the General Superintendent.  
Southwestern National Monuments, Gila Pueblo, Globe Arizona.*

- IN UTAH: Arches National Monument, Moab  
Natural Bridges National Monument (care of Arches)
- IN NEW MEXICO: Rainbow Bridge National Monument (care of Navajo)  
Aztec Ruins National Monument, Aztec  
Capulin Mountain National Monument, Capulin  
Chaco Canyon National Monument, Bloomfield  
El Morro National Monument, El Morro  
Gila Cliff Dwellings National Monument (care of General Supt.)  
Gran Quivira National Monument, Gran Quivira
- IN ARIZONA: Canyon de Chelly National Monument, Chinle  
Casa Grande National Monument, Coolidge  
Chiricahua National Monument, Dos Cabezas  
Coronado National Memorial, Star Rt., Hereford  
Montezuma Castle National Monument, Camp Verde  
Navajo National Monument, Tonalea  
Sunset Crater National Monument (care of Wupatki)  
Tonto National Monument, Roosevelt  
Tumacacori National Monument, Tumacacori  
Tuzigoot National Monument, Clarkdale  
Walnut Canyon National Monument, Rt. 1, Box 790, Flagstaff  
Wupatki National Monumena, Tuba Star Route, Flagstaff

*Other areas administered by the National Park Service in the Southwest follow:*

- IN ARIZONA: Grand Canyon National Monument, Grand Canyon  
Grand Canyon National Park, Grand Canyon  
Organ Pipe Cactus National Monument, Ajo  
Petrified Forest National Monument, Holbrook  
Pipe Spring National Monument, Moccasin  
Saguaro National Monument, Rt. 8, Box 520, Tucson
- IN COLORADO: Black Canyon of the Gunnison National Monument (care of Mesa Verde)  
Colorado National Monument, Fruita  
Great Sand Dunes National Monument, Box 60, Alamosa  
Mesa Verde National Park
- IN NEVADA: Lake Mead National Recreation Area, Boulder City  
Lehman Caves National Monument, Baker
- IN NEW MEXICO: Bandelier National Monument, Santa Fe  
Carlsbad Caverns National Park, Carlsbad  
White Sands National Monument, Box 231, Alamogordo
- IN OKLAHOMA: Platt National Park, Sulphur
- IN TEXAS: Big Bend National Park
- IN UTAH: Bryce Canyon National Park, Springdale  
Capitol Reef National Monument, Torrey  
Cedar Breaks National Monument (care of Zion)  
Timpanogos Cave National Monument, Pleasant Grove  
Zion National Monument (care of Zion)  
Zion National Park, Springdale

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