

EXPLORATION OF A MOUND IN UTAH.

INFORMATION having been received that a mound existed on Santa Clara River, a few miles from the village of St. George, in Southern Utah, which from its position promised to yield interesting results, it was deemed of sufficient importance to have it explored. Dr. E. Palmer, being in that neighborhood last fall, was requested to direct the operations in the interest of the National Museum. The report which he submitted gives interesting details of what he observed during the progress of the work, and his impressions explanatory of the same.

With the necessary workmen and tools he proceeded to the mound in question, on the east side of the Santa Clara River, about three miles from St. George, Utah, and camped at its base. A general view of the situation showed an isolated elevation which had originally covered about half an acre of ground with a varying height of ten or twelve feet, which had been cut away nearly one half on the side of the river by the action of its waters during a freshet in 1861 or 1862. The outline it presented on the ground was quite irregular. The rise in the river had changed the position of the channel, and deepened it and also made it wider. At this time, however, the stream is reduced to a very small width, say from twelve to fifteen feet. What remained of the mound was quite a conspicuous object in the landscape, about forty feet from the river-bed, with a vertical escarpment on that side, but evidently it had been a circular work before its partial demolition by the river. The lines of stratification seen on the river front were conclusive as to its having been piled up by human agency, showing various horizons from the base up, on which dwellings had been erected and occupied by the residents of the spot until some member of the household, probably the head, should die, when it was burned down with all its appurtenances, the dead body included; leaving a deposit of ashes with incombustible stone implements to designate the location.

The construction of the dwellings was studied out on the spot and was found to be for the most part of upright sticks or staves,

probably wattled, supporting a roof made of slender poles, which sustained a grass thatch covered with mud for the outer layer. Others had a stone wall or foundation, laid up with clay mortar. The included space was square, shown by a well-defined line of ashes where the walls had been burned down, with bits of charcoal scattered over the surface which were derived from the poles of the roof, while over all was an almost continuous layer of clay, burned to the hardness of soft brick, which had covered the roof. These brick-like masses still preserved the impress of the wood upon which the clay had been plastered. The amount of ashes in each little inclosure differed somewhat, in proportion to the thickness of the roof, and the quantity of household implements or provisions which it may have contained at the time of the conflagration. The location of the domestic hearth seemed to be distinctly shown by the accumulation of a mass of ashes, semicircular in form, and ten or twelve inches deep. In several instances large flat stones were found neatly arranged around these fire-places, as if to retain the fire in its proper limits. Other inclosures or pens of slabs of rock were noticed, and were interpreted to be storing places for provisions. All the rock material used in and about the buildings was brought from a distance, probably by water-carriage on the river, there being no stone quarry near the place. There could not be discovered any regular disposition of the buildings in rows, circles, or around a square, but their location seemed to have been determined by some such event as the burning down of one dwelling, and the necessity of erecting another in some quarter at a distance, for the occupancy of the survivors.

Some portion of the skeleton of the cremated Indian was always found within the inclosure marked out by the lines of ashes. The effect of the fire had been to destroy the body, and what remained of the bones crumbled on exposure to the air; a portion of one or two crania being all that could be brought away. Many other objects were also found, such for instance as stone mortars, metates, pestles, grinding-stones, flint arrow and spear heads, earthenware jars, and such other Indian implements or property as could not be destroyed by the fire.

Adjacent to the skeletons was found what was judged to be an intended provision of water and food, arranged in appropriate vessels; those for water being generally of the same globular shape. The vessels were of hard-burnt earthenware, for the most part of a grayish color and ornamented inside with parallel black lines, with occasional triangular or quadrangular black spots.

These pots or jars or bowls, to the number of three, five, seven, and ten respectively, were discovered in connection with remains of the dead, as the several house floors were dug up and cleared away. In a few instances no earthenware was discovered; small deposits, however, of substances which were charred or otherwise decomposed pointed out where provisions had been left for the sustenance of the departed spirits. Throughout the whole mound refuse bones from food-animals of many species were discovered, and all exhibited signs of being split for marrow, or otherwise worked or handled.

Before any of the tribe to which the deceased belonged could be induced to erect another dwelling on the old site, much time, probably a generation or two, would have to elapse. In obedience to a powerful superstition and fear of the dead no one would be likely to reoccupy the ground until the name and character of the former occupant had been forgotten. In the mean time the old foundation would have to be filled up to the general level, and for this purpose earth would have to be brought from another quarter. That the descendants should cling to the old mound of their forefathers is in accordance with all aboriginal tradition, and a home on such a mound, surrounded by neighbors, might well be regarded as a place of security and defense from attack. This latter idea probably determined all such cases of the selection of mounds for permanent residence in those times. The people of this particular locality were of the usual stature, and from all their properties and surroundings are judged to most resemble the Moquis and Pimos; certainly they must be classed with Pueblo tribes, and the quality of the pottery and its ornamentation point directly to the Indians just named as their descendants. Thus, with the unchanging pertinacity of the race, the same place if not the same spot was built upon, destroyed by fire, and rebuilt upon, the same mode of life, customs, manufactures, being continued for ages, until the want of food or water, some overwhelming epidemic or murderous raid of enemies, brought extinction to the little colony.

The posture observed in placing the deceased before burning the dwelling and contents is that noticed all along the western coast of North and South America: the knees were drawn up and the chin rested upon them; and no rule seems to have been observed in facing the individual, no one of the cardinal points being regarded more than another. Some of the specimens of food discovered near the skeletons are charred or decomposed, but still

bear distinctive marks by which they can be certainly determined, such as corn and pine nuts : and the traces of slowly evaporating water clearly indicate its former presence in the appropriate vessels, which were generally globular in shape with a narrow neck or contracted orifice. Household utensils for grinding corn or seeds, stone knives and implements for skinning and dressing animals for food and for use in converting the skin into leather, stone tips for arrows and heads for spears, stone awls or drills for making perforations, stone hammers, celts, axes, grooved stones for smoothing arrow shafts, stone disks, probably for gambling purposes, several flat stones such as are now used by kindred tribes for baking, a stone pipe for smoking tobacco or its substitute, and a very large number of sharp-pointed bone awls were obtained, such as are now in use by many tribes for puncturing holes in buckskin for sewing. They are remarkably well preserved and did not crumble on exposure ; a result due probably to the previous elimination from the bone, by cooking, of all animal matter which might promote decomposition. No ornament or other object was found which could be referred to a European or other foreign origin. Some rough beads made of shell or bone were all, except that in one place a few small flat stone pendants of a greenish-blue color, perforated for stringing and made of the celebrated and rare turquoise or chalchihuitl, were found in connection with a skeleton probably of a chief, judging from the more than usual signs of opulence which surrounded him. These trinkets are obtainable only, so far as is now known, in one locality, namely, the Cerillos Mountains in New Mexico. Connected with these were pendants made of the iridescent pearly shell *Haliothis*, the nearest place for obtaining which is the shore of the Pacific Ocean.

In one stratum of ashes there were discovered some fragments of charred textile fabric, very coarse, but unmistakably twisted and plaited ; hence we may infer that some other clothing was in use besides the buckskin garment. The fibres of which these are made could easily be obtained from an agave or a yucca, fibre-bearing plants, which abound in Utah and Arizona.

The series of objects obtained which forces itself most upon the attention was the collection of earthenware vessels, nearly fifty in number. The choicest lot was of seven pieces in connection with one skeleton, associated with some very neatly made arrowheads, a flat stone with serrated edge, the turquoise pendants above named, bone ornaments, stone drills, bone awls, red paint (for the face), and an exceedingly sharp knife of obsidian. Some of the

better forms and finer kinds of pottery were near children's skeletons. The form, color, and ornamentation of the ware is very various, and the latter is often elaborate. Some pieces were glazed, that is, if we are to understand by this term that the vessel has been coated over, after it is shaped in ordinary clay, with a finer earthy mixture, which fuses into a kind of glass, making a smooth reflecting surface. The addition of an outer coating of finer material upon which to impress some kind of ornament can be shown also in other instances from Utah and Arizona to be very ancient.

The pottery vessels when extricated from near the interior of the dwelling were entire and undefaced, but where they had been exposed near the edge or margin to moisture or influence of saline efflorescence they were cracked and the glazing had scaled off.

The quantity of broken pottery strewn around the environs is only a repetition of what may be found in wonderful profusion all over the adjoining Territories of Arizona and New Mexico. The quality of the ware, the shape, and the uniformly characteristic ornamentation declare unmistakably that the tribes which manufactured the articles are now represented by their descendants the Moquis, Pimos, and Maricopas living north of the Gila River and forming the tribes of Pueblos or settled Indians of that country. The immense quantity of this pottery may be well accounted for by remembering that in such an arid country the most urgent and never-ceasing demand was for water to allay thirst. To provide for this it was customary to arrange rows of ollas or water jars of large capacity, sinking them up to their necks in the sandy soil so as to check evaporation from the surface, and, when opportunity served, to fill them and thus keep a store of the precious fluid at hand. Something analogous is seen in the rows of capacious jars of similar ware which have been found embedded in the soil near the ruins of Nineveh, in the Isle of Cyprus, and on the site of ancient Troy. Oil or wine or water, all or either of them, may have been contained in the latter, but the fragments of pottery on these sites are also very numerous and similarly accounted for.