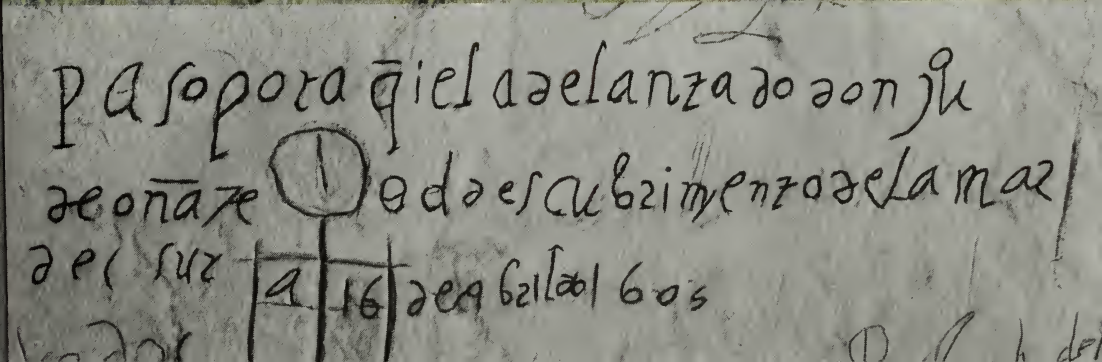


# El Morro Trails

EL MORRO NATIONAL  
MONUMENT, NEW MEXICO

PRICE: 50 CENTS IF YOU TAKE THIS BOOKLET HOME





*Inscription Rock, El Morro National Monument*

## Introduction

In the year 1540, Francisco Vasquez de Coronado came up from Mexico with some 350 Spanish soldiers and crossed southeastern Arizona to Zuñi, a pueblo thirty miles west of El Morro. Breaking up into several groups, they went eastward seventy miles to Acoma Pueblo and thence to the Rio Grande River. At least one of the groups probably passed El Morro on their way.

The first known historical mention of El Morro is found in the journal of Diego Pérez de Luxán, chronicler of the Espejo expedition of 1583. Luxán stopped here for water on March 11 of that year.

For some three hundred years, hundreds of Spanish soldiers and priests, traveling between Santa Fe and Zuñi, and the Hopi villages farther north, passed El Morro. Many left names and notations about themselves carved into the soft sandstone.

After 1849, American soldiers, emigrants, freighters, and adventurers camped here because of the never-failing waterhole. In 1906, El Morro was set aside as a national monument and additional name carving was prohibited.

The name "El Morro" simply means "the headland" or "the bluff," and refers to the appearance of this mesa-point from a distance.

**KEEP AMERICA BEAUTIFUL**



# El Morro Trails

## Inscription Rock Trail

The trail begins directly behind the monument headquarters, and climbs gradually toward the rock. Just follow the arrows and *do not* hurry. It is 7,200 feet above sea level here, and the altitude may bother you. The hike past the inscriptions and back to the office normally takes from thirty to forty minutes.

After viewing the inscriptions, you may, if you wish, continue up over the top of the rock and visit two large prehistoric Indian ruins. This extra hike will take you another one to one and one-half hours.

Starting near the base of the mesa the trail has been marked with numbered stations which match the numbered paragraphs in this booklet. Read and enjoy yourself as you walk.

No one has ever been bitten here, but watch along the path for rattlesnakes.

**Please leave the monument as neat as you found it.**

**1** If you look closely at the rock, about twelve feet above the ground you will see some notches cut into the sandstone. These are footholds. Probably most Indians came to the pool by the long, safe way, but others, caring more for their thirst than their lives, came down from the mesa top through the high notch to the right and above you.

**Do not, under any circumstances, try coming down this short way—  
the rock is extremely slippery.**

**If you go to the top, stay on the marked trail.**

**2** Now you see why travelers stopped here. There is no spring; the pool is fed largely by rain falling in July, August, and September, and by melting snows. When full it is about twelve feet deep and holds about 200,000 gallons of water.

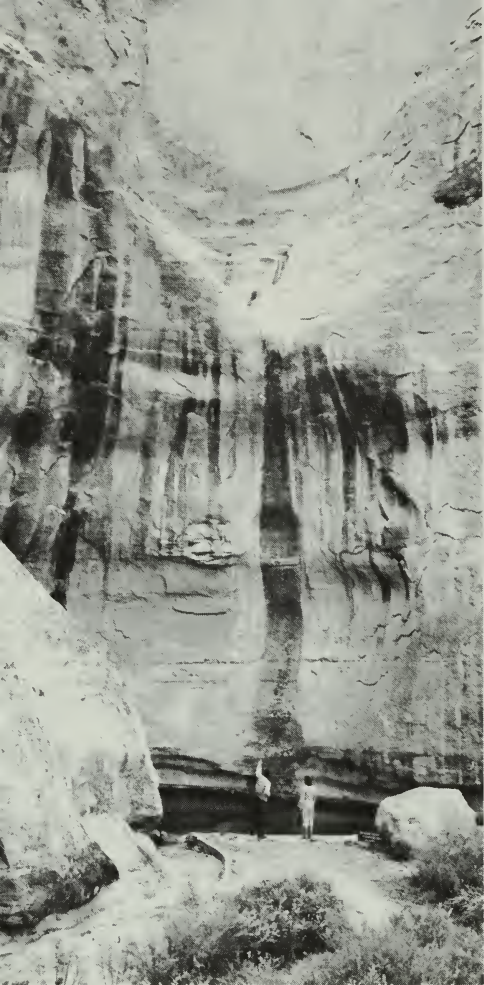
### **DO NOT THROW ANYTHING INTO THE POOL!**

If you look closely around the walls at about eye level, even on the far side, you can see names carved into the rock. Most of these date from 1850 to 1900, and were the work of emigrants and soldiers. How did they get over there? In the early days, there was probably a sandbank around the edge, and people could ride or walk around the pool. In 1942, a heavy rock fall filled the waterhole. When the sand and rubble were removed, the old dam was reinforced and lined with concrete.

**Do not write or carve on the cliff, and please don't touch.**

**Touching the inscriptions causes them to wear away more rapidly.**

The mud formations on the face of the rock above the pool are the nests of cliff swallows. These birds come to El Morro each year to nest and raise their young.



*The waterhole*

**3** Along the base of the mesa are examples of the predominant types of trees found in the Southwest. From left to right are:

- (1) One-seed juniper (*Juniperus monosperma*), which can be used for fenceposts and fuel.
- (2) Pinyon pine (*Pinus edulis*), noted for its edible nuts which are harvested in the fall.
- (3) Ponderosa pine (*Pinus ponderosa*), which provides excellent wood for construction and building purposes.

Watch for black sage (*Artemisia tridentata*) along the right side of the trail. This is the purple sage of western fiction and is recognized by the silvery down on the leaves and the purplish color of the shaggy bark. The strong aromatic odor of sagebrush is especially noticeable after a rain.

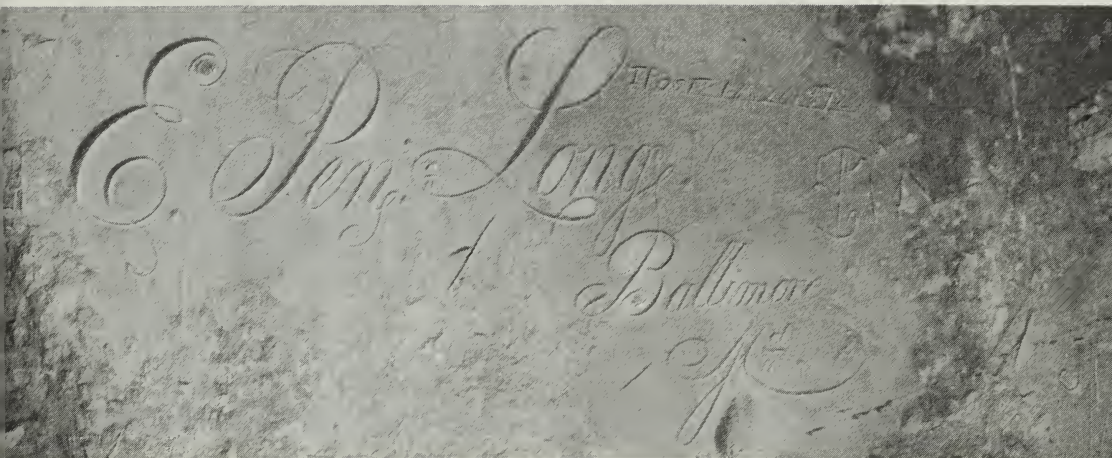
**4** Petroglyphs seen in the reddish sandstone were probably carved by the people that lived on top of the mesa seven hundred years ago. Petroglyphs are made by incising or pecking designs into the sandstone. Incised drawings are created by scratching lines in the rock using a hard tool. Pecked drawings are made by striking the rock with a hammerstone and gradually chipping away the outside surface of the rock. El Morro contains both styles.

usually chipping away the outside surface of the rock. El Morro contains both styles.

Mr. Long, whose signature is one of the most elegantly crafted inscriptions, was a member of Lt. Edward F. Beale's 1857 caravan that was testing the usefulness of camels in crossing the deserts of the Southwest. Two other members of Beale's caravan signed their names to the right and around the corner: "Mr. Engle" in block print and "Mr. Bryn" in script. Engle was Beale's second-in-command.

**5** P. (Peachy) Breckinridge, a graduate of Virginia Military Institute, rode across the continent to California as a young man. Later in 1857 Breckinridge was in charge of the twenty-five camels used by Lt. Edward Beale in his expedition. Breckinridge arrived back in Virginia and enlisted in the Civil War. He was killed during a skirmish at Kennon's Landing, Virginia in 1863.





*E. Pen Long inscription*

**6** Here you observe a number of very faint Spanish inscriptions which have never been completely studied. Note the word “año” (year) 1646. To the right is a lamp-blackened inscription reading “paso por aqui Miguel Alfaro” (Passed by here, Miguel Alfaro). A date is not given, nor is the man yet known to us. Scholars, dating the inscriptions by letter style, say it was done about 1700.

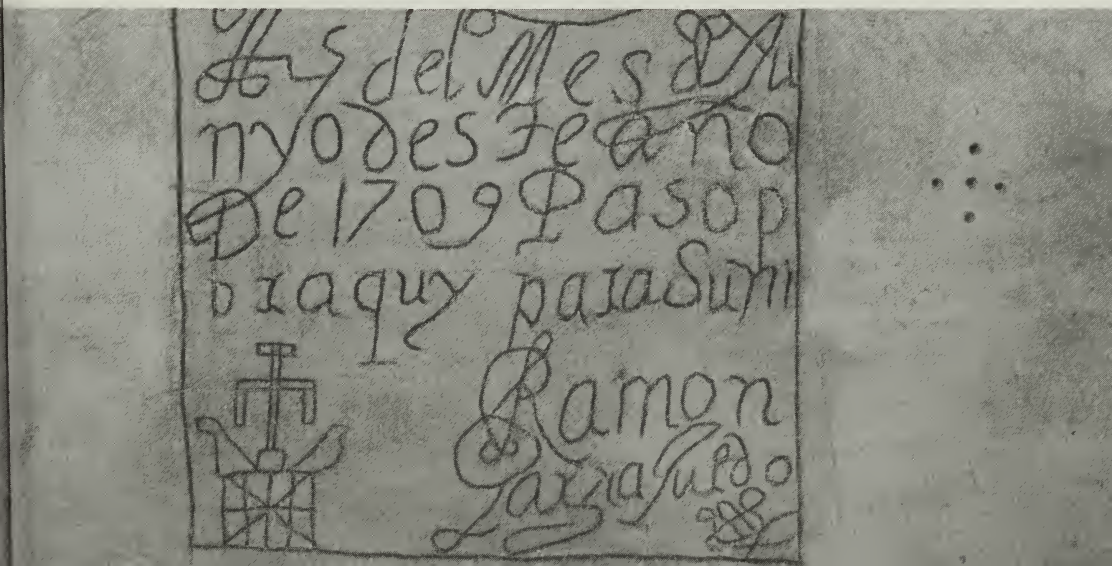
The round black discs along the bottom of the rock are section markers. Each one is lettered and they divide the face of the cliff into sections so the inscriptions can be easily located and recorded.

**7** In Spanish, this inscription says: “A veinticinco del mes de junio, año de 1709 paso por aqui para Zuñi — Ramon Garcia Jurado.”

Translated, it reads:

On the 25th of the month of June, of this year of 1709,  
passed by here on the way to Zuñi — Ramon Garcia Jurado.

*Ramon Garcia Jurado inscription, 1709*



You can find Señor Jurado's name in old Spanish documents. In 1728 he was the "alcalde mayor" of the Keres district, not far south of Santa Fe.

To your right is a blackened inscription which translated reads, "By here passed Pedro Romero on the 22nd of August, year of 1751." Little is known about this Spanish gentleman.

**8** "By here passed Andres Romero, of the year 1774." This Spaniard is unknown. The date is important because it is apparently the last Spanish inscription before the coming of the Americans in 1849.

**9** Notice the petroglyphs, particularly the four mountain sheep and the bear claw. Many Anasazi petroglyphs depict familiar animals of the early inhabitants of the region. These carvings may have been drawn to bring good fortune in a hunt. This suggests that mountain sheep and bear were once plentiful in the area.

The Spanish inscription above the petroglyph reads:

Pasamos por aquí el Sargento Mayor y el Capitan Juan de Archuleta y el Ayudante Diego Martin Barba y el Alfarez Agustin de Ynojos año de 1636.

Translated it reads:

We passed by here, the Sargeant Major and Captain Juan de Archuleta and Adjutant Diego Martin Barba and Ensign Agustin de Ynojos, the year of 1636.

The "Sargeant Major" was not an enlisted man as now — he was an officer in direct command of troops. The ensign was the standard bearer corresponding in grade to a second lieutenant. Archuleta was among the first colonists to come to New Mexico with Don Juan Oñate in 1598. Archuleta and Barba were implicated in a plot to assassinate the colonial governor and were beheaded on Santa Fe's plaza in 1643.

**10** Here is the oldest and most famous inscription at El Morro. It was done by the first governor of New Mexico, Don Juan de Oñate, in 1605, fifteen years before the Pilgrims landed at Plymouth Rock.

In 1604, Oñate rode south with thirty men to the Gulf of California. On his return the next year, he made his inscription, which reads:

Paso por aquí el adelantado Don Juan de Oñate del descubrimiento de la mar del sur a 16 de Abril de 1605.

The translation reads:

Passed by here the Govenor Don Juan de Oñate, from the discovery of the Sea of the South on the 16th of April, 1605.

By "Sea of the South," Oñate meant Gulf of California, an arm of the Pacific Ocean. He was not the first Spaniard to see it, of course.

This was not Oñate's first visit to El Morro — on December 13 1598, he passed here from Zuñi with a group of Spanish soldiers, traveling to the Rio Grande via Acoma.

*Juan de Oñate inscription, 1605*

Below the Oñate inscription, partly hidden by the yucca plant, is an inscription that reads:

By here passed the Ensign Don Joseph de Payba  
Basconzelos, the year he brought the cabildo of the realm  
at his own expense the 18th of February, of the year 1726.

What Basconzelos actually meant is not clear to us.

**11** Continuing along the cliff, among the many inscriptions and petroglyphs, you can see a church, some stars, crucifixes, a cavalry flag, and the prominent inscription of R. H. Orton, adjutant-general of California after the Civil War.

The long panel of Anasazi petroglyphs contain most of the common petroglyph styles found in the Southwest. It is difficult to tell what the ancient drawings mean; they are not a written language such as we use today. Most scholars believe petroglyphs were made for ceremonial reasons, possibly to bring good fortune to the activities and people of the pueblo.

**12** Begin here with the highest set of inscriptions. The ground level was higher then, as shown by this tree, which surely did not begin growing on top of a mound! Done by one of New Mexico's most famous frontier governors, this inscription reads:

Aquí estuvo de General Don Diego de Vargas, quien conquistó a nuestra Santa Fe y a la Real Corona todo el Nuevo Mexico a su costa, Año de 1692.

or:

Here was the General Don Diego de Vargas, who conquered for our Holy Faith, and for the Royal Crown, all of New Mexico at his own expense, year of 1692.

Twelve years earlier, in 1680, the Pueblo (Indian) revolt had taken place. Many Spanish were killed and the remainder fled to El Paso. In 1692, de Vargas returned to re-establish Spanish control of the pueblos. He was later imprisoned for three years in the governor's palace and when released, restored as governor. He died in Bernalillo in 1704.

Below the de Vargas inscription are three names, "Williamson," "Holland," and "John Udell," all with the same date of 1858. These men were members of the first emigrant train to try this new route to California.



A good account of the trip can be found in the *Journal of John Udell*, a Baptist preacher who, with his sixty-four-year-old wife, decided to visit his children in Sacramento. The party, consisting of forty families and their equipment, finally reached the Colorado River, only to be attacked by the Mojave Indians. Several of the group were killed and practically all of their equipment stolen or burned.

The survivors, including the elderly Udell and wife, returned to Albuquerque walking most of the way. They passed El Morro and arrived in Albuquerque nearly starved, in November 1858. Remaining there for the winter, Udell and some of the others again started for California in 1859 in the company of Lt. Edward F. Beale, famous for his camel caravan of 1858, which also came west by way of El Morro.

They had no difficulty reaching California and finding their children in Sacramento. Mr. Udell is known to have died in the Golden State a very old man.

**13** The first emigrant train (mentioned in Stop 12) was led by Mr. L. J. Rose. He was born in Germany and moved to New Orleans in 1830. He later moved to Iowa where he became wealthy in the dry-goods business.

Rose was wounded by Mojave Indians in the attack mentioned by Udell. After recovering from his wounds he went to Los Angeles and became one of its leading citizens.

**14** Some of the high carvings have the letters "U. P. R." written after them. In 1868, the Union Pacific Railroad ran a survey through here, but the project was never carried out. The development of the Santa Fe Railroad twenty-five miles to the north effectively ended the use of El Morro as a stopping place.

There is good reason to believe that practically all of the names you see here on the point date *after* 1850.

Looking west along the rock, you will note that the inscriptions end about where the small juniper is growing. Probably the rough surface beyond the little tree discouraged carving.

But don't stop here! Some of the best of the early Spanish inscriptions await you up the path.

**15** Slightly to your left, several miles away, is a multi-colored mesa. It is composed of the same material as El Morro, was formed about the same time, and is approximately the same height. The brighter colors are caused by thin films of iron oxide around the sand grains, which are not conspicuously present in El Morro. Lack of water kept the early travelers from stopping there.

**16** As the saying goes, the writer of this inscription "counted his chickens before they hatched." He tells us:

Year of 1716 on the 26th of August passed by here Don Feliz Martinez, Governor and Captain General of this realm to the reduction and conquest of the Moqui [Hopi] and [in his company?] the reverend Father Friar Antonio Camargo, Custodian and ecclesiastical judge.



A no de 1737 a los 26 de ag. Paso por aqui D<sup>n</sup> Feliz Martinez Govern<sup>r</sup> Cap<sup>l</sup> Gen<sup>l</sup> deese R<sup>no</sup>  
 ala 28 de setiembre y cono de moqui y chailoap POR<sup>o</sup> P<sup>r</sup> Antonio Camargo Custodio y Suez plesiafico

*Don Feliz Martinez inscription, 1716*

Governor Martinez found the Hopis unwilling to accept Spanish domination, and after about two months of quarreling, (mostly with words and fist-shaking) the expedition returned, quite unsuccessful, to Santa Fe.

Now continue on up to the next landing.

**17** Because they were written on the same day and seemingly in the same handwriting, we presume that this inscription and the one to the west were written by the same man. The first one says:

The 28th day of September of 1737, arrived here the Bachelor Don Juan Ignacio of Arrasain.

The second reads:

The 28th day of September of 1737, arrived here the illustrious Señor Don Martin de Elizacochea, Bishop of Durango, and the day following, went on to Zuñi.

The good "Bachelor" was a Bachelor of Laws, not necessarily a single man. The event records one of the first visits to this territory by a Bishop from Durango, Mexico.

*Don Martin de Elizacochea inscription, 1737*

DIA 28<sup>e</sup> DE SEP<sup>e</sup> DE 1737<sup>a</sup>  
 Llego aqui El H<sup>mo</sup> S<sup>r</sup> D<sup>n</sup> M<sup>rn</sup>  
 DE Elizacochea Obp<sup>o</sup> DE Durango  
 Y EL DIA 29 PASO A  
 ZUÑI

Aquí llegó el Señor Gobernador  
 Don Francisco Manuel de Silva Nieto  
 Que lo imposible tiene ya sujeto  
 Su Brazo indubitable y su Valor  
 Con los Carros del Rey Nuestro Señor  
 Cosa que solo el Puso en este efecto  
 De Agosto 5 Seiscientos Veinte y Nueve  
 Que se Bien a Zuñi Pasa y la Fe lleve

*Don Francisco Manuel de Silva Nieto Poem, 1629*

**18** Inscriptions on the north side are difficult to photograph because the sun shines around here only a couple of hours per day during the summer. Here is the only poem on the rock:

Aquí [llegó el Señor] y Gobernador  
 Don Francisco Manuel de Silva Nieto  
 Que lo imposible tiene ya sujeto  
 Su brazo indubitable y su valor  
 Con los carros del Rey Nuestro Señor  
 Cosa que solo el puso en este efecto  
 De Agostos 5 [Mil] Seiscientos Veinte Nueve  
 Que se Bien a Zuñi pasa y la Fe lleve.

The poem, of course does not rhyme when translated into English.

Here arrived the Señor and Governor  
 Don Francisco Manuel de Silva Nieto  
 Whose indubitable arm and valor  
 Have overcome the impossible  
 With the wagons of the King our Lord  
 A thing which he alone put into this effect  
 August 5, 1629 that one may well to Zuñi  
 pass and carry the faith.



**19** If you are an enlisted man, you'll appreciate this one. The first two lines of the inscription read:

The 14th day of July 1736 passed by here the General  
Juan Paez Hurtado, Inspector.

The second two lines, no doubt added when the good general's back was turned, read:

And in his company, the Corporal Joseph Trujillo!

We wonder what ever happened to Corporal Trujillo!

**20** You are now looking at the longest and one of the most interesting inscriptions on the rock, supposedly done by Governor Eulate:

I am the captain General of the Providence of New Mexico for the King our Lord, passed by here on the return from the pueblos of Zuñi on the 29th of July the year 1620, and put them at peace at their humble petition, they asking favor as vassals of his Majesty and promising anew their obedience, all of which he did, with clemency, zeal, and prudence, as a most Christian-like [gentleman] extraordinary and gallant soldier of enduring and praised memory."

The word crossed out appears to have been "gentleman." Somebody who knew the old boy apparently took exception to all this highflown praise. (That the erasure was done before 1849 can be proved; see Simpson, next.)

**21** Lt. J. H. Simpson, an engineer for the army, and Mr. R. H. Kern, a Philadelphia artist who rode around with the army drawing pictures, were the first English-speaking people to make a record of Inscription Rock.

They spent two days copying the inscriptions, and stated that when they were here, not a single English inscription could be found on the rock.

*Eulate inscription, 1620*

ycap, gen, de las pro<sup>as</sup> del m<sup>u</sup>ebome x<sup>o</sup> Pozel Reynro, S<sup>o</sup> Pasoporaquide bueltade los p<sup>u</sup>  
blos de Zuñi Mos, 29 de Juliodelaño de 1620 y los puso en pa<sup>z</sup> Sasu pedim<sup>o</sup> p<sup>u</sup>  
Diendole su faboz como basillas de suma<sup>o</sup> y denuebadiezon la obidiencia a todoloq<sup>u</sup>  
fise con el agasax eselo y prudencia como tanche isthanisimo ~~Stampazricu~~  
az y gallardo soldado de m<sup>u</sup>ca bable y lo adamemo



Lt. J.H. Simpson USA & R.H. Kern Artist  
visited and copied these inscriptions,  
September 17<sup>th</sup> / 18<sup>th</sup> 1849.

*Simpson and Kern inscription, 1849*

Recall the word "gentleman" crossed out at Stop 20? Mr. Kern's drawing faithfully shows the word crossed out just as you saw it.

The Spanish inscription below was done by one of three Spanish soldiers left to "guard" two thousand Zuñi Indians in 1699. It reads:

I am of the hand [that is, written by] of Felipe de Arellano  
on the 16th of September, soldier.

In 1700, the Zuñis apparently thought the odds in their favor were good, so they killed the three Spaniards.

To the right of Arellano's inscription is a marvel of Spanish "shorthand." A good scholar translated it for us. Here it is in both Spanish and English:

Se pasaron a 23 de marzo de 1632 años a la venganza de  
muerte del Padre Letrado. — Lujan

The translation reads:

They passed on the 23rd of March, 1632, to the avenging  
of the death of the Father Letrado. — Lujan

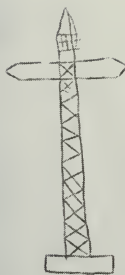
About the year 1629, Father Letrado built the earliest mission chapel at what we call today Salinas National Monument (near Mountainair, New Mexico, southwest of Albuquerque).

He was transferred to Zuñi in February of 1632 and was killed just a week later. On hearing the news in Santa Fe, Lujan and a party of soldiers reached Zuñi in remarkably fast time.

This is the end of the inscription part of our trail. You may retrace your steps back to headquarters, or, if you wish, you may continue your hike on up over the mesa top, past the ruins, and down to headquarters by the return trail on the other side.

no dfelip-dea  
se hembresol

SE<sup>sa</sup> P<sup>sa</sup> Azz<sup>sa</sup> D<sup>sa</sup> M<sup>sa</sup> D<sup>sa</sup> 1632<sup>sa</sup> A<sup>sa</sup>  
ACA Beng<sup>sa</sup> D<sup>sa</sup> M<sup>sa</sup> D<sup>sa</sup> Ip<sup>sa</sup> Ietxada<sup>sa</sup>  
Lujon<sup>sa</sup>



Lujan inscription, 1632

## Trail to the Top of the Rock and Ruins

The first stop is some distance along the trail, so keep walking and watch for it.

**1** The cave-like depressions in the side of the rock are created by water. Rain falling on the top of the mesa enters cracks in the rock, runs down the cracks (called joints), and comes out of small openings on the side of the mesa. The water seeping out of the opening gradually wears away the rock. The freezing of the water in winter and thawing in summer helps to weaken the sandstone.

The tall trees in the vicinity of this stake are ponderosa pine (*Pinus ponderosa*). They are readily identified by the needles which grow two or three to a cluster. These trees grow in well-watered, protected areas within the monument. The larger ones are somewhere between two and three hundred years old.

**2** Here you can stop and catch your breath before beginning the steep climb. Look at the top of the mesa, to your right, just below the railing. You can see very clearly two different formations of rock. The lower is the sandstone called Zuñi formation and the higher is the Dakota formation. The line between these two formations represents a time interval of between 25 and 30 million years. More about this later.

Behind the numbered stake near the base of the rock, you will see a Gambel oak (*Quercus gambelii*). It is commonly associated with ponderosa pine and is the most abundant oak of the low mountains and plateaus of the Southwest. It is characterized by its deeply-lobed leaves, and its habit of growth. It ranges from a shrub to a tree in size, and is often seen in dense

PLEASE STAY ON THE TRAIL

stands, which give it the name of "scrub" oak in certain localities. Deer and livestock browse this tree, and small animals use its acorns for food.

**3** The policy of the National Park Service is to keep the parks looking as natural as possible. Since it is natural for dead trees to be in a forest the ones you see in this area will not be cleaned up. When a tree falls in a National Park Service area it will lie where it fell and eventually will decay and supply nourishment for future trees.

**4** Take a break here and look at the valley between the multi-colored mesa and the higher parts of the Zuñi Mountains. This valley was formed by water gradually wearing away the softer rocks of the Chinle formation. The harder sandstones of El Morro and the adjacent mesa on the southwest and the sandstones and limestones of the higher slopes resisted such erosion.

During the last few million years, while the Zuñi Mountains were being gradually pushed up to their present height, more than ten thousand feet of sedimentary rocks have been removed from what you see. This has been done by running water and wind carrying away the rocks a few particles at a time. Before that, about 100 million years ago, this entire area, as far as you can see in any direction, was under the water of an ancient ocean. Forty million years before that, the sands of El Morro were accumulating on a broad, desert-like plain, built up by sand deposition of sluggish, wandering streams, and re-sorted by wind into large dunes.

Before continuing along the trail, you will notice many small trees around you which are called pinyon (*Pinus edulis*). These pine trees have two needles to a cluster and are never tall like the ponderosa pine. They are usually less than thirty-five feet in height, and have a rounded, compact crown. Pinyons are seldom found growing in pure stands but are associated with various kinds of juniper. Because of the nature of their growth, heavy stands of pinyon and juniper are often called pigmy forests. The pinyon produces edible nuts which are abundantly used by local residents as well as marketed commercially elsewhere in the United States.

**5** Here you can see at close hand the difference between the dark upper layers of ocean sands and the light color of the lower and earlier stream and dune sands. Look here at the cliff above you and a little to the right. The lower is Zuñi sandstone of the Jurassic period, and forms the bulk of El Morro. The upper is Dakota sandstone of the Cretaceous period, representing beach deposits of the ancient sea which covered all the area. The contact surface between these two units represents a time interval of between 25 and 50 million years when erosion instead of new deposition was taking place.



**6** Look on the left side of the trail and a little behind you. You will see a dark green stake that marks one of the four corners of the unexcavated ruin. Let your eye follow along the top of the incline to your right and you will see another green stake, another corner. As you follow the trail on this side of the box canyon, look to your left for the last two stakes and you can tell how big this ruin is. *Please do not leave the trail.*

This village was possibly two or three stories high, but after the Indians left, the roofs collapsed and the walls fell in. Then the sand blew in, weeds began to grow, and you see the result.

**7** Looking at the cliff wall across this little box canyon, you can see a definite horizontal line about half way down. The materials above and below the line were laid down about the same time, but the line represents a layer of softer material which has weathered away faster.

The reason for the unevenness is that stream channels cut into the underlying sandstone, and then, as the land slowly settled to allow the sea to encroach, the channels filled up with sand. The sands were reworked by waves on the beach and the tops smoothed out and leveled. Small lagoons and swampy areas formed along the coastline. As you climb the steps at Stop 11, you will cross a small seam of coal-like material which was formed from one of these swamps.

*The geological disconformity described at Stop 7*



If you look across the box canyon, on the horizon you will see the ruins of another village. It was occupied about the same time as the one on this side of the mesa.

Across the top of the mesa, the trail will be marked with two parallel lines. *Please stay between the lines.*

### STAY ON THE TRAIL

**8** The boulders of mixed colors topping the pedestals of Zuñi sandstone are the Basal Conglomerate of the Dakota formation. This involved erosion and reworking of the old surface (Zuñi) plus the deposition of new materials. Thus some of the light colored particles in the Dakota are Zuñi sandstone.

The steps cut in the rock were constructed by the National Park Service. They are not the work of prehistoric Indians.

**9** The line to the left of the post, extending through the rock on both sides of the mesa, is one of the principal causes of the development of the box canyon. After El Morro was buried by several thousand feet of younger rocks, some 60 million years ago, it was subjected to great pressures from the weight of the overlying rocks and the movements which caused the Zuñi Mountains to project so far above sea level. These pressures caused the sandstone to crack into the long openings which we call joints. As running water and wind gradually removed the overlying rocks, the waters were able to run down into the joints and, alternately freezing and thawing, broke up the rock into small fragments which could be washed away.

If you stand on this line and look down the box canyon to the west, you can see that each steep canyon wall is simply one side of a joint while the material on the other side has been eroded away. If you look eastward towards the headquarters area, along this joint line, you can see how El Morro maintains its vertical walls by breaking into blocks which fall away from the main mass of the sandstone and leave a vertical joint face. This joint line is different from the others which you may have noticed in climbing over the rock because it goes so far and cuts through the rock so deeply.

**10** The dark colored splotches are lichens. A lichen is composed of two different organisms, an alga and a fungus, living together and supporting each other. The fungus furnishes the moisture for the alga, and the alga the food for the fungus. This coexistence is known as *symbiosis*.

As you walk from Stop 10 to 11, you will pass several potholes that become pools of water after a rain. Some of these were artificially enlarged by the Indians who lived on the mesa top, to serve as supplementary sources of water.

**11** The dark color here is caused by carbonized remains from the plants which grew in the ancient swamps. Coal is formed in much the same way, but there is too much inorganic material in this seam to produce coal. This is the coal-like seam mentioned in Stop 7. On the very

top, the dirt is from the Mancos formation of Cretaceous age, and is composed of marine shales deposited in the ancient sea which covered the area. It was originally much thicker, and is younger than any of the other rocks exposed here.

Immediately ahead and extending to the right for nearly three hundred feet is the ruin called *Atsinna*, a Zuñi word referring to the "writing on rock."

**12** *Atsinna*, the larger of the two ruins, is approximately two hundred by three hundred feet, the size of some city blocks. Like the other village, parts of it probably were three stories high, mainly along the north side. It was terraced down toward the south, thus providing a southern exposure. You are standing on the second floor level about ten feet above the original ground level. The first floor was filled with debris from the collapse of the upper stories.

The Indians obtained most of their water from the pool at the base of the rock, as did the later Spanish and American travelers, but they also caught as much water as they could on the mesa top.

**13** This round room is called a *kiva*. Kivas were built primarily for religious ceremonial reasons, but had other purposes, just as the large halls in cities today are used for exhibits, concerts, lectures, and other activities. In addition to religion, these rooms were used for workrooms, playrooms, general meeting places, fraternal society meetings, etc.

*A portion of Atsinna. Part of the square kiva is shown at lower left*







*The box canyon as seen from its eastern end looking west*

*Looking out over Inscription Rock from the south*



Now contrast this round kiva with the square kiva across the trail toward the northeast. Both kivas served the same functions, but they represent two different architectural styles or traditions in use at approximately the same time.

Atsinna was occupied during the thirteenth and fourteenth centuries. The reason for the abandonment of this site is not definitely known. Perhaps the Indians found that the growing seasons were too short at this elevation and they had too many crop failures. Apparently these people moved to the west, where they founded the several Zuñi villages known in historic times. There, around the present pueblo of Zuñi, the growing season is slightly longer and irrigation can be practiced, and possibly the soil is more fertile.

The prominent peak on the horizon to the south is called *Cerro Alto*, which is Spanish for high mountain. This peak is a volcanic cinder cone.

**14** The stones you see at this stop were used for grinding corn after it had been dried and stored. The corn was placed on the large stone called *metate* and ground with the smaller stone called *mano*.

**15** The trail now descends from the mesa top back to the monument headquarters. We hope that you have enjoyed your trip over Inscription Rock. Should you have any questions, the ranger on duty will be happy to be of assistance.

PUBLISHED IN COOPERATION WITH THE NATIONAL PARK SERVICE BY  
**SOUTHWEST PARKS AND MONUMENTS ASSOCIATION**  
221 NORTH COURT  
TUCSON, ARIZONA 85701



Southwest Parks and Monuments Association was founded in 1938 to aid and promote the educational and scientific activities of the National Park Service. As a nonprofit organization authorized by Congress, it makes interpretive material available to park visitors by sale or free distribution. All net proceeds support the interpretive and research programs of the National Park Service.

22nd printing—10M—1/94



Recycled paper



