

POTTERY OF THE ANCIENT PUEBLOS.

By WILLIAM H. HOLMES.

INTRODUCTORY.

A study of the pottery of the ancient Pueblo peoples is here commenced in accordance with plans formed years ago by the Director of the Bureau of Ethnology. His aim was to present to the world a monographic work upon the splendid material obtained by the Bureau, including with it the important collections made previously by himself. The preparation of this work has been postponed from time to time with the view of completing the collections, which were being enriched by annual visits to the Pueblo country. Meantime I began the study of the collection for the purpose of securing at the start a satisfactory classification of the material on hand.

The present paper is the first result of that study. I have, however, taken up only the more ancient groups of ware, leaving the rest for subsequent papers. A comparative study is not attempted, for the reason that a detailed examination of all the groups to be considered is absolutely essential to satisfactory results. Conclusions drawn from partial observations lead generally to error.

There were great difficulties in the way of treating satisfactorily the modern varieties of ware, as no one had sufficient familiarity with the language of the Pueblo tribes to discuss the ideographic phases of the ornamentation. Mr. F. H. Cushing's studies bid fair to supply this want, and his recent return from Zuñi has led to the preparation of the valuable paper presented in this volume.

Mr. James Stevenson, who has procured a large portion of the collection of modern pottery, has published catalogues with copious illustrations. Most of the cuts have been prepared under my supervision, and have been selected with the view of securing engravings of a full series of typical examples for a final work.

PUEBLO ART.

DISTRIBUTION.—The ancient Pueblo peoples dwelt in a land of cañons and high plateaus. They had their greatest development in the valley of the Rio Colorado, where they delighted to haunt the shadows of the deepest gorges and build their dwellings along the loftiest cliffs. The limits of their territory are still in a measure undefined. We discover remnants of their arts in the neighboring valleys of Great Salt Lake, the Arkansas, and the Rio Grande, and southward we can trace them beyond the Rio Gila into the table-lands of Chihuahua and Sonora.

Thus outlined, we have an area of more than one hundred thousand square miles, which has at times more or less remote been occupied by tribes of town-building and pottery-making Indians.

CHARACTER.—High and desert-like as this land is, it has borne a noble part in fostering and maturing a culture of its own—a culture born of unusual needs, shaped by exceptional environment, and limited by the capacities of a peculiar people. Cliff houses and cavate dwellings are not new to architecture, and pottery resembling the Pueblo ware in many respects may be found wherever man has developed a corresponding degree of technical skill; yet there is an individuality in these Pueblo remains that separates them distinctly from all others and lends a keen pleasure to their investigation.

TREATMENT.—The study of prehistoric art leads inevitably to inquiries into the origin of races. Solutions of these questions have generally been sought through migrations, and these have been traced in a great measure by analogies in archæologic remains; but in such investigation one important factor has been overlooked, namely, the laws that govern migrations of races do not regulate the distribution of arts. The pathways do not correspond, but very often conflict. The arts migrate in ways of their own. They pass from place to place and from people to people by a process of acculturation, so that peoples of unlike origin practice like arts, while those of like origin are found practicing unlike arts. The threads of the story are thus so entangled that we find it impossible to trace them backward to their beginnings.

For the present, therefore, I do not propose to study the arts of this province with the expectation that they will furnish a key to the origin of the peoples, or to the birthplace of their arts, but I shall treat them with reference rather to their bearing upon the processes by which culture has been achieved and the stages through which it has passed, keeping always in mind that a first requisite in this work is a systematic and detailed study of the material to be employed.



FIG. 240.—Part of a large vase from Epsom Creek, Utah.—4

Fragments of this class of ware are found throughout the cañoned region of southern Utah and for an undetermined distance into Nevada. I have already described fragmentary specimens from Kanab and therefore pass on to the west.

DISTRICT OF THE RIO VIRGEN.

The most notable collection of this coiled ware ever yet made in any one locality is from a dwelling-site tumulus near Saint George, Utah, nearly three hundred miles west of the Rio Mancos.

About the year 1875, the curator of the National Museum obtained information of a deposit of ancient relics at the above locality, and in 1876 a collector was sent out to make an investigation. The result, so far as collections go, was most satisfactory, and the account furnished gives an insight into the customs of this ancient people not yet obtained from any other source. On the Santa Clara River, a tributary of the Rio Virgen, about three miles from the Mormon town of Saint George, a low mound, which I suppose to have been a sort of village-site tumulus, was found. The outline was irregular, but had originally been approxi-

*Note: the unnamed 1875 collector was Dr. Edward Palmer, see Salt Lake Herald newspaper article from November 28, 1875.

mately circular. It was less than ten feet in height, and covered about half an acre. One side had been undermined and carried away by the stream. The work of exhumation was most successfully accomplished by means of water. A small stream was made to play upon the soft alluvium, of which the mound was chiefly composed. The sensations of the collector, as skeleton after skeleton and vase after vase appeared, must have been highly pleasurable.

It is thought that the inhabitants of this place, like many other primitive peoples, buried their dead beneath their dwellings, which were then burned down or otherwise destroyed. As time passed on and the dead were forgotten, other dwellings were built upon the old sites, until quite a mound was formed in which all the less perishable remains were preserved in successive layers.

Following the customs of most primitive peoples, the belongings of the deceased were buried with them. Earthen vessels were found in profusion. With a single body, there were sometimes as many as eight vases, the children having been in this respect more highly favored than the adults. There seems to have been no system in the arrangement either of the bodies or of the accompanying relics.

The majority of the vases were either plain or decorated in color, but many of the larger specimens were of the coiled variety. About sixty vessels were recovered. Those of the former classes will be described under their proper headings.



FIG. 241.—Vessel from the tumulus, at Saint George.—4.

The shapes of the corrugated vases are of the simplest kind. The prevailing form corresponds very closely with the Cliff House specimen illustrated in Fig. 239. One unusually large example was brought back in fragments, but has since been successfully restored. It stands

nearly seventeen inches high and is sixteen inches in diameter. The plain part of the rim is one and one-half inches wide, and the lip is well rounded and strongly recurved. The lines are quite graceful, the neck expanding below into a globular body which is just a little pointed at the base. The color is dark, from use over the fire. The fillets of clay were narrow and very neatly crimped. Roughly estimated, there were at least three hundred feet of the coil used. The vessel has a capacity of about ten gallons.



FIG. 242.—Vase from the tumulus at Saint George.—4.

Vases of this particular outline may be found, varying in size from these grand proportions to small cups an inch or two in height. Of a somewhat different type is the vessel shown in Fig. 241. The outline is symmetrical. The neck is comparatively high and wide and swells out gently to the widest part of the body, the base being almost hemispherical. A band about the neck is coiled and roughly indented, while the body is quite smooth. The plain band about the mouth is broad and sharply recurved. The coils are wide and deeply indented. They have been smoothed down somewhat while the clay was still soft. The vase shown in Fig. 242 is characterized by its upright rim, elongated neck, round body, and plain broad coils. The fillets are set one upon another, apparently without the usual imbrication. This latter feature occurs in a number of cases in the vessels of this locality.

The bottle given in Fig. 243 is quite comely in shape. The neck expands gracefully from the rim to its junction with the body, which swells out abruptly to its greatest fullness. The coil is not neatly laid. The indentation began with the coil, but was almost obliterated on the lower part of the vessel while the clay was yet soft. The fillets are not so well

smoothed down on the interior surface as usual, a ridged appearance being the result. This comes from the difficulty of operating within a much restricted aperture. The color is gray, with a few effective clouds



FIG. 243.—Vase from the tumulus at Saint George.— $\frac{1}{2}$

of black, the result of firing. Another, of similar form, was taken from the collection by unknown persons.

The only example of coiled ware from this locality having a handle is a small mug. Its body is shaped much like the larger vessels, but it is less regular in outline. The single vertically placed handle, now partially broken away, was attached to the side of the body near the top, and consisted of a rough cord of clay less than half an inch in diameter. The Saint George tumulus furnished a number of vessels with smooth, unpainted surfaces, very similar in form and size to the coiled vessels. They are generally blackened by use over fire, and, like the large coiled pots, were evidently used for culinary purposes. A few smaller vessels of the same style of finish exhibit forms characteristic of the painted ware, as will be seen by reference to the illustrations of these two groups.

From the same source we have two bowls of especial interest, as they have coiled exteriors and polished and painted interiors. One of these is illustrated in Fig. 244. They form an important link between the two varieties of ware, demonstrating the fact that both styles belong to the same age and to the same people. A similar bowl, found in possession of the Zuñi Indians, is illustrated in another part of this paper, Fig. 254. Another was obtained at Moki. Fragments of identical vessels

are found occasionally throughout the whole Pueblo district. One piece from the San Juan Valley has figures painted upon the coiled exterior surface, the interior being polished and unpainted. Specimens from the vicinity of Springerville, Arizona, have designs in white painted over



FIG. 244.—Bowl with coiled exterior and painted interior: Saint George.—4.

the coiled surface. A large number of well-made, hemispherical bowls from this locality have a coiled band about the exterior margin, but are otherwise plain and well polished. Some are brownish or reddish in color. Many of them have been used over the fire.

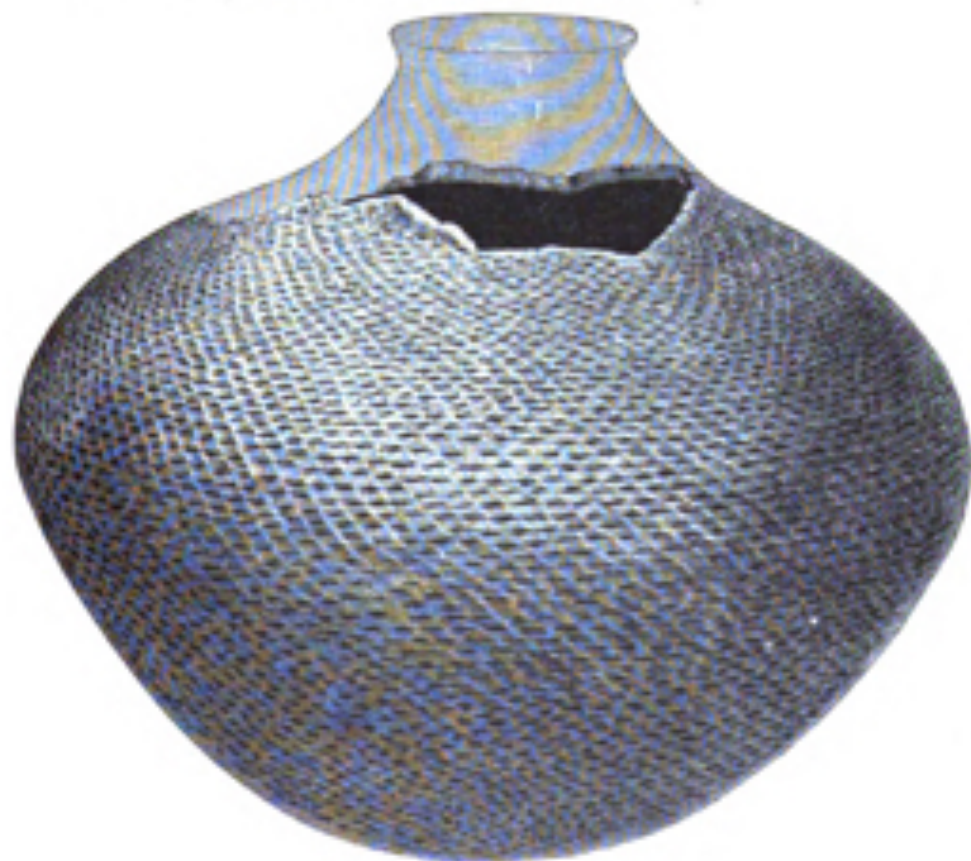


FIG. 245.—Vase from Parowan, Utah.—4.

The ceramic remains of Utah present some puzzling features. As we go north from the Rio Virgen there is an apparent gradation from the

These vessels are plentiful in the province of Tusayan, and many of them, as indicated by their color, construction, and texture, belong to the yellow and orange groups of ancient coiled ware. There is in many cases an easily discernible gradation from the wholly coiled through the partially coiled to the plain ware. In some cases the coil has been so imperfectly smoothed down that obscure ribs encircle the vessel indicating its direction, and in other cases fractures extend along the junction lines, separating the vessel when broken, into its original coils. These vessels are large and heavy, with wide mouths and full bodies, which are occasionally somewhat compressed laterally, giving an oval aperture.

Similar pithoi like vessels are in daily use by the Mokiis and also by the Zufis, Acomas, Yumas, and others. They are employed in cooking the messes for feasts and large gatherings, for dyeing wool, and for storing various household materials. The modern work is so like the ancient that it is difficult in many cases to distinguish the one from the other.

Besides the typical pot or cask there are many varieties of plain vessels, some of which appear to be closely related to, or even identical with, the classes usually finished in color. These include bowls, pots, and bottles. I present three examples from the tumulus at Saint George, Utah. The little bottle, shown in Fig. 255, is remarkable in



FIG. 255.—Bottle from the tumulus at Saint George.—†

having a subtriangular shape, three nearly symmetrical nodes occurring about the most expanded part of the body. An interesting series of similar vessels has been obtained from Tusayan, some of which are decidedly askoidal in shape.

Similar to the last in general outline is the curious vessel given in Fig. 256. It was obtained in Southern Utah, and is now in possession of the Salt Lake City Museum. The three nodes are very prominent and curve upwards at the points like horns. An upright handle is attached to the side of the neck.

A large bottle-shaped vessel from the same locality is illustrated in Fig. 257. The neck is short and widens rapidly below. The body is large and globular, and is furnished with two small perforated ears



FIG. 256.—Vase from the tumulus at Saint George.—4.

placed at the sides near the top. There are a number of similar examples in the collection from this place. We have also a number of handled cups, mostly with globular bodies and wide apertures. All are quite plain.

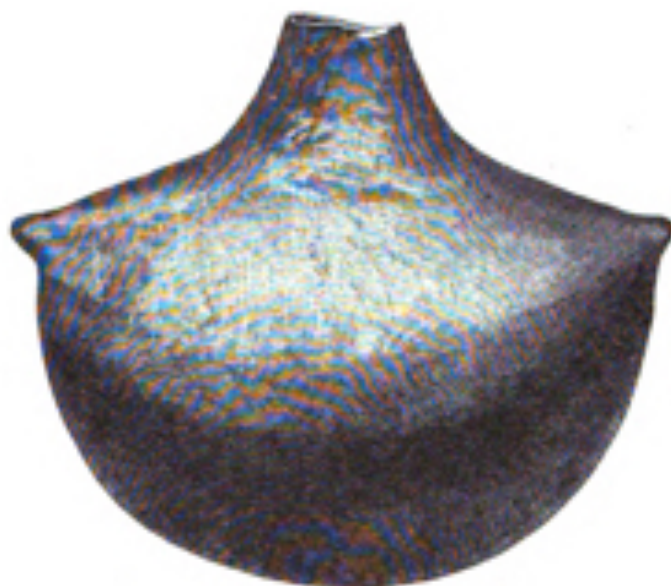


FIG. 257.—Vase from the tumulus at Saint George.—4.

Examples from this and other sections could be multiplied indefinitely, but since the forms are all repeated in more highly finished pieces it is needless to present them.

tached to the side of the bowl in a vertical or a horizontal position. It may be long or short, wide or narrow, simple or compound, and is not always evenly curved. In certain forms of cups the vertically-placed loop occupies the whole length of the vessel, suggesting well-known forms of the beer-mug.

High-necked cups, vases, and bottles have rather long, vertically-placed loops, giving a pitcher-like effect. These may consist of two or more strands placed side by side or twisted together. Rarely an animal form is imitated, the fore feet of the creature resting upon the rim of the vessel and the hind feet upon the shoulder. Perforated knobs often take the place of the loops, and unperforated nodes and projections of varied shapes are not unusual. Some of these, placed upon the upper part of the neck, represent the heads of animals.

A novel handle is sometimes seen in the ancient vases of Cibola and Tusayan. While the clay was still soft a deep abrupt indentation was made in the lower part of the vessel, sufficiently large to admit the ends of two or three fingers, thus giving a hold that facilitated the handling of the vessel. I have seen no looped handles arching the aperture of the vessel, as in the modern meal baskets of the Zuñis.

ECCENTRIC AND LIFE FORMS.—The simple potter of early Pueblo times seems barely to have reached the period of eccentric and compound forms, and animal and grotesque shapes, so common in the pottery of the mound-builders of the Mississippi valley, the Mexicans, and the Peruvians, are of rather rare occurrence. The last section of this paper is devoted to life and eccentric forms.

For convenience of treatment, the following illustrations will be presented by districts, beginning at the northwest.

ILLUSTRATIONS.

DISTRICT OF THE RIO VIRGEN.

Under the head of coiled pottery I have given a detailed description of the remarkable dwelling-site tumulus at Saint George, Utah, which has furnished such a complete set of the fictile works of the cliff-house potter, the first collection of importance known to have been made by exhumation. I will now present the painted ware and point out its very interesting local peculiarities. All the ordinary shapes are present excepting the olla. Vessels of this form are all of the plain or coiled varieties. The paste is gray and the surface color is usually a light gray. A small percentage of the vessels are painted or stained red. The designs are all executed in black, and are for the most part nicely drawn. They differ slightly in a number of ways from those of other districts, their relationships being, with a few exceptions, more

intimate with the ware of the Rio San Juan. A characteristic of this pottery is the thinness of the walls and the hardness and tenacity of the paste. In form a striking feature is the occurrence of bowls of oval form, and in one case such a bowl has sides cut down or scalloped and ends prolonged. The oval form is sometimes seen in other districts, and the elongation of portions of the rim is a feature especially characteristic of the Pima and Mojave work of to-day.

BOWLS.—I have already shown in Fig. 244 a small bowl from this locality, in which a coiled exterior is combined with a polished and painted interior. This is an unusual combination, the exterior commonly being plain. The following examples are grouped, as far as possible, according to their painted designs. A usual and very widely distributed decoration consists of a belt of figures encircling the inner margin. In its simplest condition it is only a single broad line, but more frequently it is elaborated into a tasteful border so wide as to leave only a small circle of the plain surface in the bottom of the vessel. The figures present much variety of effect, but combine only a few elements or ideas, as the following figures will amply show. All are rectilinear, or as nearly so as the conformation of the vessels will permit. No example of exterior decoration occurs. As my illustrations are necessarily limited to a few pieces, those having the simpler combinations of lines are omitted, and such only are given as exhibit the decorations of this district to the best advantage.

The bowl shown in Fig. 258 may be regarded as a typical example.



FIG. 258.—Bowl: Tumulus at Saint George.—†.

It is a plain hemisphere of gray clay, with roughly finished exterior and whitened and polished interior surface. It is eight inches in diameter and nearly four inches deep. The painted design occupies a band about two inches wide, and consists of two broad bordering lines inclosing meandered lines. The triangular interspaces are occupied by serrate figures, giving to the whole ornament an appearance characteristic of textile borders.

Two small bowls have borders in which the meandered lines are in the natural color of the ground, the triangular spaces being filled in with

black. In one case the effect of the guilloche is given in the same manner.

Few vessels exhibit a more characteristic example of the ornamentation of this ware than that given in Fig. 259. It is identical in surface finish with the last, excepting that the exterior has been painted red. An exceptional feature may be noticed in the shaping of the rim, which has been brought to a sharp edge.



FIG. 259.—Bowl: Tumbias at Saint George.—4.

The design occupies the usual space, and consists of a very elaborately meandered or fretted line, which is so involved that the eye follows it with difficulty. Four units of the combination complete the circuit of the vessel. In another specimen, which also has the design divided into four parts, the lower line of each part is made straight, by which means the space left in the bottom of the vessel is square instead of round, as in the other cases.



FIG. 260.—Bowl: Tumbias at Saint George.—4.

Another variety of decoration; quite characteristic of this region, consists of a band of fret-work dashed boldly across the inner surface

of the bowl, giving a most striking result. These figures appear to be fragments of continuous borders, taken from their proper connections and made to do duty on a surface that had ordinarily been left



FIG. 261.—Painted device.

without decoration. This observation has led to the proper interpretation of many enigmatic combinations at first thought to have especial application and significance.

The handsome shallow bowl presented in Fig. 260 has been badly broken and carefully mended while still in the hands of its aboriginal owners. It is ten and one-half inches in diameter, and only three and three-fourths inches in depth. The surface finish is identical with that of the preceding example. The

design, which consists of a single segment of a chain of fret-work, is drawn in broad, steady lines. Fig. 261.

Not unlike the last in its leading features is the vessel illustrated in Fig. 262. The label indicates that it was collected at Kanab, Utah, a Mormon village ninety miles east of Saint George. The design is carried over the whole inner surface, and is somewhat difficult to analyze. There is little doubt, however, that it consists of portions of fretted or meandered patterns arbitrarily selected from basketry or other geomet-



FIG. 262.—Bowl from Kanab.—4.

rically embellished articles, and applied to this use. The complete device is shown in Fig. 263.

The following examples are unique in their styles of decoration. The first, Fig. 264, resembles the preceding save in its painted device. Like a few others, it has been badly fractured and carefully mended by its Indian owners. It was obtained also at Kanab, and is nine inches in

diameter by four and one-half in height. The design is cruciform in arrangement, the four parts being joined in pairs by connecting lines. It exhibits some very unusual features (Fig. 265), and we are led to suspect that it may in some way have been significant, or at least that it is a copy of some emblematic device.

The almost total absence of life forms in the art of the primitive Pueblos has often been remarked. One example only has been discovered in this region. This occurs in a subject painted on the inner surface of a rather rude, oblong, bowl, from the Saint George tumulus, Fig. 266. A checkered belt in black extends longitudinally across the bowl.

At the sides of this, near the middle, are two human figures, executed



FIG. 263.—Painted device.



FIG. 264.—Bowl from Kanab.—

in the most primitive style, as shown in Fig. 267. Their angular forms are indicative of textile influence. The middle part of the bowl is broken out, so that the feet of one figure and the head of the other are lost.

These figures resemble those painted upon and picked in the rocks of the pueblo region, and the triangular head is sometimes seen in the ceramic decoration of modern tribes. A bowl with similar figures was brought from Tusayan by Mr. Mindeleff. It is illustrated in Fig. 268.



FIG. 268.—Painted device.

Among the many fine things from the mound at Saint George are a few red bowls. They were made of a slightly reddish clay, or the paste has reddened uniformly in burning, and a slip or wash of bright red



FIG. 266.—Bowl with human figures: Tumulus at Saint George.—4.

color has been applied to the surface. The designs are painted in black, but differ in style from any of the preceding. This work corresponds



FIG. 267.—Painted design.

very closely indeed with the decorations of similar vessels from the Little Colorado. The marked peculiarities of the ornamentation and



FIG. 268.—Bowl with human figures: Province of Tassayn.—4.

color of these bowls give rise to the idea that they may have been intended for some especial service of a ceremonial character. It is not

impossible, however, that these vessels reached very distant localities by means of trade. A representative example is shown in Fig. 269. The broad interior band of ornament is divided into four compartments by vertical panels of reticulated lines. The compartments are occupied by groups of disconnected rectangular fret-links on a ground of oblique stripes.

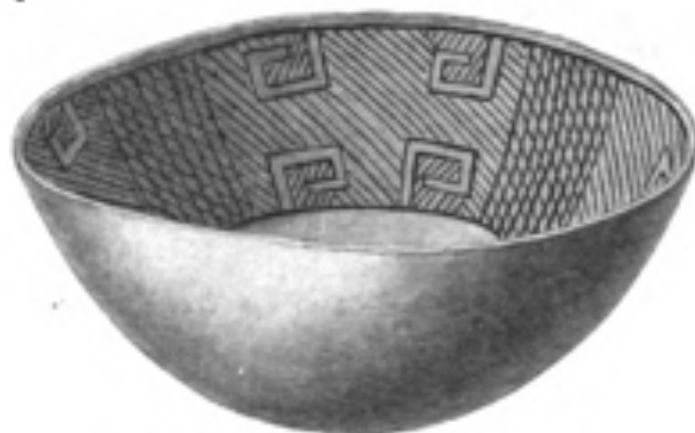


FIG. 269.—Red bowl: Tumulus at Saint George.—4.

The heart-shaped bowls previously mentioned include medium sized and small vases, with slightly conical bases, distended shoulders, and much constricted, often depressed, apertures. They are of very general distribution, but like the hemispherical red bowls are rarely found in numbers. It is probable that they were devoted to ceremonial rather than to domestic uses. The shapes are generally pleasing to the eye; the finish is exceptionally fine, and the designs, though simple, are applied with more than usual care.

A very good specimen from the tumulus at Saint George is illustrated in Fig. 270.



FIG. 270.—Heart-shaped bowl of red ware: Tumulus at Saint George.—9.

The bottom in this case is slightly flattened, and the incurved lip but slightly sunken. The paste is a light red and the surface has received

a coat of bright red color. The design is in black, is extremely simple, and rather carelessly drawn. The principal figure seems to be a very simple form of the favorite device—the meander.

A large fine bowl much like the preceding, and obtained from the same locality, is owned by the Salt Lake City Museum. The design is of the same class, but very much more elaborate. Another example from Saint George is smaller and yellowish-gray in color, with figures in red and black. At Kanab I picked up fragments of a small vessel, highly polished and of a rich, brownish-purple color, the designs being in black. Another fragment showed designs in bright red and black upon a yellowish ground.

OLLAS.—I have already called attention to the fact, that the Saint George tumulus furnished no example of ollas or large-necked vases of the painted variety, vessels of this class being plain or of the coiled ware. In the vicinity, however, I collected fragments of the white painted pottery derived from large vessels of this class, very much like the large, handsome vessels of ancient Tusayan. A number of such fragments come from the vicinity of Kanab. Plain vessels of this shape were obtained from the tumulus at Saint George. They are identical in every other respect, save the presence of designs, with the painted pottery. Some have received a wash of red, while it is not improbable that others have lost their color or decorative figures by wear or weather.



FIG. 271.—Red pitcher: Tumulus at Saint George.—4.

HANDLED VESSELS.—From the tumulus at Saint George we have a very excellent example of pitcher, which is shown in Fig. 271. The shape is not quite satisfactory, the neck being clumsy, but the workman-

ship is exceptionally good. The surface is even and well polished and the color is a strong red. The painted design in black, upon the red ground, consists of a number of meandered lines, to which are added at intervals small dentate figures, as seen in the cut.

DISTRICT OF THE RIO SAN JUAN.

In a number of ways the valley of the Rio San Juan possesses unusual interest to the antiquarian. Until within the latter half of the nineteenth century, it remained wholly unknown. The early Spanish expeditions are not known to have penetrated its secluded precincts, and its cliff-houses, its ruined pueblos and curious towers have been so long deserted that it is doubtful whether even a tradition of their occupation has been preserved, either by the nomadic tribes of the district or by the modern pueblos of the south. Certain it is that no foreign hand has influenced the art of this district, and no Spanish adventurer has left traces of his presence.

The ceramic remains are more uniform in character and apparently more archaic in decoration than those of any other district. They belong almost exclusively to two varieties, the coiled ware and the white ware with black figures. The former has already been described, the latter must now pass under review.

It is unfortunate that so few entire vessels of the painted pottery have been found in this region. The fragments, however, are very plentiful, and by proper study of these a great deal can be done to restore the various forms of vessels. In my paper upon this region, in the Annual Report of the Survey of the Territories for 1876, I gave a pretty careful review of the material then in hand. Finding that in very few cases were there whole vessels representing the achievements of the ancient potter and decorator, I presented a number of restorations from the better class of fragments. This was done in a way that could lead to no serious misapprehension, as the fragments used were always clearly indicated. The expert need never go astray in his estimate of the character of the vessel to which given pieces belonged, and his restoration from them gives a completeness of conception to the reader or student at a distance that could never be acquired by the most careful study of illustrations of the fragments. The fragments are exceedingly plentiful about camp sites and ruins, and fairly whiten the debris slopes beneath the houses in the cliffs. I found my mind so diverted by these fascinating relics that it was often difficult to keep the geologic problems of the district properly in view.

No tumuli or burial places were observed, but I suspect that careful search will bring them to light, and that they will yield much richer results than the scattered fragments of the surface. The district now under consideration comprises the entire drainage of the Rio San Juan. It includes the well-known valleys of the Animas, the La Plata, the Mancos, the McElmel, and the Montezuma on the north, and the Chaco

and the de Chelly on the south. On the north I include also a portion of the valley of the Rio Dolores. The center of the district will not be very far distant from the corner stone of the four political divisions of Colorado, New Mexico, Arizona, and Utah.

The collections from the valley of the Rio de Chelly, one of the richest sections of this district, are very badly scattered, and the vessels cannot be identified. Many fine things have been carried away to the south and are now in the collections from Cibola and Tusayan; while others have been brought east by the various expeditions without a proper record of the locality. This is to be regretted, as it makes it impossible to study the shades of distinction between the wares of neighboring localities.

Bowls were very numerous and greatly varied in size, finish, and ornamentation. Many have received painted designs both inside and out. This occurs with those having nearly upright rims. Handled-cups of hemispherical shape are also common, but the heart-shaped bowls are of rare occurrence. Bottle-shaped vessels and ollas have not, as in the south, formed a prominent feature. For some of the latter very neat lids have been made, the rims being shaped for their reception. Upright vessels with handles are common. Eccentric or animal forms have not been found.

BOWLS.—The arrangement of the designs upon the bowls is far from uniform. In a great majority of cases, however, they occupy belts encircling the inner and outer margin. The fragmentary condition of the remains makes it impossible to restore designs that covered the entire surface of the vessels. The decorations comprise nearly all the usual elements and motives. In Fig. 272 we have a small bowl from Monte-



FIG. 272.—Bowl: Montezuma Cañon.—4.



FIG. 273.—Bowl: Rio San Juan.—4.

zuma Cañon, Utah. In form it is a deep hemisphere. The design is upon the interior surface, and consists of a broad band bordered by heavy lines and filled in with vertical lines. The rim is ornamented with seven pairs of dots. Fig. 273 is restored from a fragment obtained in southwest Colorado. It shows an interior ornament consisting of a well-drawn chain of volutes.

Many of the bowls were large and handsomely finished, both surfaces being whitened and polished. A superior example is given in Fig. 274.

Neat borders have been applied to both interior and exterior surfaces. They are suggestive of patterns produced through the technique of textile products, and consist of interrupted forms of the meander. I have restored from small fragments in this and other cases, for the reason that no large fragments of the finer vessels are preserved.



FIG. 274.—Bowl: Rio San Juan.

Fig. 275 illustrates a very pleasing vessel. It is hemispherical, and about eleven inches in diameter. A narrow zone of ornament based upon the meander encircles the exterior margin of the rim, and a broad, carefully drawn design, consisting of two parallel meanders, Fig. 276, occupies the interior. It will be seen that the meandered fillets are in white, and the bordering stripes and the upper and lower rows of



FIG. 275.—Bowl: Rio San Juan.

triangular interspaces are in solid black, while the median band and its connecting triangles are obliquely striped. It should be noticed that the oblique portions of the meanders are indented or stepped. This is a very usual occurrence in these decorations, and may be taken as a pretty decided indication that they were copied, more or less directly,

from textile ornamentation in which all oblique lines are necessarily stepped.

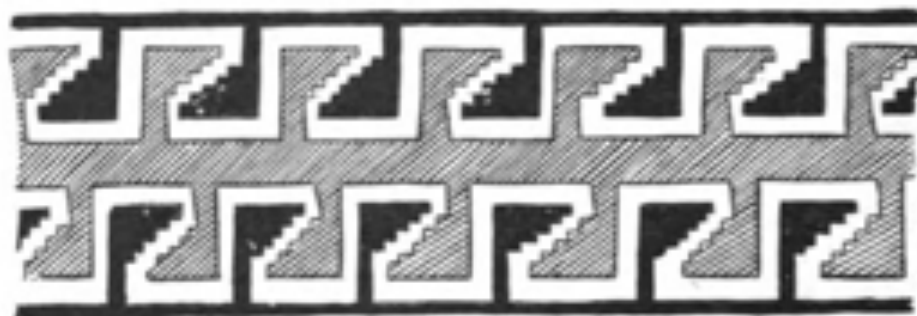


FIG. 276.—Painted design.

HANDLED CUPS.—Small cups were generally furnished with handles and probably served as ladles and spoons. An entire specimen is rarely found. Two are illustrated in Figs. 277 and 278. They were obtained by W. H. Jackson from the ruins of Montezuma Cañon. The handles of these vessels vary a great deal; some are flat, while others are round, consisting either of a single or a looped roll of clay; some are hollow,



FIGS. 277 and 278.—Handled cups: Montezuma Cañon.—4.

resembling the handles of gourds, and a few are made of twisted fillets. This latter form belongs generally to upright cups.

OLLAS.—It is quite impossible to make satisfactory restorations of the vases or ollas from the small fragments recovered. The evidence is



FIG. 279.—Vase: Rio San Juan.

sufficient, however, to show that vessels of this class were numerous, and often large. I have made two restorations of small examples belonging to this class, of which there are fragments showing the neck and upper part of the bodies. The bottoms are so universally rounded that I have drawn full globular shapes; Figs. 279 and 280. The most striking character of Fig. 279 is the shape of the rim, which is fashioned for the reception of a lid. The same feature

is noticed in a small vessel obtained at Zuffi.

Examples of lids from the San Juan Valley are shown in Figs. 281 and 282. They were evidently designed for vessels of the class just described. The specimen given in Fig. 281 is neatly finished and embellished, and the quality of the ware is very superior.

HANDLED VASES.—Many small vessels were furnished with handles, some horizontal and others vertical. Of the first variety is the example shown in Fig. 283. The fragment was obtained from the great ruin at "Aztec Springs," Colorado. It shows a small, symmetrical vessel, with black lines and devices. The handle, which probably had a companion on the opposite side, is strong and neatly made.

Figure 284 represents a very pretty little vessel, brought by Mr. W.



FIG. 280.—Vase: Rio San Juan.



FIG. 281.—Vase lid: Rio San Juan.

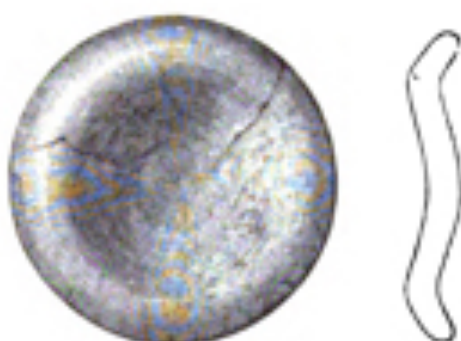


FIG. 282.—Vase lid: Rio San Juan.

H. Jackson from the Cañon de Chelly. It is of the usual gray polished ware, the base being somewhat roughened by use. The design consists of encircling lines combined with a belt of disconnected triangular hooks or fret-links.

Handled mugs with round bodies and wide high necks were in great favor with the San Juan potter. There are but two entire specimens in the collection. These were obtained by Capt. Moss, of Parrott, who stated that they, with other relics, had been exhumed from a grave in the San Juan Valley. Both are comparatively rude in construction, and seem to be considerably weathered. The one shown in Fig. 285 is decor-



FIG. 283.—Handled bottle: Rio San Juan.

ated with a classic meander which encircles the body of the vessel. The other, illustrated in Fig. 286, has the upper part covered with simple figures resembling bird tracks.



FIG. 284.—Small bottle: Rio San Juan.—j.

Among the most novel works of the ancient potter are the flat-bottomed mugs with upright sides, and with vertical handles which extend the whole length of the vessel, giving very much the appearance of a German beer mug. For a long time it was thought improbable that a vessel of this character should be the *bona fide* work of the cliff dweller, for his status of culture seemed to call for globular bodies and rounded bases. But so many examples have

been found that there is no longer room for doubt.



FIG. 285.—Handled mug: Rio San Juan.—j.



FIG. 286.—Handled mug: Rio San Juan.—j.



FIG. 287.—Handled mug: Rio San Juan.—j.



FIG. 288.—Handled mug: Southern Utah.—j.

Fig. 287 is restored from a large fragment brought from the San Juan Valley. Its walls widen a little below, and the very pretty ornament is

Near St. Georges, Southern Utah, on the Santa Clara River, Dr. Edward Palmer examined a mound about ten feet high, oval in form, and containing about half an acre. The mound seems to have been built up as follows: The former inhabitants constructed small dwellings of sticks, or sticks and stones, with mud roofs. When one of their number died, his remains, together with his apparel, implements, arms, ornaments, and vessels of food and water, were fastened up with him, and the whole consumed by fire. This is proved by the occurrence, irregularly throughout the entire mound, of strata of ashes in the exact shape of the ground plan of the house, and in the ashes the skeleton and objects deposited with the corpse. The fire-place in all can be located by a deeper layer of ashes. Subsequently earth was brought and leveled over the spot on which a new edifice was to be erected. Thus the process of accumulation went on, similar to what is exhibited on a grander scale in the city of Jerusalem and other old cities of the East.

FROM ST. GEORGE.

Collecting Specimens and Curiosities—Aboriginal Relics

ST. GEORGE, Nov. 28, 1875.

Editors Herald:

Dr. Edward Palmer, who visited this region seven years ago, making research into the botany and natural history of this vicinity, returned here about the beginning of this month, and proceeded to make collections of various sorts of timber fibre and useful plants for the Centennial, and also to make collections of various things for the Smithsonian institute, including the relics and curiosities of the ancient population of this country. We directed his attention to a very large and ancient mound on the Santa Clara, which he has, with a force of help, been excavating for the last week, and has succeeded in bringing to light many articles curious, strange and interesting, among which are mills, stone and bone tools and articles for amusement, tools of flint, obsidian, and others of beautiful stones, pots for cooking, vessels for carrying water, eating from and for various other uses; the walls of ruined houses and other strange things of the buried past of thousands of years ago. The doctor is an industrious and determined worker; has made a large collection here, and leaves in a few weeks for other fields of labor. Within the past two years he has made research in botany and natural history from Eastport, Maine, to the extreme of Florida, then around to the Pacific and its most interesting islands, and has made discovery of many new things in both vegetable and animal life.

J.