

(editor's note: This paper was transcribed from a handwritten cursive copy with various difficulties. For a perfect rendition, the reader might wish to consult the original, itself a copy, in the volume entitled *Literary Club Papers*, Dec 20, 1890 to May 30, 1891)

### The Cliff Dwellers of Colorado and Arizona

In the romance of History no country is so fascinating to me as Mexico and that territory formerly included in, but now called New Mexico, Arizona, and Colorado and the Peninsula south of it known as Central America. When Columbus discovered this country there existed in this region a people and a degree of civilization which astonished old Europe when word was received that a New World had been discovered. A New World! How much was included in that expression. When Cortez invaded Mexico he found a people of whom the wisest men of Europe had never dreamed. A new people with Kings and other officials, with organized governments with large armies, with well built cities and towns with new religions and new objects of worship, with well cultivated lands, with fields of grain and fruits, flowers and vegetables.

These people were in a certain sense cultivated and intelligent. They watched the motions of the Sun and moon and planets and calculated the length of the year with accuracy. They had looms and manufactured cloth of various kinds. They lived among each other as natives in Europe did, sometimes at peace and sometimes at war. They invaded each other's territory and cultivated that warlike spirit which seems to be innate in the human race. They knew the value of gold and precious stones, and the wealthier accumulated them then just as they do now. South of the portion which Cortez invaded were stupendous remains of a wondrous civilization which has passed away. But the monuments in stone and marble are still there, concealed and protected by the luxuriant vegetation of that tropical region, and there they will stay for ages to come.

North of Mexico proper and in what is now called Arizona, New Mexico and Colorado, existed another phase of life. Here were found those who lived in the Pueblos and the caves and cliffs, in addition to these worthy nomadic tribes which inhabited much of what is now included in our country. What a startling find was this and how little was it comprehended at the time. Greed of gold and unscrupulous religious zeal carried everything before them and much that might have thrown light on that interesting phase of human life, was ruthlessly destroyed.

We have no Rosetta Stone to decipher the hieroglyphics of that day, but are left to study them from the remains of a people now enshrouded in mystery. The field of study here is very broad and attractive but we will pass by the people of Central America and Mexico proper, and go to a people further north who took part in the great drama which was enacted there. We will confine ourselves to a single class known as the Cliff Dwellers. This is a comparatively recent subject of investigation, scarcely anything was known of them until after the war with Mexico, when this territory became a part of the United States. This country was so infested by wandering bands of fierce and well armed Indians, then it was a matter of great danger to enter it. It was not until 1874 that Mr. W. H. Jackson and Mr. W. M. Holmes with the Government Survey of Dr. F. V. Hayden, United States Geologist made any systematic investigation of this locality.

Just when these people lived and inhabited these valleys and mountainsides, I will not pretend to say. Some of their characteristics at least are shown by the remains of some of their dwellings, their mode of life and their means of defense. It is generally supposed now that the Cliff dwellers and those who lived in the Pueblos and in the valleys were the same and that they were not of the nomadic people, but cultivated their fertile river bottoms and in times of danger resorted to cliffs and fortresses for safety. These Cliff dwellers inhabited the territory now included in Colorado any portion of New Mexico, Utah and Arizona. So far as it has been explored they are found on the Pacific Slope and principally in the Valley of the Rio San Juan, which is a tributary of the Colorado of the West. South of this are the pueblos of the Moqui Indians, who were supposed by some to be the direct descendents of the Cliff dwellers. Still further south in Arizona in the Valley of the Rio Verde which is indirectly a tributary of the Gila River, we find some very interesting remains. It is probable that many other collections of these curious houses exist in these valleys which have not yet been explored by scientific men who have the time to investigate them thoroughly.

In 1875 and 1876 the US Geological Survey under Prof. Hayden visited in area in the states just mention covering about 6000 square miles, and Mr. Holmes states that there is scarcely a square mile in the 6000 examined that does not furnish evidence of previous occupation by a race totally distinct from the nomadic savages who hold it now, and in many ways superior to them. The ruins of these dwellings naturally divide themselves into three classes: 1st the family of agricultural settlements; second the cave dwellings and third the cliff houses or fortresses. Those of the first-class are located in the fertile river bottoms and were probably not built with reference to defense. The second are cave dwellings excavated in the sides of the bluffs with entrances from the ground or very close to it. A sufficiently large cavity was excavated and then the front was walled up leaving only a small doorway and occasionally a window. The cliff dwelling seems to have been chosen with exclusive reference to security and defense. These houses were smaller or larger depending on the space which was available for building purposes. They were located in natural niches in the face of the rock, and were often from 50 to 500 feet above the valley and were accessible by narrow and steep trails and frequently only by foot holds in the solid rock. The photographs which I have of the cliff houses in the Mancos Canon, will show better than words can, how inaccessible these places were and will also indicate that the inhabitants would not likely occupy them except when in danger from an enemy.

These clefts or open caves in the rocks were from fifty to 200 feet long and from ten to 100 feet deep, so that they could accommodate quite a large house and thus give shelter to a large number of persons. Holmes says of the cliff houses: they are of firm neat masonry, and the manner in which they are attached or cemented to the cliffs is simply marvelous. Their construction has cost a good deal of labor; the rock and mortar of which they are built having been brought for hundreds of feet up the most precipitous places. They have a much more modern look than the Valley and Cave remains, and are probably more recent, belonging rather to the close than to the early part of a long period of occupation. Their position has secured them however in a great measure from the hand of

the invader as well as from the ordinary effects of age.

The Rio Mancos which is a tributary of the San Juan, furnishes many excellent and well preserved specimens of these cliff homes. The walls seem to be very well preserved and the masonry is in excellent state of preservation. The stones composing the walls are nicely and accurately hewn and embedded in mortar which is still quite solid. There are several circumstances which favor the preservation of these remains and among them are the inaccessibility of the cliffs, the dryness of the atmosphere which prevents decay; the barrenness of the valleys but principally the protection of the overhanging rock.

In some places the rock face has been eroded by time and the elements, the artificial walls have been exposed and have fallen down, so that the depth of the caves has been very much reduced if not entirely obliterated. Where the overhanging rock has been more solid this has not been the case and we find consequently the homes of the cliff dwellers in a better state of preservation. At one place some houses were discovered about forty feet above the river located in an open groove or cave in the rock only four feet in height and from four to six feet in depth. The marks of the Mason's pick are quite fresh even now in the mud mortar which was supplied to the chinks with the bare hands, still bears the imprint's of the cuticle of the fingers. One wonders what use could have been made of such diminutive apartments.

A photograph is given of two houses which are at least 800 ft. above the river. The houses are located in two niches in the rock, one above the other; these being thirty feet of solid sand stone between the two. The upper one is within 200 feet of the cliff top with an arched and overhanging natural roof. The lower house was about sixty feet long and 15 feet deep at the deepest portion. Its front walls were flush with the precipice and are still about 13 or 14 feet high. It contained besides a number of long rooms, the circular room or estufa which was apparently approached by a tunnel of solid masonry, a portion of which was still in a good state of preservation. The existence of this circular chamber in all of these ruins leads Mr. Holmes to believe that the circle had some great significance to these people. In this cave the inner walls were smoothly plastered and gave evidence of having been used. The partition walls in this house ran directly backward from the front wall to the solid rock in the rear but did not extend to the rock roof above.

There are no evidences of any doors between them and the supposition is that they went from one apartment to another over the tops of the walls. Earthen vessels, pieces of rush matting, fragments of pottery were found here. The upper house was approached by a stairway of small niches out in the rock, but it would require an active person to make the ascent. When the top is reached he is at the door of the house with scarcely any standing room. This fact makes the house one of very great safety against an enemy and goes to show that these houses were built for a specific purpose.

The upper house was 120 feet in length and had a depth of 10 feet. A quantity of beans and corn were found in these ruins, and the walls were smoked, showing that they had been used. One naturally wonders how people living here could supply themselves with

water, an article essential to their comfort as well as their existence. Near a few of these houses were found springs of running water in the crevices of the rocks and this was the case in regard to the house above mentioned. Lots of water in proximity to these retreats and f        may be accounted for by geological alterations which have taken place in the past few hundred years. Those valleys supported many more in those days than they do now or than they could with the present water supply. It is unreasonable to think that these people would shut themselves up in these strongholds without a sufficient supply of an article so necessary to their very existence as water. Many of the then living springs have probably since dried up and disappeared. Corresponding alterations in the fertility of the valley, show themselves in scarcity of tree and shrub life.

In the Popular Science Monthly for October 1890 is a valuable article by Dr. Mearns U.S.A. who has made some interesting researches in the Rio Verde Valley in the southern portion of Arizona. This stream is a tributary indirectly of the Gila River. Its banks seem to be studded with the remains of the cave and Cliff dwellers and in its valley are some excellent specimens of the Pueblos. His investigations cover an area of several thousand miles and his paper shows that he was infused with the real spirit of enthusiasm on the subject. It is his opinion that the inhabitants of the Casa Grande of the Gila and of the caves up to the headwaters of its tributaries although diverse in form, style material and location, belong to a single race.

The products, implements, food substances and mode of agriculture as well as habits are essentially the same. He says "the walled buildings are of two kinds, those occupying natural hollows or cavities in the face of cliffs, and those in exposed situations. The former whose walls are protected by sheltering cliffs are sometimes found in almost as perfect a state of preservation as when deserted by the builders, unless the torch has been applied.

The latter or Pueblo style of architecture, usually occupying high points and commanding a wide extent of country, are in a ruined state, although walls are commonly standing to the height of one or more stories with some of the timber intact. He describes in a most interesting manner a building known as Montezuma Castle. It is situated on the right bank of Beaver Creek, is in a natural depression high up in a vertical lime stone cliff the base of which is 348 feet from the edge of the stream and about 40 feet above it. It is only accessible by means of ladders. On either side of it are cave dwellings. The Castle is really five stories in height. The first and second stories occupy an outer ledge lower than the rest of the Casa. A massive wall of masonry twenty eight feet high form the outer wall of the third, fourth, and fifth stories. The upper story has a battlement in front. The first story is entered by a window 3 feet 3 inches in height by 2 feet 4 inches in width at the bottom." The first room you enter is smoothly plastered within and blackened by fire.

The plastering bears finger marks and impressions of the thumb and hand showing it was laid on and smoothed by hands. The roof is formed by willows laid horizontally across eleven rafters of ash and black alder, upon this a thick layer of reeds is placed transversely and the whole plastered on top with mortar forming a floor to the chamber above it. "From this room the only means of exit except the windows by which it was

entered, is a small hole in the ceiling measuring 13 by 18 inches and bordered by flat stones, which were smoothly polished by the hands of the dwellers in passing back and forth, as this was apparently the only means of entering the 17 apartments above it." He describes the different floors but I shall quote from what he says of the fifth. Near the entrance the remains of a fire were seen and a goodly bundle of faggots laid against the wall at a convenient distance. An earthen vessel containing food and a small basket of mesquite stood hard by.

On further search a large spoon of sycamore wood and some gourd cups were found, and also a large metata and grinder, shells and shell ornaments as well as paints of various colors. Some oven shaped cupboards were built along the wall containing the remains of mescal, Spanish bayonet, nuts of piñon pine and other food substances and corncobs in abundance.

In other parts of the building several bone implements, including a corn shucker and a handsomely wrought marlin spike, fashioned from the leg bone of a deer were obtained. Scalps or head dresses were unearthed, also numerous food articles, bones of various animals, pieces of cloth, matting and basket work, ropes and cords of cotton and yucca, sticks for fire making, knitting or weaving and many other uses. He says in relation to the building, its location excites admiration and inspires respect for those who built it, whatever may have been the motive which prompted the selection of such a sight nor is it lacking in architectural beauty. Among the various and striking features of the architecture are the towers which are attached to the valley dwellings as well as the cliff fortresses. They are circular generally but sometimes square. They are sometimes composed of single circular wall from 14 to 26 inches in thickness and from ten to 22 feet in diameter. In other places there is a double circle of stone wall and interspace between the walls measure 13 feet and that of the inner or central one 25 feet. The outer courses have been dressed to the curve by stone instruments. The inner walls are 21 inches in thickness while the inner cross partition walls are lighter.

The outer wall had no door way or window within reach of the ground and it is supposed that entrance was obtained by means of ladders. A tower with very similar dimensions only with triple walls, was seen on the McElmo. In the center of all of these enclosures is the round room, known as the Estufa or Council Chamber. The same thing obtains now among the Pueblos but the sacred room is generally under ground and is only reached by a ladder. On the East Bank of the Colorado Chiquito is a strongly built dwelling in a natural cleft in the rock in front of which is a tower or bastion about six feet square. Access to the rooms above is obtained through an opening in the second floor of the bastion. The second floor is divided into several different apartments averaging from 8 to 10 feet in length and 6 feet in depth. The openings from one room to another are low and scarcely large enough to admit a man of ordinary stature. The roof of the second story forms a floor for a sort of parapet. The wall which extends up from the story below being about 4 feet high. Through this are several port holes 3 or 4 inches square on the inner and over a foot on the outer, thus giving them considerable range in using arrows from within. This tower probably extended originally as high as the upper story. It is very inaccessible and shows evidence of having been inhabited.

Let me for a moment mention some of the pueblos in the valley buildings. While they were not built exclusively for defense still they were very strong. One of the remarkable pueblos is that called Aztre Springs which was discovered by Capt Moss several years ago. At that time there was a living spring there. When examined by Mr. Holmes in 75 the spring had disappeared but its locality could be fixed. It presents one of the most imposing piles of masonry yet found in Colorado, "the whole group covers an area of about 480,000 square feet, and it is estimated that it represents 1,500,000 solid feet of stonework. The walls seem to have been double, with a space of 7 feet between them. They are 26 inches thick and are built of roughly hewn stones which were probably laid in mortar. There were two estufas one 1160 feet in diameter. In the Chaco Cannon is one of the most remarkable of all the pueblos. It is called Pueblo Bonito. It is 544 in length and 314 feet in width, and roughly approximates the rectangular in shape. In it are 21 of the circular rooms known as estufas. They are not subterranean.

The walls of this pueblo indicate that there was at least a second story and probably more as some of the walls are fully 30 ft high. Roughly estimated there were nearly 200 rooms on the ground floor. There is a difference in the character of the masonry in the construction of this building which indicates that it was not all built at once but was gradually added to at different times. In the Pueblo of Chettro Kettle or Rami Pueblo there are many points of interest. There are seven well marked estufas. One of them was originally divided into three stories all above ground, and another one 35ft in length showed four floors plainly, with indications that there may have been more. It was at one time surrounded on three sides, by a wall 935 feet in length, and 40 feet in height, giving 37,400 feet of surface and as an average of 50 pieces of stone appeared within the space of every square foot this would give nearly 2,000,000 pieces for the outer surface of the outer wall alone. Calculating the tower surface and the transverse walls alone it is estimated that it took 30 million pieces of stone to construct this pueblo.

Dr. Jackson says, the exterior walls are built of very small pieces arranged without order but so compactly and solidly as to give the impression of a homogeneous surface, and this is secured without the aid of any cement or mortar appearing between the joints. Recent explorations of the Mancoe Cannon have been made by Mr. B. R. Wetherill and his sons. He located at Mancos several years ago and with the aid of his sons has explored the hills and valleys for many miles around. They have been particularly fortunate in their researches and have brought to light many objects of interest.

At first their investigations were made from curiosity, but later on as they began to accumulate curiosities their interest increased and finally they did some systematic work, and their efforts have been abundantly rewarded. Among the many interesting cliff houses examined by these intelligent and scientific ranch men was one they called the "Cliff Palace". It is 425 feet long and 80 feet deep and is estimated to have been 80 feet high. There are 125 rooms on the ground floor. The building was 4 stories high with a tower and was built of dressed stone. In the construction of these walls a cement was used which was made of a substance now unknown. Many of the outer and partition walls are still in excellent state of preservation and protected as they are, they are likely to remain there for ages to come.

It was my desire to visit while at Durango last summer, these localities but I found it impossible. I have however the pleasure and satisfaction of meeting Mr. Wetherill and seeing his collection which he had brought to the city for exhibition. In this way I saw what had caused much time and hard labor to collect. He had probably 1500 or 2000 articles collected from various places and I have noted down some of the most interesting things. The skulls attracted my attention, most of these I saw had a very decidedly flattening of the occipital portion. The forehead is high and the lateral diameter abnormally wide. I was told that the skulls from the mounds have not this peculiarity. There were specimens there where the skulls presented an even normal curvature in all directions. The skulls of the Cliff dwellers seemed to be thinner than those which were taken from the mounds. The people evidently made good use of human hair and there were found several bunches of it tied up with the yucca string. This hair was not very long and was perfectly straight and of a dark brown color. It was woven into various articles. We were shown a pair of leggings made out of human hair. They were very nicely woven and had evidently seen good service.

The discovery of these explained why they had so carefully collected this human hair into little bundles. The mummies which we saw were extremely interesting. There were two or three full-grown persons & several infants. The bodies were bent so that they would take up as little space as possible. The arms were bent upon the chest, the leg was flexed on the thigh in the thigh on the abdomen so that the body was as compressed as possible. These bodies were buried in the houses in which these people lived. They seemed to have laid them on the floor and then surrounded them with a circle of stones which were placed upright, the interspaces were filled with ashes. The top was then covered with stones and the whole carefully cemented.

The preparation of the body for burial was very interesting and showed that these people had quite a high respect for the departed. The body was first wrapped in cotton cloth. The cloth was finely woven from the fiber of the yucca and some specimens of it which we had were remarkably good. It had a coarse look resembling what we now call muma cloth. I saw one piece there. It seemed to 18 by 30 inches. It seemed to be very finely woven and looked very much like a piece of linen duck. Next to the cotton cloth the body was wrapped in what was called feather cloth.

The warp of this cloth is made of yucca threads, and the feathers are from the turkey and probably the white feathers of the eagles breast. The specimens which I saw showed great skill in weaving. One piece had two colors, white and brown. The cloth originally must have been very pretty and resembled in some degree the feather cloth which we see at the present time. The fourth covering is made by pieces of willow which are cut about the same length as that of the body. The sticks are all about the same thickness. They are pierced several times at corresponding points and then a strong thread is passed through the openings and strips drawn together so that it makes a covering of willow sticks. These made a strong flexible covering and they were firmly fastened around the body with strings of yucca or thongs of the deer. Next to the feather cloth is a covering made of rushes which is platted in a very regular and beautiful manner. It makes a soft and easily

adjustable covering which would in a measure protect the feathers. Next to the rush cloth comes the willows.

The skeletons of the mummies which were on exhibition are very remarkable. There is one of a woman full grown about 5 ft. 6 inches in height; a portion of the hair still remained in it was of a decidedly blonde or yellow color. The skin on the face was dry and adhering to it are the remains of the feather cloth in which she was buried. There was also a skeleton of a man who measured 5 ft. 10 inches. He was evidently a man of rank and perhaps a chief. He was dressed in a very fine buckskin suit in addition to the other coverings and near him was lying a bow which measured more than 5 feet in length. As the bow was longer than his body one end of it was broken off so that it could be placed inside of his burial coverings. There were a great many sandals and there seemed in my hasty examination to present three kinds. First a sandal made of yucca leaf simply folded down and platted so that it made a covering for the sole of the feet. In the second variety the coarser fibres of the yucca had been removed and the sandal presented a much finer appearance. In the third variety the Yucca fiber seemed to have been beaten out so that it presented a fine appearance and the sandal as it was worn looked very much as if it was made of fine woven matting. There were numerous bunches of corn husks as well as corncobs. These were evidently kept for some good purpose.

They had specimens of the corn as well as beans and squash or pumpkin seed. There was one jar which was found on the shelf filled with dark colored beans. The mouth of the jar was sealed with mud, and this had evidently been placed away in reserve. I was very much interested in the panier which was made from rushes. It measured 18 by 80 inches. It would probably hold a considerable amount and resembled in many respects the panier seen at the present time abroad. The arrowheads are attached to a little piece of wood by means of dry sinews and this is inserted into a rush stem. On the latter are attached the feathers which guide its course. There were a good many samples of pottery many large pieces in an excellent state of preservation. The outer surface of some of these was smooth and on others it was rough as if it had been built up by narrow strips of clay which were placed upon each other layer by layer. They would hold from 2 to 5 gallons and were generally of a dark color.

There were numerous and needles ornamented with black lines. There were cups with handles and without. In the handle is a large opening which looks like a large keyhole. They are variously ornamented with geometrical figures. There were straight lines, zigzag lines, and straight lines with dots. A lamp which would hold about 6 ounces in which resembled very much the pompeian lamp except in size. In it was a fine wick which looked as if it might have been of modern manufacture.

There were numerous stone hammers with handles attached. There were bowls with ornaments inside and outside; there were bone needles large and small and bone awls; there were spoons made from the femur. There were several baby paniers which very much resembled those which are used by the Indians of the present day. There were instruments made of the stiff grass which would probably answer the purpose of both comb and brush. There were numerous rings made of yucca, to set pottery on; these rings

were quite necessary as the bottom of various cooking utensils were made of round, so that a ring of this kind was necessary in order to keep the vessel from rolling over. We were shown a tree which had been cut down by the dull hammers of the Indians. At that time they had no iron implements; all of their work was done with their stone axes.

I was very much interested in one large bowl which would probably measure 15 inches in diameter. There were black ornaments on the inner surface in straight and zigzag lines; on the outer surface was rude drawings of a man who was hunting of deer. His hands were extended holding his bow in them; in the distance was supposed to be the figure of the deer; further onward two figures resembling two turkeys or birds of some kind fighting each other. It is altogether a remarkable specimen and I studied it with a great deal of interest. Another piece of pottery had red and black figures. I saw numerous wicker baskets beautifully woven. I am glad to know that this subject is attracting the attention of the scientific department of the government, and there is now an exploring party there which will probably do much to throw light on this obscure page of human existence. It is certainly a subject worthy of the attention of scientific men and I hope that no effort will be spared to investigate it fully and to give us all the data possible to furnish a clear understanding as to these almost unknown aborigines.

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