

The Exploration of a Burial-Room in Pueblo Bonito, New Mexico

by George H. Pepper (1873-1924)

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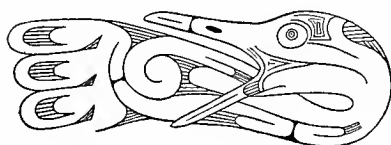
PRESENTED TO

FREDERIC WARD PUTNAM

IN HONOR OF HIS SEVENTIETH BIRTHDAY, APRIL 16, 1909

BY

HIS FRIENDS AND ASSOCIATES



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THE EXPLORATION OF A BURIAL-ROOM IN PUEBLO BONITO, NEW MEXICO

BY

GEORGE H. PEPPER

THE great series of ruins in northwestern New Mexico known as the Chaco Canyon group was first brought to public notice in 1776, when Don Bernardo de Mier y Pacheco visited and mapped the region; but it was not until 1844 that these ruins were mentioned in print.¹ Several descriptions of the ruins were published during the late forties and early fifties, notably those of Lieut. J. H. Simpson and William H. Jackson; but it remained for Professor F. W. Putnam to plan the first expedition for the exploration of one of these walled-in towns. He had been interested in this group of pueblos from the time the first Government reports concerning them appeared, and had looked forward to the day when he could investigate one of them.

In 1895 he received promise of coöperation and pecuniary aid from Messrs B. Talbot B. Hyde and F. E. Hyde, Jr., of New York City; and in the spring of 1896 an expedition was sent to the Chaco canyon with instructions to confine the work of that year to the ruined Pueblo Bonito. Owing to other duties that claimed his time, Professor Putnam could not assume active charge of the field operations, and it was the good fortune

¹ Josiah Gregg, *Commerce of the Prairies*, 1844.

of the writer to be appointed to that position. The scientific work was planned by, and the investigations were conducted under, the direction of Professor Putnam, and whatever results were obtained may be ascribed to his untiring interest and efforts.

The following description concerns one of the most interesting rooms explored, and the object of the paper is to record the remarkable ceremonial objects and other material found therein. This room is situated in the northwestern part of Pueblo Bonito, and near it are several other rooms in which bodies had been buried and ceremonial objects stored. It is 33 of the author's notes, and will be so designated when reference thereto is made.

Room 33 is directly west of and connected with room 32. When the latter was first entered, it was found that the sand had almost filled the western doorway, but there was enough space remaining to allow passage through it, and into room 33. Entrance was gained by the writer, and, with the aid of a candle, certain objects were seen which were in keeping with the ceremonial sticks that protruded from the sand in the room already examined. The room proved to be somewhat smaller than room 32; but the sand had not filled it so deeply as the other room. The first object to claim attention in room 33 was a bunch of five ceremonial sticks that had been thrust between the ceiling beams in the southwestern corner of the room. Directly under them, and protruding from the sand, was a burial-mat made of osiers sewed together side by side. In the southeastern corner the tops of two ceremonial sticks projected above the sand; in the northwestern corner was another ceremonial stick; and in

the northeastern corner of the room were what afterward proved to be two wooden flageolets.

The ceremonial sticks in the southwestern corner of the room were the first objects to be removed. The beams extended east and west. The points of the sticks had been thrust into the spaces between the beams, the carved ends projecting at least a foot below the ceiling. Not having been exposed to dampness, all the sticks are in a state of perfect preservation (see pl. VII, 2). Three of them are of the subdivision of type 1 shown in plate V; that is, of the type having a carved knob on the end, drilled and having a groove on the raised band at the opposite end of the handle. These sticks measure in length 1 m. 8.5 cm., 1 m. 3.5 cm., and 1 m. 7 cm. respectively, the average diameter being 1.3 cm. A deposit of nearly three hundred sticks was found in room 32: the five show clearly one feature that could not be studied to advantage in the specimens from this room, owing to the fact that the tapering ends of most of them had been destroyed; namely, the gradual and symmetrical tapering of the ends opposite the carved handles. Great care was evidently employed in making this end of the stick cylindrical. On certain parts of the sticks the marks of the grinding implement may be seen, but it is evident that the surfaces have been polished, probably by means of a finely powdered substance and deerskin. The drilled ends of these sticks have practically the same diameter. On one specimen, directly below the drilled portion, is a two-strand yucca cord, a knot at one end marking the point of attachment of a feather.

The fourth specimen is of the third type (pl. V, 3); that is, the one having the flattened end. Instead of uniformly plane,

this stick is elliptical in parts; the one surface, however, always preserving the full rounded form. The specimen is absolutely perfect, and measures 1 m. 28.2 cm. in length, having a width of 2.9 cm. at the blade-end and 2 cm. at the opposite end, and an average thickness of 1.3 cm.

The fifth specimen is of the fourth type (pl. v, 4), and is somewhat irregular in shape. It is 2 cm. in diameter at the end opposite the blade, and tapers gradually toward the opposite or blade-end. The blade itself is 1.6 cm. in width, and the stick is 1 m. 6 cm. in length.

After these sticks were removed, the flageolets in the northeastern corner of the room were uncovered. As already stated, there were two of these; one (H-4563) protruding 11 cm. above the surface, the other (H-4560) 8 cm.: they were standing in an upright position between two posts and the northern wall. It was deemed advisable to remove the flageolets before the general work of excavation was begun, in order that there might be no danger of anything falling upon them.

Specimen H-4563 (pl. 1, 3) was the first to be removed. This was covered with a deposit of earth and vegetable mold; but on parts of the surface of the portion protruding from the sand could be detected decorative designs in black and in colors, over which was a coating of gum having the appearance of shellac or varnish. When the specimen was cleaned in the Museum, it was found that the entire surface was covered with an elaborate decoration in black, orange, and green. The note-holes proved to be four in number, with intervals, on the average, of 6.1 cm. between them, each 6 mm. in diameter.

This flageolet is of the "self" type; that is, the kind that was played without a mouthpiece. It is 69 cm. in length, 2.3 by 2.1 cm. in diameter at the bell-end, and 1.5 cm. in diameter at the mouth-end, and tapers from the former to the latter.

In plate I, 2, the design is shown as it would appear if on a plane surface — a combination of cloud-terraces and circles separated by encircling bands.

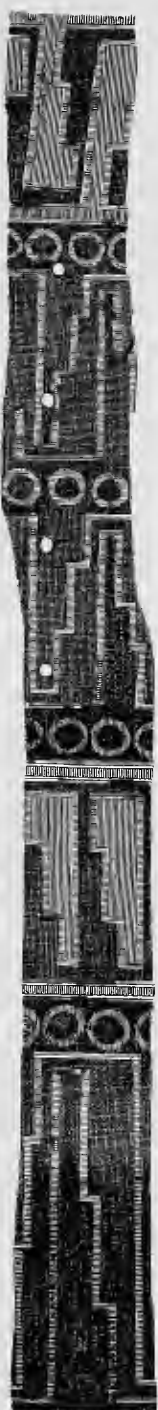
This flageolet is extraordinary on account of the elaborate decoration. Another interesting feature is the coating of gum which covers the entire surface. This use of such material by the ancient Pueblo Indians was suggested by the late Frank H. Cushing; but some students doubted whether any process of this kind was ever employed. The finding of this flageolet having the part that was above the surface in perfect condition, sets at rest all doubts on this point. The exact nature of the material used, however, has not been ascertained. When applied, the coating was no doubt transparent, but at the present time the surface is semi-opaque and cracked.

The drilling of this specimen is also an interesting feature. At the bell-end the sides are only 2 mm. thick; from this point they gradually increase in thickness to 6 mm. for one side and 3 mm. for the opposite side, at the center. Thus it is evident, that, in making the flageolet, the hole was not drilled uniformly in the center. The periphery of the aperture in the mouthpiece is beveled so that it is reduced to an average thickness of 1 mm.

When discovered, the second flageolet (H-4560) was lying but a few inches from the one just described. It is absolutely plain, there being no decoration on the surface. This flageolet, as shown in plate II, 1, is 69.5 cm. long. The bell-end averages



1. Flagpolet of extraordinary size from the southeastern corner



2. Painted design forming the decoration on flagpolet H-4563



3. Painted flagpolet (H 4563) found in the northwestern corner
FLAGPOLETS FROM BURLIN, ROOM, PUEBLO BONITO

2.5 cm. in diameter, and the mouth-end 1.7 cm. As in the other specimen, there is a gradual taper from the bell-end to the mouth-end. This flageolet is not so finely made as the decorated specimen. At the bell-end the sides average 4 mm. in thickness, while the hole is 8 mm. in diameter; the corresponding dimensions are somewhat more than 4 mm. and 8 mm. respectively. This specimen is warped, and is broken in two near the center. There are four holes, the distances between the first and second, beginning at the mouth-end, being 5.6 cm.; between the second and third, 6.8 cm.; and between the third and fourth, 5.6 cm.: the holes average 6 mm. in diameter. This also is a "self" flageolet. It is made of cottonwood carefully dressed smooth, but devoid of polish. Both ends are flat, and the edges are not rounded.

Below the surface of the sand-deposit, within a few inches of the flageolets just described, the mouth-end of another flageolet was found. It is practically the same in style as the end of the undecorated specimen, and has been broken at a point which leaves in evidence half of the first note-hole. The fragment is 13 cm. long and averages 1.5 cm. in diameter near the mouth-end, the aperture at this point being 8 mm. in diameter. This specimen also is undecorated.

Among the objects found in the northeastern corner were ceremonial sticks, the description of which will be given after that of a series of flageolets found in the southeastern corner. These flageolets, five in all, were found beneath the surface, in the space between a post and the southern wall. In form they are similar to the plain specimen found in the northeastern cor-

ner; but there are individual differences that make them especially interesting from the scientific standpoint.

The first flageolet (H-4557) differs from the plain one just mentioned in having a ridge 1.2 cm. broad, which forms a band at the end of the bell (pl. II, 3). From the evidence at hand, it would seem that this form typifies the squash-flower, which, in the modern flageolets used by the Flute priests of the Hopi, is represented by a bell-shaped piece of squash-rind attached to the end of the flute. Dr J. Walter Fewkes and the late Mr Frank H. Cushing mentioned this fact on examination of these specimens. With the exception of the carved end, the flageolet is absolutely plain. It is 36 cm. long, 2.6 cm. in diameter at the bell-end, and averages 4 cm. in thickness. The opening opposite the mouth-end, as in all of the flageolets of this series, is caused by a tapering countersink carried to the hole which is drilled through the instrument. The distance from the edge to the point where the main hole begins averages 2 cm., the diameter of the general boring averaging 7 mm. In this specimen, only two note-holes, averaging 3 mm. in diameter, have been preserved: the interval between them is 4.2 cm.

The second flageolet removed (H-4558; pl. II, 4) is of the same shape as the plain one from the other corner. It is 35 cm. long, 2.1 cm. in diameter at the bell-end, and averages 1.3 cm. at the mouth-end; the taper from the bell-end is gradual. The rim at the bell-end averages 3 cm. in thickness. The mouth-end is missing, the flageolet having been broken at a point just below the second hole. The interval between the holes is 4.1 cm.; the holes are 3 mm. in diameter. All of the flageolets in this series were found lying with the bell-end upward; the

mouth-ends of all but one specimen were decayed to so great an extent that they could not be preserved.

The third flageolet (H-4559; pl. II, 2) is a perfect specimen: it has the bell-shaped end, and, as in the flageolet last described, there is a gentle taper from the bell-edge to the main part of the flageolet. There are no decorations on the surface. The specimen measures 51.5 cm. in length, and in diameter 2.5 cm. at the bell-end and 1.5 cm. at the mouth-end. There are four holes, as in the other specimens. The hole at the mouth-end is 5 mm. in diameter. The interval between the first and the second hole from the mouth-end is 4.5 cm.; between the second and the third, 4.7 cm.; and between the third and the fourth, 4.3 cm.: the holes average 4 mm. in diameter.

The fourth flageolet (H-4561; pl. II, 5) is of exceptional form in that it bears on the surface an animal figure carved in relief, identified by the late Mr Cushing as that of a bear. The specimen is 4.2 cm. in length and 2.1 cm. in width at the shoulder: the head is 10.3 cm. from the bell-end. The height of the figure above the general surface of the flageolet averages 3 mm. As may be seen in the plate, the head and legs are brought out in relief, and the eyes are formed by a slight protuberance on each side of the head. The snout is flat, resembling the snout of a frog rather than that of a bear. The bell-end of the flageolet has a raised collar-like piece, similar to that of figure 3, this band being 1.5 cm. in width. The fragment of the flageolet here shown is 36 cm. in length, and the bell-end is 2.5 cm. in diameter: the edge averages 4 mm. in thickness. Only two holes, each 4 mm. in diameter, remain, the interval between them being 4.3 cm. The surface of this instrument was carefully

smoothed; but, apart from the carved figure, there are no decorations.

The fifth flageolet (H-4562; pl. II, 6) bears on its surface an animal figure carved in relief, the work being similar to that on the specimen just described. The figure is 4.2 cm. in length. The nose is 6.5 cm. from the bell-end. The breadth from the outer extremities of the paws is 2.3 cm. Only half of the animal is shown. The head, the upper part of the body, and the front-legs are carved in relief. At the posterior end the figure is raised seven millimeters, and on a level with the ears, eight millimeters above the surface. The animal represented is evidently a mountain-lion, as the end of the tail is shown lying along the median line of the back. The paws are flattened, as they naturally would be in the case of the animal mentioned; and the eyes and ears are carved in relief. The long tapering head causes the figure to resemble that of a lizard rather than that of a lion, especially as there is a portion cut away under the head, causing it to appear very thin; but, even though the tail were not shown in position on the back, the presence of the ears indicates clearly that the figure was not meant to represent one of the lower forms of vertebrates, as a lizard.

The fragment of the flageolet illustrated measures 38.5 cm. in length, and averages 2.5 cm. in diameter at the bell-end. The thickness of the edge averages 4 mm. Three holes, each 3 mm. in diameter, are shown, the intervals between them being 4.1 cm. In most of the flageolets, the holes are not perfectly round, the longer axis being always on the median line; but whether this was intentional, or was due to the mode of drilling, cannot be

determined. Apart from the raised figure, this flageolet is devoid of ornamentation.

Returning to the northeastern corner of the room where the first flageolets were unearthed, there is a series of ceremonial sticks to be considered. These were found between the post and the northern wall; none of them projected above the surface. These specimens having been protected to a great extent from the action of water, the upper halves of most of them are in a state of perfect preservation. There were eight of the long ceremonial sticks in this deposit, and two of the small curved sticks which were evidently used with them.

Types of Ceremonial Sticks

Type No. 1 has two knobs carved on the handle. The specimens are of various forms and sizes; but all of this type are characterized by the plain proximal knob. A subdivision of this type has a hole drilled through the proximal knob; while the second knob, or collar, is grooved.

Type No. 2 has the handle-end carved in the shape of a bear's claw. All specimens of this type have an enlargement at the base of the claw. A subdivision of this type shows no enlargement at the base of the claw.

Type No. 3 has a spatula-shaped end, and the stick itself is hemispherical in cross-section.

Type No. 4 has a wedge-shaped end, the stick itself being round. A subdivision of this type shows the handle with a binding of sinew and a second one with a binding of cord.

There were also three sticks having flattened ends, and a variant of this type, which is No. 4 of the types given above. The largest specimen of type 1 has a head 4 cm. high and 4.5 cm. broad; the other two are very much smaller. One specimen, of peculiar form, in this group, has a barrel-shaped piece carved on the end, through which a cylindrical hole was drilled laterally. At each end is a ridge, giving the object the

appearance of a spool. It is 2.3 cm. long and 1.5 cm. in diameter. All of these specimens have a groove in the collar-like piece, which in three of them is quite deep.

This deposit contained two specimens of type 3, the ones having the thin blades, which, in these specimens, average 3 cm. in width. There is one specimen of the fourth type, having the

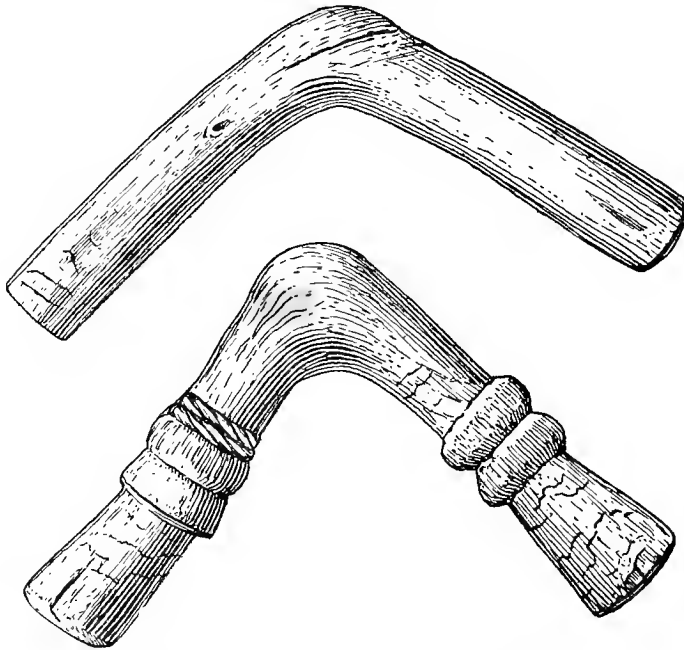
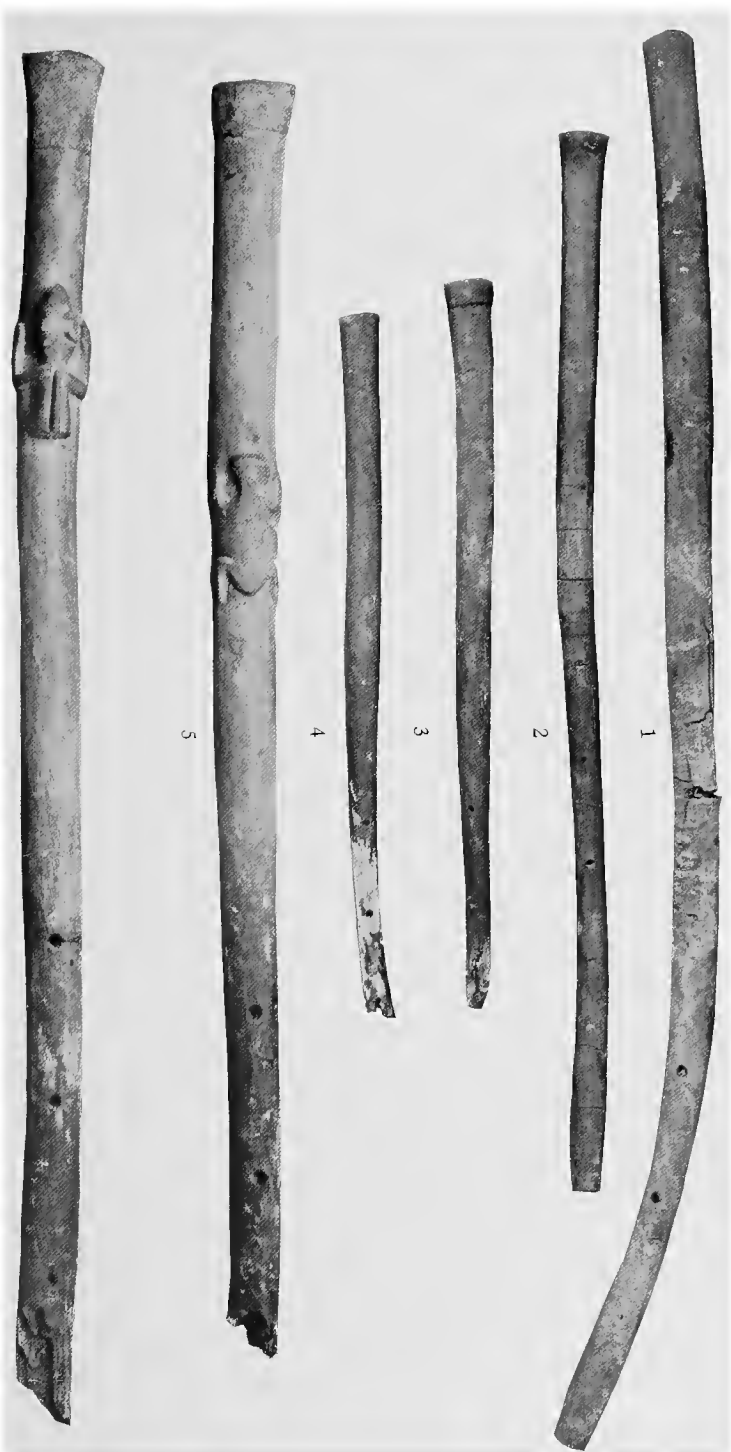


FIG. 1—Types of angular ceremonial sticks.

end flattened: as in the case of some sticks found in room 32, a portion directly under the end of the blade is worn away to some extent, as though from use. The eighth specimen is only a fragment; but the taper at what would be the carved end in the other specimens is very pronounced.

The two small ceremonial sticks, which were evidently meant to be thrown, are shown in figure 1; one of these



1. Found in the northeastern corner of the room (II-4560). 2, 3, 4. Found in the southeastern corner (II 4559, II-4557, II-4558)
- 5, 6. Carved flagpoles (II 4561, II-4562) found with Nos. 2, 3, 4

FLAGPOLES FROM BURIAL ROOM

is plain, the other has carved arms. The carvings are in the form of collars, similar to those of the ceremonial sticks belonging to the subdivision of the first type. Directly above one of these collars are remains of two bands of heavy yucca cord. The specimen having carved arms measures 9.5 cm. from end to end, the arms being 7 cm. in length.

In the southeastern corner, where the five flutes were found, were discovered eleven ceremonial sticks. One of these, of a very unusual form, was standing with the carved end protruding above the surface. This stick is a variant or subtype of type 2, which has the end carved like a claw. It would seem that a natural branch of the end of the stick had been utilized; at all events this end of the stick is smaller, rounded, and bent into a circle, with the end brought back to the starting-point. As with most of the sticks in this deposit, the opposite end is broken; and its original length, therefore, cannot be ascertained. It is the only specimen of the form found in this group.

Of type 1, having the flattened knobs on the ends and the plain collars below, there were two specimens, one of which had a two-strand yucca cord tied just above the collar. The subdivision of this type having the ends drilled and the collar grooved is represented by three specimens and one freak, the end of the latter not having been drilled, although, as in the other specimens, the collar is deeply grooved. One of these has a very large end, through which a semicircular hole is drilled. This knob is 5 cm. long, 4.3 cm. broad, and 2.1 cm. thick: it is ground to a well-defined edge, and in its original condition the surface was no doubt polished to some degree.

Among the specimens found in this deposit are the distal ends of two specimens of type 3; that is, those having the thin flattened ends. Most of the specimens in room 32 having been standing with this end downward, water had affected them, causing this portion to decay. It was therefore interesting to find a specimen that showed the finish and the taper of the opposite end of a stick of this type. There is a small fragment of a ceremonial stick of type 4 and a specimen representing a subdivision of this type; namely, that having the end covered with bands of knotted cord, which is similar to sticks found in room 32. Fortunately, this stick is complete. Its length is 1 m. 22 cm. The surface is rounded, but the knots still project from it.

In the northwestern corner were found three fragments of ceremonial sticks, from one of which the end is missing: this has a round handle, similar to the handles in types 2 and 4. The second is of type 2 form, but has the end merging into the handle, this feature placing it in the subdivision of this type. The third stick is round, except at the end, where it is flattened on both sides: from the polish on both surfaces, it had been used apparently as a digging-stick. Standing between the post and the northern wall, in this corner, was a large pole nearly $1\frac{1}{2}$ m. in height, and more than 5 cm. in diameter. The ends are squared, but the surface does not seem to have been worked. Its purpose, and the reason for placing it in the room with the ceremonial sticks, could not be determined.

In the southwestern corner were brought to light one stick of type 1 and a fragment of the end of a second stick.

While considering the ceremonial sticks, it may be well to complete the description of the various objects of this nature found in the room. It is deemed advisable to follow this procedure even at the risk of anticipating the work, as none of these objects properly could be associated with any of the room burials.

One specimen of type 4 (H-4514) was found near the northern wall, lying parallel thereto; the upper surface being five feet below the ceiling-beams. This specimen has a secondary binding of sinew four centimeters from the end; also a binding near the end of the blade—a feature noted in some of the specimens of this type from room 32; but the addition of the second band is unusual. This specimen is complete. It measures 1 m. 24 cm. in length, and 1.7 cm. in width at the blade-end.

Another specimen (H-4531) is a ceremonial stick of type 4. It is the crudest of all the specimens found in this room, the bases of the twigs projecting from the surface in places. This specimen was found four feet below the ceiling-beams, lying parallel with, and almost against, the western wall.

Scattered through the débris in the room, and intermingled with the burials, were three specimens of type 1 and a fragment of another ceremonial stick, probably of this type; two specimens of type 3, having the thin blade-end; and two of type 4, both of which are devoid of binding at the blade-end (making in all thirty-nine ceremonial sticks); one large ceremonial pole; and two of the small angular ceremonial sticks made to be thrown.

In considering the contents of this room, it must be remembered that the greater part of the material had been affected from time to time by streams of water that no doubt poured

through the eastern doorway after each heavy shower. The swirling water displaced the parts of the skeletons to so great an extent, that, of the fourteen skeletons unearthed in this room, only two (Nos. 13, 14) remained in situ; in most cases the under jaw had been detached, and was found some distance from the skull. With the two skeletons just mentioned was found a mass of material that will be described as having been found in situ. The other objects from this room—with the exception of the skulls, the pottery vessels, and some of the turquoise objects—will be treated in a general way, as it was impossible to determine with which skeletons the various pieces had been buried.

The first skeleton found (No. 1) was lying on its back, the head resting on the occiput. The lower jaw was not in place. The head was lying parallel with the southern wall; but the body extended in a northeasterly direction. The distance from the ceiling-beams to the nearest part of the skull was 4 ft. 6 in., the bones of the body being from three to four inches higher.

Skull No. 2 was 3 ft. 8 in. from the ceiling-beams; it was lying on the occiput. To the left side of the head a piece of burial cloth still adhered. Only the cervical vertebræ remained in place, the remaining bones being scattered through the sand.

Skull No. 3 was 3 ft. 10 in. from the ceiling-beams, resting on its side. Part of the skull was covered with fragments of decayed cloth. Scattered about in the sand near skulls Nos. 2 and 3 were a great many turquoise beads and pendants, which will be considered later (see page 240).

A short distance northeast of skull No. 2 a corrugated bowl was found (A-H-3656; pl. III). This bowl is oval in form, and is of the type having a finely polished black interior; the outer surface in general is also black. This specimen measures 19.6 cm. in length, 12.5 cm. in width at the central part, and 7 cm. in depth; from the rim it tapers gradually toward the bottom. But few vessels of this kind and shape are found in the Chaco region.

To the northeast of the bowl just described a ceremonial object made of reeds was found (B-H-3673; fig. 2). The reeds had been put together in the form of a mat, and then rolled, thereby forming a cylindrical bundle, which was covered with a coating of cloth. This object is 9 cm. long, 4 cm. wide, and 3 cm. thick, and in shape and size it is similar to an object found in room 32. The flattening of the object evidently resulted from the pressure of the earth above it, it having been originally no doubt cylindrical in form.

The head of skeleton No. 4 was lying with the lower jaw against the eastern wall. The right occipital eminence was the highest point, and the distance from it to the ceiling was 4 ft. 6 in. Near the head was a piece of galena.



FIG. 2 — Ceremonial object made of reeds.

The next object found was a pitcher (C-H-3674), which was lying on its side.

Southwest of pitcher C was another pitcher (D-H-3623), of gray ware and of rather unusual form. The base, handle, and lower half of the upper part, are similar to corresponding features of the ordinary cylindrical-top pitchers. A white band separates the designs in black on the upper part, and from this band the vessel tapers to the mouth, as may be seen in plate III. It is 12 cm. in diameter at the widest part, which is just below the base of the handle, 16 cm. deep, and averages 6 cm. in diameter at the mouth.

The next object found was a shell bracelet (E-H-3632), which had decayed to so great an extent that the surface was the consistency of hard chalk.

The head of skeleton No. 5 was found 4 ft. 3 in. from the ceiling-beams. Remains of a piece of cloth were found on the face, and three strings of yucca cord were lying over the right eye-socket. The body was lying on its back, with the head turned so that it rested on the left side. Most of the bones of the body were in place, the skeleton having suffered less from the action of water than those above it. On the eastern side of the head, resting against the occiput, was a cylindrical jar (F-H-3637; pl. III). This jar is of the ordinary gray ware, all of the decorations being in black: they consist of vertical bands between the handles, which are placed in perpendicular position, and perforated. There is an open "life line" on the upper rim. The vessel is 18 cm. deep, 12 cm. in diameter at the bottom, and averages 9.5 cm. at the top, where the vessel is slightly flattened.

Directly below this specimen was a bowl of gray ware (G-H-3645). As shown in plate III, this bowl is of ordinary form, the diameter at the rim being 15 cm. and the depth 5.7 cm. The only decorations on this bowl are a band on the inner rim and an open "life line" on the edge of the rim. Bowl G rested on another bowl of gray ware (H-3675; pl. III). This bowl is 11.5 cm. in diameter and 4.8 cm. deep. The design, which is in black, covers the interior surface, and there is an open "life line" on the edge.

South of jar F, and resting against it, was a pitcher of gray ware (I-H-3676; pl. III). This pitcher averages 11.5 cm. in diameter at the lower part and 7.6 cm. at the rim. It is of the usual form, the design being in the form of a meander. The rim is slightly flaring and the handle is devoid of decoration.

An isolated jaw was found four inches from the eastern wall, four feet from the northern wall, and 4 ft. 10 in. from the ceiling-beams. Northeast of this jaw, a jar-cover was discovered (J-H-3677): this is of sandstone, of the usual flat, circular form.

A pitcher of gray ware (K-H-3619) was lying on its side when disclosed. This pitcher is of the type having a long cylindrical top. The decoration, as shown in plate III, is of the interlocking fret pattern. The handle is decorated, and the edge of the rim is ornamented with a series of dots. The specimen is 18 cm. in depth, and averages 8.5 cm. in diameter at the rim.

A gray-ware bowl (L-H-3618) which, when brought to light, was lying in a natural position, averages 12 cm. in diameter at the rim, and is 6 cm. in depth. The decoration is confined to the inner rim, as shown in plate III.

A pitcher (M-H-3678) was found lying in a slanting position, the mouth being uppermost. As shown in plate III, this pitcher is of gray ware, of the type having a finely polished surface, the general appearance being that of a very much finer grade of earthenware than is usually found in this region. The design is in two bands, and the handle and rim are decorated. The greatest diameter is 14.3 cm., the diameter of the mouth averaging 7 cm., and the depth 16.4 cm.

Just west of pitcher M, a lower jaw was found; this was situated 1 ft. 2 in. from the southern wall, 1 ft. 4 in. from the eastern wall, and four feet from the ceiling-beams. Another jaw was lying against a post in the southeastern corner, nine inches from the eastern wall, four inches from the southern wall, and five feet from the ceiling-beams.

Skull No. 6 was lying, with the face upward, at a point four feet eight inches below the ceiling-beams. The greater part of the skeleton had been scattered, but most of the cervical vertebræ were in place.

North of skull No. 6 a number of pieces of pottery were uncovered, the first a bowl (N-H-3613).

Southeast of bowl N, another bowl was found (O-H-3612; pl. III), resting in an upright position, as was the bowl just described. Bowl O is of gray ware, with black decorations on the interior surface and a band of black on the edge of the rim. The design is formed by a band on the inner rim; the bottom space contains three circles, the lines forming them being of a wavy character. This bowl is somewhat irregular in shape, averaging 16 cm. in diameter at the rim, with a depth of 6.3 cm.

West of bowl O, a gray-ware pitcher was uncovered (P-H-3614), resting on its side. Plate III shows this pitcher to be of very unusual shape; the bottom part, as well as the neck, being ovoid in form: the lower portion is contracted on both sides at the central part, — a feature giving it the appearance of a two-lobed vessel. The handle is composed of four strips of clay, in imitation of the crude handles of baskets. The handles of most pitchers of this type have their under surfaces smoothed; but this specimen shows the separate strands of clay on the under side as distinctly as on the upper. The decoration of the vessel is confined to two bands: one spanning the bowl, and the other a space directly below the rim. The handle is decorated with four wavy lines, and there is a line of black on the edge of the rim. The greatest breadth of the bowl is 19.5 cm., and its greatest width 14.5 cm. The neck at the opening is 9 cm. long and 6 cm. wide; the depth of the pitcher is 20.5 cm. A great many vessels having sides compressed through carelessness in the firing are found in this region; but from the uniform contour of this pitcher, and its general appearance, the conclusion is inevitable that it embodies the conception of its maker.

A bowl of gray ware was resting against and partially covering the mouth of the pitcher P. This bowl (Q-H-3610), as shown in plate III, has four wavy lines forming a band on the inner rim; there are a band of black on the edge of the rim and a large cross on the bottom, this being the only decoration on the exterior. The interior has a peculiar brown finish, which is unusual; whether this was caused by grease, or by some slip dissimilar to that usually used, cannot be stated. This specimen is 11 cm. in diameter at the rim and 4.7 cm. deep.

To the northeast of bowl Q, and resting against it, was a gray-ware pitcher (R-H-3615). This pitcher, as shown in plate III, has a dull brownish-gray finish. The decorations forming bands around the lower part, and below the rim, were evidently black when they were applied; but they have changed from some cause, and at the present time have a decidedly reddish hue. The handle is of the rod type, being formed of three strips of clay: the under surface has been smoothed until the division-lines have been obliterated. Each of the three strips forming the handle is marked by a line that extends from the rim to the point where it joins the vessel. The greatest diameter of this vessel is at the bowl-part, which measures 15 cm.; at the rim, the edge of which is decorated, it averages 8 cm. in diameter, the depth being 16 cm.

Northeast of pitcher R, and resting against it, was a small pitcher of gray ware (S-H-3616), which is shown in plate III. It has two bands composed of interlocking scrolls, — one about the upper part of the bowl and the other below the rim. The handle is solid and undecorated; but there is a line on the edge of the rim. The pitcher is 11 cm. in diameter at its widest part, which is the upper portion of the bowl. The cylindrical top is contracted toward the rim, where it averages only 7 cm. in diameter; the depth is 11.6 cm.

West of pitcher P, and resting against it, were the fragments of a bowl of gray ware (T-H-3631). The interior is decorated with an elaborate design; but the entire inner surface has been discolored in some way, presumably from use as a food-vessel. This specimen is 24 cm. in diameter at the rim and 11 cm. deep.

North of bowl T, and resting thereon in such a way that the pressure of the earth above had crushed it, was another gray-ware bowl (U-H-3630). The decorations on this vessel are confined to the interior surface, with the exception of an irregular black band on the bottom. The decoration of the interior surface of this bowl may be seen in plate III, likewise the open "life line" on the rim. The peculiar discoloration on the interior surfaces of these vessels is quite marked, the present specimen having a decided buff-color. The bowl averages 20 cm. in diameter, and is 7.5 cm. in depth.

South of bowl T, its mouth resting against this bowl, was a small pitcher (V-H-3611).

Another pitcher of gray ware (W-H-3620) was resting on the rim of bowl T. This pitcher, as shown in plate III, is of the tall cylindrical-top form, having decorations in black. The handle is a solid piece, decorated; and the rim is ornamented with a series of dots. The upper part of the bowl of this vessel is 11.7 cm. in diameter, the diameter at the mouth being 8.5 cm. and the depth 17.6 cm.

At a distance of 1 ft. 10 in. from the southern wall, three feet from the eastern wall, and 4 ft. 1 in. from the ceiling-beams, an object was found, which, owing to the amount of débris attached to its surface, appeared to be an ordinary cotton-wood-limb; further investigation revealed three other pieces, which show it to be a flageolet of extraordinary size. This musical instrument (pl. I, 1) was in four pieces when found. From the space between the note-openings, it would seem that a small portion is missing. In its present condition the flageolet measures 1 m. 8 cm. in length; it averages 4.2 cm. in diam-

eter, decreasing in size at the mouth-end, and increasing gradually toward the opposite end. The hole drilled through the stem averages in diameter 1.8 cm. at the mouth-end, and 2.5 cm. at the point directly below the second hole from the bell-end, and is nearly 3.5 cm. in diameter at the end just mentioned. The flageolet is made from a cottonwood-root. The mouthpiece has been destroyed by rats, but it was evidently formed like the end of the small flutes found in this room. The finger-holes, averaging 1 cm. in diameter, are carefully drilled. The only absolute interval that could be measured is that between the first and second holes from the bell-end, the distance being 10 cm. There are no decorations on the surface, nor has the surface been carefully smoothed. Small projections formed by knots are in evidence, in some places rising to a height of more than two millimeters above the general surface.

The next object uncovered was a bowl (X-H-3628; pl. III) of gray ware. The decoration is in the form of a band on the inner rim, and there is an open "life line" on the edge of the rim. The interior surface of this bowl is discolored to so great an extent that the design is almost obliterated. The specimen is 14.3 cm. in diameter and 6.2 cm. in depth.

Resting inside of bowl X was an incurved bowl (Y-H-3617). This specimen possesses unusual features. It is of gray ware, and the decoration is confined to the inner surface, with the exception of a band which spans the outer rim. A handle is attached near the rim. The rim is exceptional, as the design on the inner curved portion extends within five millimeters of the edge. The reason for this feature is hard to understand; for in looking from above the entire upper portion of the design

is concealed by the overhang of the rim, the general effect being shown in plate III. The greatest diameter of this vessel is 10.1 cm., the opening being 7 cm. in diameter, and the depth of the bowl 5 cm.

Southwest of the two bowls just described, another bowl of gray ware was found (Z-H-3629). This contained the remains of cord and of what was once evidently food. The specimen is of gray ware, decorated on the interior. Its diameter at the rim averages 14.5 cm., and its depth is 6.5 cm.

Resting inside of bowl Z was another bowl of gray ware (A1-H-3627). This vessel also contains what appears to be the remains of food. The specimen is decorated on the inner rim, as shown in plate III. It is 11.5 cm. in diameter at the rim and 6 cm. deep.

After removing the objects above described, skull No. 7 was found. It was lying with the frontal bone resting against the post in the southwestern corner of the room, at a depth of 4 ft. 7 in. from the ceiling-beams. The lower jaw was not found with this skull.

Skull No. 8 was resting in an unnatural position, the teeth being uppermost. It was 4 ft. 6 in. from the ceiling-beams. As in the case of skull No. 7, the lower jaw was not with the skull.

A lower jaw was discovered in the southwestern corner, seven inches from the southern wall and three inches from the western wall, and at a distance of 5 ft 5 in. below the ceiling-beams.

Another skull (No. 9) was resting face downward, four feet below the ceiling-beams.

The next object of pottery unearthed was a gray-ware bowl (B1-H-3624). As may be seen in plate III, there is a decoration in black on the inner rim, also a line of black on the edge of the rim. The rim-diameter is 15 cm., and the depth 5.7 cm.

Another lower jaw was found 4 ft. 4 in. from the southern wall, 1 ft. 3 in. from the western wall, and five feet from the ceiling-beams.

East of the jaw just mentioned, a fragment of a corrugated jar (C1-H-3525) was found.

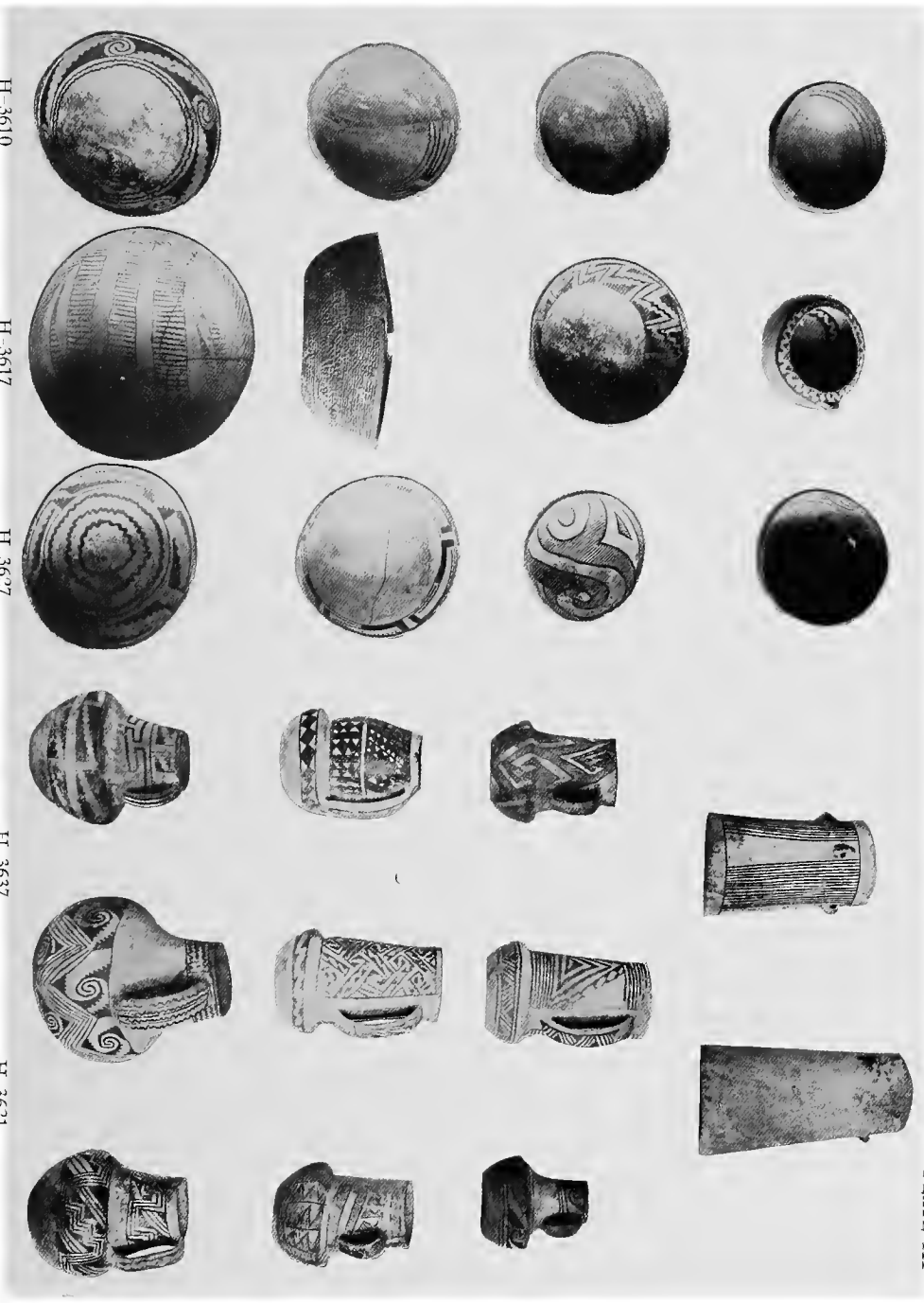
The next vessel (D1-H-3622) discovered was a pitcher of gray ware. The entire exterior surface, with the exception of a small area at the base, is decorated, as may be seen in plate III. Its greatest diameter, which is at the upper part of the bowl, is 12.1 cm.; the diameter at the rim averaging 7.5 cm., while the depth is 15.3 cm.

The next skull uncovered (No. 10) was lying on the occiput, but it evidently had been crushed, as the bones of the head were broken. Unlike most of the skulls, the jaws had held together and were in their natural positions: from them (the highest part of the skull) to the ceiling-beams, the distance was 4 ft. 11 in.

South of skull No. 10, a leg and foot were found. They were in a desiccated condition, and fragments of cloth were wrapped about them. These specimens were lying on the same level as skull No. 10, and probably belonged to the same body.

Skull No. 11 was found resting on the occipital and parietal bones, with the teeth uppermost. It was 5 ft. 1 in. from the ceiling-beams.

Skull No. 12, when discovered, was in an upright position, resting on the occiput. From the frontal bone to the ceiling-



H-3610
H-3618
H-3628
H-3635

H-3617
H-3624
H-3636
H-3630

H-3627
H-3675
H-3645
H-3612

H-3676
H-3623
H-3615

H-3637

H-3620
H-3619
H-3614

H-3621

H-3616
H-3622
H-3678

MORTUARY POTTERY

beams was a distance of 4 ft. 10 in. The body extended toward the west, and many of the bones were in place. The lower jaw, however, was not with the cranium.

A cylindrical jar of gray ware (E1-H-3621) was found near the eastern wall. This jar, as shown in plate III, is of the undecorated variety, with three handles placed in a horizontal position, and equidistant. The specimen is 12.5 cm. in diameter at the base, and tapers toward the rim, the diameter at that point averaging 8.8 cm.; its depth is 23.8 cm.

The next objects found were two sandstone jar-covers. These were in the northwestern corner, one foot from the northern wall, and resting against the eastern wall; they lay 5 ft. 2 in. below the ceiling-beams. Associated with them were shell and turquoise beads, which seemingly had been grouped around the posts in the corner.

On the removal of the above-mentioned specimens and the débris about them, a floor appeared. This was made of boards which averaged a foot in width and from three-quarters of an inch to an inch in thickness. These boards were laid side by side, in an east and west direction; and the floor thus formed no doubt presented a flat surface when it was new. When found, the boards were somewhat decayed, and were warped, from the effect of the water, to so great an extent that the surface was very uneven. The boards curved upward from the center, owing to the decaying of the bodies in the sand below them and to the pressure of the material above. From the appearance of the boards, it was evident that they had been made for the purpose indicated. In the eastern end of one of them, a hole about four

inches in diameter had been cut, for what reason, it is impossible to say.

Under the floor, at a distance of 5 ft. 5 in. below the ceiling-beams, skull No. 13 was found resting on its right side. The body extended toward the southwest, and the bones were in place.

Scattered about the lower part of the leg-bones were 2997 disk-shaped beads of turquoise. Over and about the right ankle were 698 beads of the same form and material. Around the upper part of the left arm were grouped 1628 similar beads, and with these were a small turquoise set and a large turquoise pendant. Scattered about the skeleton were 567 beads of the kind described, and one having the edge rounded. There were also three turquoise sets made for use in inlay work. With these were nine turquoise pendants, ranging in length from 8 mm. to 4.5 cm. One of these is interesting in that it has been drilled from each side to the extent that the thin wall that remains is translucent. Besides the objects mentioned there were found a piece of turquoise matrix, three of the disk-shaped shell beads, and a small piece of shell.

Only two pottery vessels were found beneath the wooden floor, both of them being bowls.

Bowl H1-H-3635 on discovery was resting against the northern wall. This bowl is of gray ware, as shown in plate III. It averages 16.5 cm. in diameter at the rim, and is 6.5 cm. deep. It is decorated on the inner rim, and there is an open "life line" on the edge of the rim, the decoration being in black.

Another bowl (I1-H-3634) was unearthed near bowl H1. This bowl is of black ware, undecorated. It averages 11.7 cm. in diameter at the rim, and is 4.9 cm. deep.

The next skeleton found (No. 14) was in situ. The head was in an upright position, and was 7 ft. 9 in. from the ceiling-beams. The face was turned toward the southeast, and the lower jaw was in place. The upper jaw was broken, and had fallen apart. The right side of the cranium was crushed, and there were two holes and a gash in the frontal bone. The skeleton, which was intact, was extended about north and south. The arms extended along the sides of the body. The legs were spread and bent upward, the feet being close together, and resting against the southern wall.

In view of the fact that the objects found with this body were in place, they will be considered before a general résumé of the specimens found with the other bodies is given. The skeleton itself was resting on a layer of wood-ashes which had been spread on the leveled floor of yellow sand. From the general care bestowed on this body, and from the character and quantity of the objects found with it, the deceased must have been a person of rank.

Apparently, an ornament made of turquoise beads once either hung from the neck, or was fastened to the clothing at the breast, for here 1980 such beads were found. These are of the disk-shaped type, and range from very small beads to large ones having a diameter of 8 mm. With them were a turquoise pendant 2.3 cm. in length and 1.6 cm. in breadth, and eight small turquoise pendants. These ornaments were scattered through the sand in such a way that the form of the object of which they were once parts could not be determined.

Over the abdomen another mass of beads and pendants was found. In this mass were 2642 small turquoise beads similar

to those found on the breast, also 168 small turquoise pendants, and four turquoise pendants of unusual form, — two of the last-named made in crude imitation of a rabbit, a third in the form of a shoe, while the fourth is interesting, owing to the fact that it represents the object in the course of construction. With these specimens were three turquoise sets used for inlay work, and five jet inlays.

From the position of the beads found about the right wrist of the skeleton, it would seem that these once formed a wristlet. There were 616 of the disk-shaped turquoise beads, 147 small turquoise pendants, one small flat turquoise bead having the edges rounded, and one turquoise pendant having the usual perforation at one end, and another hole drilled for a distance at the opposite end. There were also four turquoise sets, one shell bead, and two small stone beads. Special mention should be made of two carved pieces of turquoise. These are approximately the same length (1.2 cm.), one representing a bird, and the other having a flat surface with incised lines. At one end of the latter specimen, which may have been meant to represent an insect, is an indication of a head. Both of these objects are drilled on the under side for suspension.

Surrounding the left wrist were 2384 disk-shaped beads, 194 pendants, and four cylindrical beads (all of turquoise), one of which is 1 cm. in length and 6 mm. in diameter, the other three being smaller. There were five pendants of unusual form, — two in the shape of birds, one in the shape of a human foot, one having a bifurcated base, and the fifth of irregular shape. There was also a pendant which had been drilled and broken, with a

second hole drilled in the opposite side. With the turquoise beads were five shell pendants of irregular form.

Over and around the ankle were 322 disk-shaped turquoise beads, ranging from large to very small, as was the case with each group of beads found with this skeleton. With the beads were five small turquoise pendants, also two cylindrical turquoise beads.

The left ankle was surrounded with a mass of disk-shaped turquoise beads, numbering 432 in all. With them were eight small turquoise pendants and two of the disk-shaped turquoise beads having the edges rounded, eight very small shell and stone beads, and a fragment of a cylindrical bead made of shell. In addition to the foregoing, a turquoise set or inlay was found in the mass; but it is quite probable that this specimen had fallen from an upper level, as it would be impossible to use such an object in connection with the turquoise beads, unless, perchance, it may have formed part of the contents of a medicine-bag which was buried with the body.

The presence of so many ornaments made of turquoise would seem in itself sufficient evidence for concluding that this person had been of high rank. It is to be regretted that the cords, or perhaps sinew, on which the turquoise pieces were strung, had decayed, thereby removing all traces of the form and character of the ornaments attached respectively to neck, breast, waist, wrists, and ankles.

The ornaments already mentioned contribute interesting material for study of the decoration used by the old people; but a cache of objects discovered just west of skeleton No. 14 revealed

a number of ornaments of new forms, and furnished a mass of shell and turquoise beads.

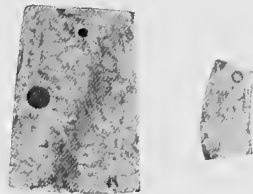
Four inches from the right knee, on the western side of the body, a shell trumpet (K1-H-3653) was found. This trumpet (plate IV) is made from the shell of a *Strombus galeatos* Swainson. The lip of the shell is cut away in the manner noted in the case of a shell from room 13 of this pueblo. Two holes are drilled near the edge of the lip, at the central part, probably for the attachment of a carrying-cord; and a third hole is drilled near one of these. A little farther from the edge is a fourth hole more than two centimeters from the hole nearest the mouth-piece. The shell evidently cracked while in use; for, on each side of a break near the whorl-end, holes are drilled, evidently for the purpose of mending or strengthening the shell at that part. The mouthpiece of the trumpet is ground, to some extent; but there is no evidence of the specimen having had a mouthpiece of clay, and none was found with it, although two trumpet mouthpieces were found in the débris in the room. This trumpet was, when found, 7 ft. 4 in. from the ceiling-beams. It rested in a haliotis shell (L1-H-3651). This shell shows no signs of having been worked. It rested on a shell of the same kind (M1-H-3650). North of these shells, and lying against M1, was a third haliotis (O1-H-3654). Lying on edge in shell O1, were twenty-six perfect shell bracelets and fifteen fragments. These bracelets, averaging 8.5 cm. in diameter, are probably made from pectunculus shells. Another haliotis shell (Q1-H-3652) was found a little above, and slightly to the east, of the deposit of shells just mentioned. Under this shell was brought to light a peculiar deposit of turquoise sets. At first, in clearing away



Shell trumpet found with skeleton 14



1



2



3

1. Cylindrical basket covered with mosaic of turquoise. 2. Turquoise pendant and set, showing inlays of the same material. 3. Turquoise frogs and tadpoles

OBJECTS FROM BURIAL ROOM, PUEBLO BONITO

the surrounding sand, the small turquoise pieces seemed to be in place: subsequently, as the sand was brushed from about them, many fell from their original position. It required several hours to determine the shape of the object covered by these turquoise pieces; but, owing to the fact that fragments of the material on which the turquoise had been fastened still remained, it was possible to ascertain that the object had been a cylindrical basket, three inches in diameter and six inches in length. The basket-work had decayed; but the fragments showed conclusively that it had been made of very slender splints over which a layer of some material, probably piñon-gum, had been placed, this being the medium that held the turquoise pieces in position. A restoration of this specimen is shown in plate IV, 1, the individual pieces being represented as adjusted in the manner noted by the writer in uncovering the specimen. The cylinder was practically filled with sand, and was also covered by the same material, which had drifted over it. Thus, though the basket-work had decayed, the several inlays were held in place by an equalization of pressure. This condition made it possible to determine, not only the general form of the object, but also the irregular arrangement of the various pieces of turquoise. In his legends concerning the Navaho Indians, Dr Washington Matthews shows that several references to "turquoise jewel-baskets" are made by them. But whether their traditional knowledge of the subject is of mythical origin, or whether their ancestors saw such baskets in use by the Pueblo Indians in the early days, cannot now be stated with certainty; but the Navaho legend is none the less interesting on this account.

There were 1214 pieces of turquoise forming the mosaic which covered the cylinder, and so closely were these placed, that hardly an opening was left in the whole surface. Partially filling the cylinder, and lying directly below its mouth, was a mass of turquoise and shell beads and pendants. In this deposit there were 2150 disk-shaped turquoise beads. With these were 152 small turquoise pendants, of various forms, and twenty-two large pendants of the same material, the largest of which measured 3.6 cm. in length, 2.7 cm. in width, and 3 mm. in thickness. One of these (H-3769) is of irregular form, having the edges on all sides notched. Another (H-9250) is carved so as to give the appearance of a bird with a crest. A third pendant is crescent-shaped; this was made from a fragment of a disk-shaped bead. Still another (H-3852) is in the form of a bird, the head and bill being outlined by a deep incision; there is also an incised line about the neck.

Associated with the turquoise beads and pendants were 3317 shell beads and small pendants. Among these were a few beads made from olivella shells, but most of them were disk-shaped. There were also seventy shell beads of cylindrical form, and eight specimens of the same kind having holes drilled in the sides, in which turquoise sets no doubt had been inlaid. Still other objects unearthed were sixty-eight large shell pendants of irregular shape, most of them of the flat form; nineteen of these have holes drilled in the sides for the reception of turquoise inlays. This fact might be deemed purely conjectural, were it not that a pendant of similar form still retains one of the turquoise sets in place. Two of the shell pendants found in this deposit are in the shape of moccasins; these are drilled for suspension.

Three cylindrical beads of shell, averaging three centimeters in length and eight millimeters in diameter, were found. These beads are similar to specimens discovered in the same room, each provided with a bird-bone passing through the central opening (fig. 3).



FIG. 3 — Shell bead with bird-bone inserted.

The deposit contained also four shell pendants representing bird-forms: one of these specimens still retains a piece of turquoise inlaid in the side. A fifth specimen is of the ordinary form of pendants drilled for the reception of an inlay, and still retains a piece of turquoise in a groove cut just below the drilled portion.

In the center of the mass of shell and turquoise ornaments, below the turquoise mosaic cylinder, an object having an animal form was found. This figure (R1-H-3657) is made of a soft but very compact stone. The greater part is of a light pink color; but there is an area of chalky white on the under side, extending through to the tail. This latter part is so much disintegrated that the material rubs off at the slightest touch. The object in its entirety is 8.7 cm. in length, and 3.3 cm. in width at the widest part, that is, across the shoulders. It is 1.6 cm. in thickness at the shoulder, tapering from this point to the nose, also to the wedge-shaped tail. The general form of the object is shown in figure 4. The body is marked off

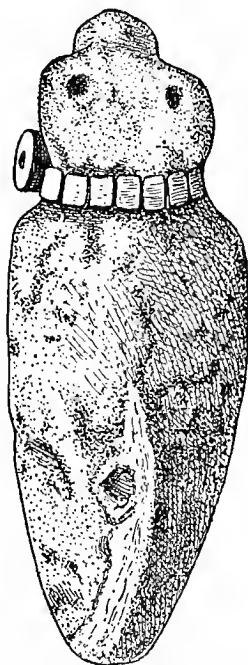


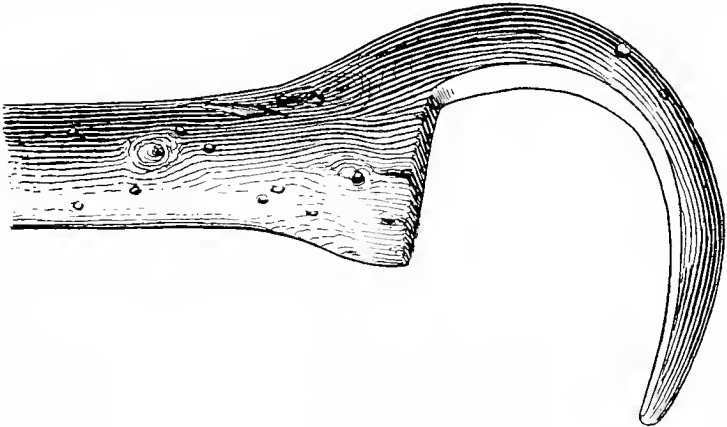
FIG. 4 — Incrustated stone ornament found with skeleton 14.

from the head by a deep groove on each side. The head is carefully carved. One feature is a shovel-like projection, evidently made to represent a flat nose. There are pits forming eyes, which evidently were once inlaid with pieces of turquoise. A band of the same material passes across the neck. This object was obviously made to be used as a pendant. To prevent the cord from wearing away the very soft material, the makers inserted a bird-bone in a hole drilled just above the neck; the opening on each side was countersunk, and the space was filled with gum. Over each end a large turquoise bead was placed, one being in position when the object was found. These completely covered the ends of the bone, which otherwise would have detracted from the finish of the figure. Whether this object was made to represent a real or a mythical animal is not determined.

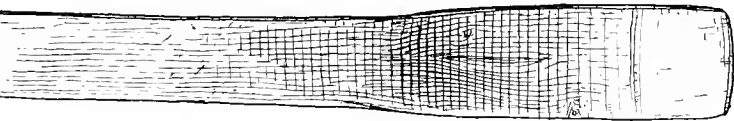
Near skeleton No. 14, but not associated with the deposit just described, were the remains of another object made of turquoise and shell mosaic inserted on basket-work (H-12758). Owing to the fact that the basket-work had been woven over a wooden body, or at least over a form of fibrous material (as a piece of cactus-stalk), several fragments of the object still retained their form, and could be removed. From the contour of the largest fragment, the object must have been about four centimeters in diameter and more than six centimeters in length, although the length of the portion found is but three centimeters. Unlike the mosaic cylinder above described, this specimen is made of turquoise beads and ovoidal thin pieces of shell. The beads were strung on a cord and placed on edge against the body of the cylinder, in parallel rows separated by two rows of the thin shell pieces which overlapped like shingles. The number of



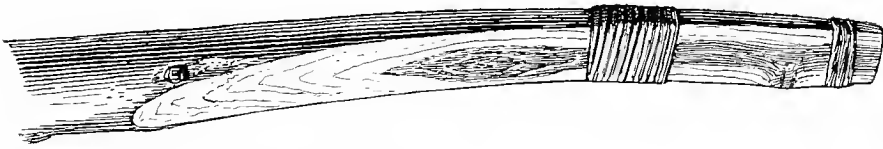
Type 1



Type 2



Type 3



Type 4

TYPES OF CEREMONIAL STICKS

beads in each transverse row was from six to seven, according to the thickness of the pieces. There are the remains of three of these rows of beads, and of three of the alternating rows of shell which occupy more than half the diameter of the object. With this specimen were a number of beads very much larger than the ones which remained in place, the former averaging six millimeters in diameter, while the latter are under four millimeters. Sections of the larger beads were found, showing that they had been strung in the same manner as the smaller ones. How they were applied is, of course, conjectural: possibly they formed a row at each end of the specimen. There were discovered more than five hundred loose beads that had formed a part of this interesting object, which was used no doubt ceremonially.

With skeleton No. 14 were unearthed a long inlay of red stone, several fragments of shell ornaments, pieces of turquoise matrix, and small turquoise sets, which were used no doubt in ornamenting the shell pendants.

Nine inches east of the skull, in a standing position on the same level, was one valve of a bivalve shell (P1-H-3649). Nothing was found with it.

Measurements Indicating the Positions of the Skulls

- | | | |
|-----|----|--|
| No. | 1. | 1 ft. 8 in. from W. wall and 8 in. from E. wall. |
| | 2. | 3 ft. 3 in. from N. wall and 2 ft. 7 in. from E. wall. |
| | 3. | 2 ft. 7 in. from N. wall and 3 ft. from E. wall. |
| | 4. | Against E. wall and 2 ft. 2 in. from N. wall. |
| | 5. | 4 ft. from N. wall and 1 ft. 3 in. from E. wall. |
| | 6. | Against S. wall and 1 ft. 8 in. from E. wall. |
| | 7. | 7 in. from S. wall and 4 ft. 11 in. from E. wall. |
| | 8. | 1 ft. 9 in. from S. wall and 4 ft. 5 in. from E. wall. |

9. 2 ft. 7 in. from S. wall and 1 ft. 6 in. from W. wall.
10. Against W. wall and 4 ft. 7 in. from S. wall.
11. 11 in. from N. wall and 2 ft. from W. wall.
12. 1 ft. 4 in. from N. wall and 1 ft. from E. wall.
13. 2 ft. 6 in. from S. wall and 1 ft. 4 in. from E. wall.
14. 1 ft. 5 in. from N. wall and 2 ft. 5 in. from W. wall.

The lower jaw of skull No. 1 was 2 in. below it.

The lower jaw of skull No. 2 was 1 in. E. of it.

The following measurements indicate the respective positions of the specimens described, including the distance of each from the ceiling-beams.

- A. Corrugated bowl, (H-3656) 2 ft. 7 in. from N. wall, 1 ft. 5 in. from E. wall, and 4 ft. below ceiling-beams.
- B. Ceremonial object (H-3673), 2 ft. 5 in. from N. wall, 11 in. from E. wall, and 4 ft. 2 in. from ceiling-beams.
- C. Pitcher (H-3674), 2 ft. 8 in. from N. wall, 6 in. from E. wall, and 5 ft. below ceiling-beams.
- D. Pitcher (H-3623), 2 ft. 10 in. from N. wall, 1 ft. 4 in. from E. wall, and 4 ft. 9 in. from ceiling-beams.
- E. Shell bracelet (H-3632), against E. wall, 3 ft. 4 in. from N. wall, and 5 ft. below ceiling-beams.
- F. Cylindrical jar (H-3637), 3 ft. 9 in. from N. wall, 9 in. from E. wall, and 4 ft. 3 in. from ceiling-beams.
- G. Bowl (H-3645), same position as F.
- H. Bowl (H-3675), same position as F.
- I. Pitcher (H-3676), same position as F.
- J. Jar-cover (H-3677), 2 ft. from E. wall, 3 ft. 10 in. from W. wall, and 4 ft. 10 in. from ceiling-beams.
- K. Pitcher (H-3619), 1 ft. 5 in. from E. wall, 3 ft. 6 in. from N. wall, and 5 ft. from ceiling-beams.
- L. Bowl (H-3618), 3 ft. 1 in. from N. wall, 1 ft. 9 in. from E. wall, and 5 ft. 1 in. from ceiling-beams.

BURIAL-ROOM IN PUEBLO BONITO 233

- M. Pitcher (H-3678), 1 ft. from S. wall, 1 ft. 4 in. from E. wall, and 4 ft. 1 in. from ceiling-beams.
- N. Bowl (H-3613), 2 ft. from S. wall, 1 ft. 10 in. from E. wall, and 5 ft. below ceiling-beams.
- O. Bowl (H-3612), 1 ft. 9 in. from E. wall and 5 ft. 2 in. from ceiling-beams.
- P. Pitcher (H-3614), 2 ft. 4 in. from E. wall, 1 ft. from S. wall, and 5 ft. below ceiling-beams.
- Q. Bowl (H-3610), 1 ft. 7 in. from S. wall, 2 ft. 8 in. from E. wall, and 4 ft. 10 in. from ceiling-beams.
- R. Pitcher (H-3615), 1 ft. 8 in. from S. wall, 2 ft. 6 in. from E. wall, and 4 ft. 11 in. from ceiling-beams.
- S. Pitcher (H-3616), 2 ft. 2 in. from S. wall, 2 ft. 5 in. from E. wall, and 5 ft. 2 in. from ceiling-beams.
- T. Bowl (H-3631), 11 in. from S. wall, 3 ft. from E. wall, and 5 ft. 2 in. from ceiling-beams.
- U. Bowl (H-3630), 1 ft. 4 in. from S. wall, 2 ft. 11 in. from E. wall, and 5 ft. 2 in. from ceiling-beams.
- V. Pitcher (H-3611), 7 in. from S. wall, 3 ft. 2 in. from E. wall, and 5 ft. 1 in. from ceiling-beams.
- W. Pitcher (H-3620), 11 in. from S. wall, 3 ft. 4 in. from E. wall, and 5 ft. 4 in. from ceiling-beams.
- X. Bowl (H-3628), 1 ft. 6 in. from S. wall, 3 ft. 10 in. from E. wall, and 5 ft. 3 in. below ceiling-beams.
- Y. Bowl (H-3617), found in bowl X.
- Z. Bowl (H-3629), 1 ft. 2 in. from S. wall, 4 ft. 4 in. from E. wall, and 5 ft. 4 in. from ceiling-beams.
- A-1. Bowl (H-3627), found in bowl Z.
- B-1. Bowl (H-3624), 3 ft. 2 in. from S. wall, 2 ft. 4 in. from E. wall, and 5 ft. 3 in. below ceiling-beams.
- C-1. Jar fragment (H-3625), 4 ft. 5 in. from S. wall, 1 ft. 11 in. from W. wall, and 5 ft. 1 in. below ceiling-beams.

- D-1. Pitcher (H-3622), 3 ft. 7 in. from S. wall, 7 in. from W. wall, and 5 ft. below ceiling-beams.
- E-1. Jar (H-3621), against N. wall, 1 ft. from E. wall, and 4 ft. 2 in. from ceiling-beams.
- H-1. Bowl (H-3635), against N. wall, 2 ft. from E. wall, and 5 ft. 10 in. from ceiling-beams.
- I-1. Bowl (H-3634), 1 in. Southwest of bowl H-1, 2 ft. 3 in. from E. wall, and 6 ft. 2 in. from ceiling-beams.
- K-1. Shell trumpet (H-3653), with skeleton No. 14, 7 ft. 4 in. from ceiling-beams.
- L-1. *Haliotis* shell (H-3651), with K-1.
- M-1. *Haliotis* shell (H-3650), with K-1.
- O-1. *Haliotis* shell (H-3654), with K-1.
- P-1. Shell bracelets (H-3649), with K-1.
- Q-1. *Haliotis* shell (H-3652), with K-1.
- R. Animal figure (H-3657), with K-1.

In the northeastern corner of the room, grouped about the post at various depths, were 983 turquoise objects, as follows: disk-shaped beads, 926; one bead of the same type, with rounded edges; three cylindrical beads; and forty-seven small and six large pendants. The most interesting of the larger pendants (H-10417) is shown in plate IV, 2. This was found near the post in this corner. The specimen has a turquoise front and a back of trachyte. It is 3.8 cm. long, 2.3 cm. wide at the top, 2.7 cm. wide at the bottom, and has a thickness of three millimeters. It is drilled at the narrow end for suspension. In the left side, another hole (four millimeters in diameter) is drilled, the side of which is beveled. In this hole a piece of turquoise, fashioned with edges angulated perfectly, is adjusted with all the skill of a modern lapidary. The hole is drilled through both layers; but the turquoise inlay extends only to the trachyte

stratum. Other pieces of turquoise and shell treated in the same manner will be described, but none of them approaches in workmanship the specimen under consideration.

Four pendants are matched ear-drops. Both of these pairs of pendants have turquoise matrices, while the larger pair has a backing of trachyte. The smaller pair averages 2.8 cm. in length, and 2 cm. in width at the widest part; the larger, 3.3 cm. in length, and 2.2 cm. in width at the lower part. Besides the pieces mentioned, there were found in the northeastern corner twenty-six pieces of turquoise, many of which had been worked, twenty-seven turquoise sets, six sets made of stone and jet, and a small shell bead, also two fragmentary reed arrows provided with wooden foreshafts.

Around the post in the northwestern corner were discovered turquoise objects as follows: fifty-one disk-shaped beads, four large pendants and a small one, five worked pieces, also a piece of malachite, and a disk made of haliotis shell. This disk (H-3680), which is concavo-convex, is five centimeters in diameter. The inner edge is decorated with a series of incised lines. A fragment of a reed arrow-shaft was also found in this corner.

In the southeastern corner the following turquoise objects were brought to light: 586 of the disk-shaped beads, fifty-one pendants of small or of medium size, six large pendants, seven turquoise sets, and sixty-five pieces of worked material and matrix, also a jet inlay and a thin shell pendant made of haliotis shell. To the foregoing should be added three turquoise beads, the diameter of which averages 1.5 mm. The holes through these beads are so small that they cannot be strung on an ordinary pin.

In the southwestern corner of the room, forty-two pieces of malachite were found, fragments of shell bracelets, and a bracelet made of bone (H-9270), but no turquoise ornaments. The bone bracelet is 5.6 cm. broad on the longer axis. The bone is 1.6 cm. in width, and has an average thickness of a millimeter. At each end is a drilled hole, through which a cord was probably passed to fasten the bracelet to the wrist. Bracelets of this kind have been found in a fragmentary condition in other parts of the ruin, but, judging from their scarcity, it would seem that they were not in general use.

In referring to the objects found when this room was entered, mention was made of a burial-mat, the ends of which protruded from the sand in the southwestern corner (see page 197). When removed, this mat proved to be made of thin osiers fastened together at three points by means of a two-strand yucca cord which passed through holes provided for the purpose. Why the burial-mat was placed in this position, instead of being wrapped about one of the bodies, is conjectural, but it had no doubt ceremonial significance.

Among the interesting objects found in the general débris surrounding the skeletons in this room were two tadpoles, five frogs, and seven buttons; all of these objects being made of turquoise. The tadpoles (plate IV, 3) are 2.5 cm. in length, and the larger is eight millimeters in width at the head, which is flat and pointed. The eyes are represented by protuberances which project more than a millimeter from the general surface. These large eyes are typical of the frog family as represented by the old Pueblo people. Directly back of the head is a constriction forming the neck; and back still farther on the body,

in both specimens, is a kind of lump, or shoulder. From this point the body tapers gently to the tail. Both specimens are drilled on the under part for suspension, the drilling following the longer axis of the body.

Four of the frog-forms in turquoise above mentioned are shown in plate IV. Two of these have the eyes in their natural position, and in each there is an incised line marking off the head from the body. In these two specimens, the eyes and the lines forming the neck are the only physical characteristics retained. In room 38 was found a frog made of jet, having turquoise eyes, a band of turquoise across the neck, and legs carved in relief. This specimen is the highest type of frog discovered in Pueblo Bonito; that is, the most realistic representation. It is flattened and of the same general form as the two turquoise specimens now under consideration. In the turquoise frog it will be noticed that the body is rounded and that the head is smaller than the opposite end. The other two frogs shown in the same plate have the eyes carved in relief, but no care was taken to place them in their natural position; nor have the bodies the taper noticeable in the other two specimens. The largest of these four frogs measures 1.3 cm. in length, 9 mm. in width, and 4 mm. in thickness; while the length of the smallest is 8 mm., the width 5 mm., and the thickness 3 mm. In the seven pieces of turquoise of similar form, represented in plate IV, 3, none show the physical features of the frog. In shape and general technique they are exactly similar to the other specimens, and to the Indian mind they typified the frog, no doubt, in as great a degree as did the more elaborate ones. Each specimen of this form is drilled laterally through the central part of the body for suspension.

The specimen from room 38, representing the highest type of frog, and the specimens from room 33, constitute an interesting series. The jet frog shows most of the physical features in relief; the next graduation shows the eyes and the neck division only; in the next stage the eyes remain, but not in their natural position; while in the fourth and last stage is represented a mere utilitarian form that would not be suggestive of the frog, were it not for the fact that the other specimens are in evidence.

Another specimen, made entirely of turquoise, found associated with the skeletons in the room, is a pear-shaped object made by combining three pieces (H-10425). This is 2.8 cm. in length, 1.8 cm. in width at the widest part, and 6 mm. in thickness. The stem part is rounded, but the lower part of the body is perfectly flat. There are evidences that it once was covered with a mosaic. The turquoise used is of the matrix variety, and, from the general color, it is reasonably certain that all three sections were cut from one piece. The only plausible explanation why the ancient workers should have taken great trouble to square the edges of the sections in forming an object of this kind is, that the shape of the original piece would not admit of cutting out an object of the size desired. The labor spent on this specimen must have required a great many days, for each face at the joints is perfectly smooth and polished; and so carefully has the work been done, that, at a distance of a few feet, the lines where the pieces join can hardly be seen. Without doubt the present object is one of the most perfect specimens ever found in the Pueblo area, demonstrating conclusively the skill of the old lapidaries.

A cylinder of hematite inlaid with turquoise (H-10420) is shown in fig.5. When entire, evidently this object represented a



bird. The wings are indicated by pyram-

FIG. 5 — Hematite cylinder ornamented with turquoise.

idal pieces of turquoise so let into the surface of the hematite that their edges are practically flush therewith. Both pieces are rounded to conform with the contour of the cylinder. There was evidently a mosaic band at each end of the cylinder, and vestiges of the gum that held these bands in place are still visible. One end of the hematite portion is rounded, and is evidently complete. The opposite end is drilled, and, from its appearance, it seems quite probable that there was once another piece attached thereto. When the material from this room was being studied, a drilled piece of dark red stone (that had been considered a bead) was fitted to the hematite cylinder, and proved to be the missing part. Having this connecting piece, it was an easy matter to find the remaining portion, which was a pointed piece of turquoise bearing a bird-figure carved in relief. Originally the object must have been one of great beauty: even in its present state, it proves the skill of the old Pueblo makers as workers of stone. In its entirety this specimen measures 5.4 cm. in length, and 8 mm. in diameter at the widest part.

A portion of a mosaic object was taken from the débris. The work was done on a haliotis shell, and, although the specimen is merely a fragment, it shows the manner of using the large turquoise sets, a great many of which were found in this room. The design is formed by combining turquoise, jet, and

shell, the pieces being attached to the shell by means of gum. The general technique of this object is similar to that shown in connection with the mosaic band on a scraper found in room 38 of this ruin.¹ In describing the shell trumpet unearthed in this room (see page 226), mention was made of a mouthpiece (H-

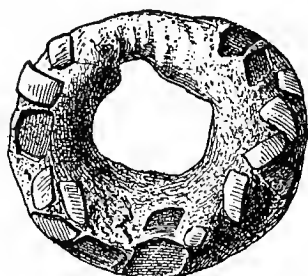


FIG. 6 — Mouthpiece for shell trumpet, incrustated with turquoise.

12787; fig. 6) found with the skeletons. It is made of some composition, chiefly gum. The mouthpiece is irregular in shape, the longer axis being 2.5 cm. in length. The opening is rounded and the sides are covered with crude turquoise mosaic. The under part shows the contour of the shell to which it was attached. A specimen similar, but somewhat larger,

was found in room 48.

In considering the general objects of turquoise taken from this room, the pendants first will receive attention. There were 503 perfect specimens and nine broken ones found with the bodies, excluding the specimens already described as having been found with skeletons Nos. 13 and 14, or in the corners of the room. These 503 objects comprise 71 large pendants and 432 small ones. A series of the large pendants is shown in plate VI. In the first group are represented four matched pairs and one single pendant. The pair in the upper row are more nearly free from the trachyte matrix than are any of the other specimens. They are 3.2 cm. long, 2.5 cm. wide, and average 3.5 mm. in thickness. As is the case with all the specimens shown on this plate, with exception of the pair represented in the center

¹ Ceremonial Objects and Ornaments from Pueblo Bonito, *American Anthropologist*, n.s., VII, No. 2, 1905.



LARGE TURQUOISE PENDANTS FOUND IN VARIOUS PARTS OF THE ROOM

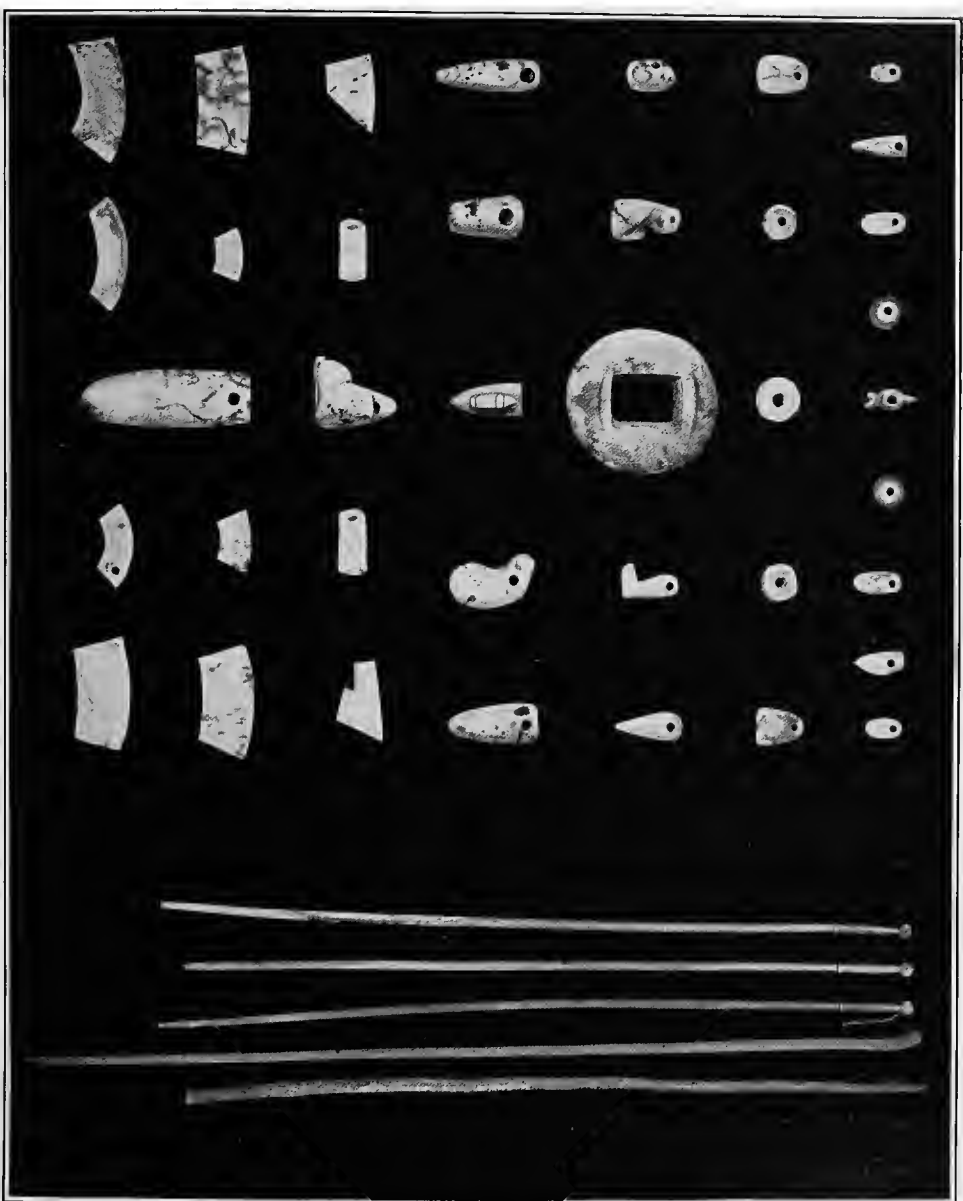
of the upper and lower rows, these pendants are drilled for suspension. The surface is heavily mottled with trachyte, and the backs of both specimens consist entirely of a layer of this material. The pair represented in the lower row on the plate is similar to the pair just described, both in appearance and in being composed equally of turquoise matrix and pure trachyte. The pair shown with the central pendant are the largest found in this room. The back of each is solid trachyte. These specimens measure 4.8 cm. in length, 3.7 cm. in width at their widest part, and 5 mm. in thickness at the center, the thickness decreasing toward the edges. The central pendant is of very light turquoise interspersed with matrix. It is entirely different in character from the other specimens on the plate, in that it is more nearly round in form, and of greater thickness for its length, than any of the other pendants. The four pendants represented in the center of the right half of plate VI were found in the northeastern corner, and are described with the other objects found in that part of the room. The pair in the upper row are free from matrix, and both sides, as well as the edges, are highly polished. The central pendant is of irregular form, and is pitted with bands and veins of trachyte. The pendants on each side of the central one in the lower row are interesting on account of their size, and also as showing the great variety of tints in the turquoise from this region. Among the other large pendants which were probably used as ear-drops are a number that are matched and evidently formed pairs. These are of various forms and sizes; but the plate already described gives a very comprehensive idea of the general form and the variety of the pendants found in the room.

In plate VII, 1, is represented a series of turquoise pendants, beads, ornaments, and inlays. The small pendants give a fair idea of some of the forms made of this material. The only specimen that needs special mention is the one illustrated in the lower part of the plate. This pendant (H-3735) is a flattened cylinder 3.2 cm. in length and 1 cm. in diameter on the average. There is a large hole drilled in the upper part, as shown in the illustration. Just above the hole, in the end, two holes are drilled, both of which meet the larger one. A bead or other object was evidently fastened to the top of this piece.

The turquoise beads discovered numbered 24,932; of these eight were of cylindrical form with the edges rounded, and sixteen were of the figure-eight form, the remainder being of the disk-shaped type, three of which are shown in the second row of plate VII, 1. Just above these are shown two of the same form with the edges rounded.

With the groups of beads, a great many pieces of turquoise that had been worked, and small pieces of matrix, were discovered, numbering in all 1052 pieces; also 451 turquoise sets or inlays, probably used in mosaic work. A series of these is shown in the lower part of plate VII, 1. Some of them are very small, while others measure 2.3 cm. in length. The set in the right-hand corner is mended with a piece of turquoise in the same manner as the pendant found in the northeastern corner of the room (pl. IV, 2). In this instance, a pendant was used, no doubt, to form the inlay, the hole drilled for the suspension of the object being filled with a turquoise set.

In plate VII, 1, three ornaments of turquoise are shown; the one at the top (in the center) representing a bird, while the one



1

2

1. Examples of turquoise beads, pendants, and inlays found with the skeletons. 2. Ceremonial sticks found between ceiling beams in southwestern corner of room
OBJECTS FROM BURIAL ROOM

directly below the circular piece has a bird carved on the surface. In studying the material taken from the room since this illustration was made, it has been found that this object was a part of the hematite cylinder, and may be seen in the illustration of that object in figure 5. The circular figure above the specimen just described is a thin piece of turquoise having a rectangular hole in the center. The edges of this hole are beveled, and it is quite evident that it once contained a set. On the opposite side of the piece are the remains of gum, which would seem to show that the whole surface was once covered with mosaic. Another specimen of similar form, and about the same size, was found in the room, but it was in fragments.

Among the shell objects unearthed in removing the skeletons were 2042 beads of various forms, most of these being of the disk-shaped and figure-eight types, and specimens made of olivella shells. There are twelve beads of a long cylindrical type; these average a centimeter in diameter, and the longest one is 4.5 cm. in length. They are so drilled that only a thin wall remains. Provision was thus made for the insertion of a bird-bone, and three of the beads still retain the bone-sections. One of these is shown in figure 3. One is in a fair state of preservation, but the other one is so far disintegrated that only a fragment of the shell remains.

Other objects secured were ten disks of haliotis shell, similar to the one described as taken from the northwestern corner of the room, eight pieces of shell that had been worked, eighty-nine fragments of shell bracelets, seventeen shell pendants of various forms, two large beads made from oliva shells, and an inlaid shell (H-12783). This object was evidently once a pendant, but the

hole is filled with a shell set in the same manner as that shown in some of the turquoise pieces. A large bird-form made of shell was also found. The wings are represented as outstretched as in flight, the tail as having a notched base, while the head also is well formed. From tip to tip of the outstretched wings it measures 6.2 cm., and from the head to the end of the tail 4.7 cm. A hole is drilled through the head, another hole where the wings join the body, and the third at the bifurcation of the tail. This object seems to have been merely a form on which a mosaic figure was developed. From the curvature of some of the sets, and from the angular form of others, it would seem that the surface had not only been covered with turquoise, but that the whole figure had been outlined with a broad band of the same material. The hole at the point where the tail joins the body is filled with gum, and the whole upper surface of the shell still retains a layer of similar material.

In the débris there were 173 sets or inlays made of stone and jet, and also a few beads made of red and gray stone.

In figure 7 a fragment of a jet ring is shown. From the contour of the fragment, the ring must have been about 2.3 cm. in diameter, and the width of the band 1.4 cm. The most interesting feature of this specimen is a repaired portion. On each side, the surface was cut away, for the width of nine millimeters, to a depth of a millimeter. In the cavity a rectangular concavo-convex piece of jet is glued. This inset had fallen from its original position when the

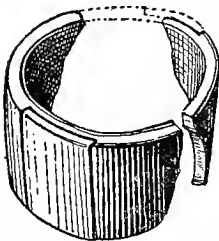


FIG. 7—Fragment of jet ring with jet inset.

specimen was found. There are evidences that a similar piece of jet had been adjusted to the opposite side of the specimen.

The only object of metal found in this room is an inlay or set made of iron pyrites. This specimen is 1.6 cm. in diameter and 2 mm. in thickness. Another specimen was discovered by an Indian who was shoveling the dirt from room 33, and it is safe to assume that he found it in that room. It is slightly smaller than the other specimen, but is of the same thickness. Objects made of iron pyrites are rare among the Pueblos of the Southwest, and there is but little evidence that the ancient inhabitants utilized this material to any considerable extent, although its use in Old Mexico in the manufacture of mirrors, beads, etc., is well known.

Among the general objects found buried with the bodies were fragments of canyon walnuts, piñon-nuts, a number of seeds, a circular piece of gourd-rind having a hole drilled through the central part, fragments of textiles that no doubt had been wrapped about the bodies, a perfectly transparent quartz crystal and another crystal chipped into the shape of a crude knife, pieces of gypsum, a piece each of limonite, azurite, mica, and of pink stone used in making inlays, pieces of yellow ocher, of gypsum, of arrow-shafts, and of chalcedony (some of the last named having been worked), six arrow-points of chalcedony and obsidian, pieces of chalcedony ground by the action of a turkey's gizzard, a few fragments of pottery, a small circular mat made of yucca cord (which may have been used as a jar-rest), a number of fragments of animal bones (some of which had been broken to obtain the marrow), and the fragment of a bone awl.

The room under consideration is very small compared with the rooms in the northern part of the building. It is situated in a section where there evidently was a great deal of reconstruction work, to which fact, no doubt, may be attributed the presence of so many small rooms grouped about room 33. The length of the northern wall of the room is 6 ft., of the southern wall 6 ft. 3 in., of the eastern wall 5 ft. 10 in., and of the western wall 6 ft. 10 in.; that is, the room is almost square. The doorway in the eastern wall is 2 ft. 3 in. from the southern wall. It is of the ordinary rectangular type, — 1 ft. 10 in. high and 2 ft. 3 in. wide, — provided with poles for a lintel. This is the only entrance to the room. The sides of the doorway are plastered, as are all of the walls. There are no decorations on the walls, nor are there evidences of the room having been made for a burial-chamber. In the southwestern corner is a post that was placed under the crossbeams, which extend north and south, as a precautionary measure. These beams enter the northern and southern walls; but, in adding new rooms above this series, the builders evidently thought it advisable to strengthen the floors with posts. The top of the post mentioned had fallen against the western wall. Its base stands about a foot from both the western and the southern wall. The largest post in the room was found under the beam in the northwestern corner. Its distance from the walls is about the same as in the case of the post in the southwestern corner. In the northeastern corner are two posts, one of which supports the ceiling-beam, standing three inches from the eastern wall and a foot from the northern wall; the other post is four inches west of the one just mentioned, about the same distance from the northern wall, and extending through

the ceiling into the room above. A post in the southeastern corner at the base is six inches from each wall, but has fallen against the eastern wall. The ceiling is composed of thirteen beams, of various sizes, over which is a layer of cedar-bark. In the southwestern corner, at a distance of 1 ft. 6 in. from the ceiling-beams, were five willow-sticks protruding from the wall, and forming a sort of rack; but nothing was found in it. The room in its entirety is in a very good state of preservation, the only defect being a slight bulge in the ceiling.

CONCLUSIONS

The use of this room for burial purposes was evidently a secondary one. It is in an old part of the building, where many of the rooms had been abandoned and others reconstructed. The surrounding rooms had been taken for burial purposes and for the storage of ceremonial material. Although skeletons were found in rooms in other parts of the pueblo, none presented conditions similar to those existing in the case under consideration.

As no burial-mounds were in evidence near Pueblo Bonito, and as there were comparatively few rock burials in the vicinity, intramural inhumation was to be expected. But when it is considered that valuable jewelry and ceremonial paraphernalia were buried with practically all of the bodies in this series of rooms, it would seem that in life the deceased must have belonged to the priesthood, and have been buried within the walls of the pueblo both as a mark of respect and as a means of protecting their graves from possible spoliation at the hands of semi-nomadic tribes. The Navaho and the Ute prize ornaments of turquoise above all other possessions; and their greed for this

material, both for personal ornament and for use as a medium of exchange, would cause them to go to almost any extreme to obtain it. From the exploration of burial-mounds near pueblos of the Chaco group, it is known that practically no turquoise was buried with the bodies, the non-perishable material being confined almost exclusively to fictile productions. This fact suggests that the pueblos of this region, probably without exception, contain the remains of those who were either members of the priesthood, caciques, or who held other positions of importance in the community. This is known to be true of Pueblo Bonito and of Peñasca Blanca; for in both these pueblos masses of turquoise ornaments have been found associated with bodies buried in the rooms, and further research in these and other ruins should result in similar discoveries.

The series of burial-chambers that includes room 33 at one time was connected with room 28, which adjoins room 32 on the south. The doorway connecting these rooms was filled with masonry which appeared to be part of the original wall. This may have been done when the pueblo was abandoned. The doorway between rooms 32 and 33 was open, as were all of the other doorways of the group. The rooms themselves show no evidence of having been prepared for burial purposes, and there are no decorations on the walls.

Owing to the havoc wrought by the inflow of water, the only preparations for burial that could be noted were those in connection with skeletons Nos. 13 and 14. In this instance the floor had been covered with a layer of yellow sand on which a layer of wood-ashes had been placed. The bodies were placed near each other, and, from the positions in which they were

found, it would seem that they had been buried at the same time. The skull of one of them was crushed, — a feature which suggests an accident in which the two persons, and perhaps others buried in this room, may have lost their lives.

The floor that separated the burials is worthy of notice. It was made of boards that had been shaped and smoothed until of uniform thickness; these were adjusted so as to cover completely the floor-space presented by the sand placed over the first burials. The boards bore no evidences of ornamentation; the only feature worthy of note was the hole cut in the eastern end of one of the boards. This may have been an opening of symbolic character, similar to the *sipapu*, the entrance to the underworld, that plays so important a part in the mythology of the Hopi. But, whatever the purpose of the opening or the import of the floor, here is evidence of the skill of the ancient people in working wood, which, with their primitive stone, bone, and shell tools, was a task requiring no little dexterity. In studying this and all other classes of work, the fact must be borne in mind, that, so far as can be learned, they had no metal implements.

Unfortunately, the twelve burials above the floor were disturbed to the extent that the positions and the character of the objects buried with the several skeletons respectively could not be determined. The fact that so many bodies were placed in so small a room, and that they had been covered with sand as they were buried, presents a phase of intramural burials somewhat uncommon. Apart from this feature, the burials furnish but meager data for study.

The materials found with the bodies were in an unusually good state of preservation, especially as the effects of surface drainage in the room were so apparent. In most cases the objects made of wood (a really remarkable series) were fortunately intact.

To students of Pueblo life, the flageolets are undoubtedly the most interesting specimens. Instruments of this nature have been found in other ruins, including cliff-dwellings, and fragments were unearthed in other parts of Pueblo Bonito; but the series taken from this room furnishes conclusive evidence of the type of flageolet used in this pueblo, and demonstrates also the style of decoration employed and the application of the decorative elements. Judging from the prevalence of Flute observances and the large Flute fraternity among the Hopi, it may be safe to assume that certain persons at least, if not all of the men buried in this room, had been members of a similar order. Students of Pueblo rites and societies assert that the Flute clan is a very old one; and as the flutes used in the Hopi ceremonials of the present time are similar to those found in room 33, it may be that the type has been handed down from the early days; nor would it be surprising to find that the Flute societies had their beginning in the Chaco region, as many of the clan migrations have been traced from this group to their present home in the province of Tusayan in Arizona.

The ceremonial sticks also point to a Flute clan origin. Similar sticks are used to-day by members of the Hopi Flute societies in certain of their ceremonies; but the details of this similarity must be deferred to another time, when the great

mass of ceremonial sticks found in the adjoining room is described.

Pottery vessels were buried with the dead in all parts of the Pueblo area, but none of the tribes were given to the practice of making special mortuary vessels. Sacrificial pottery was made in some pueblos to a greater or less extent, but this generally took the form of mere models, oftentimes unbaked. These are found especially in and about springs. Many pieces of this kind were discovered in the rooms of Pueblo Bonito, but under such conditions that it is hard to determine whether they were made for ceremonial purposes or for use as toys: none were found in room 33. The vessels buried with the bodies are of the common forms, such as were found in the living-rooms. There was one exception, namely, the cylindrical jars; but judging from the numerous specimens of these vessels taken from room 28, and from the fact that none were found in the mound or rock burials, they were used, no doubt, primarily in ceremonies, probably constituting part of certain altar paraphernalia.

Turquoise was one of the most common materials employed in the pueblos for ornamental purposes. The major portion of the supply used by this group of towns came from Los Cerillos, near Santa Fé. There are evidences of great mining activity in the prehistoric period, and the mines are worked, to some extent, at the present time. This turquoise is found in a trachyte matrix; many of the veins are very thin, as shown by the backing of stone on some of the large pendants. The great quantity of ornaments in room 33, made from this material, presents a wide range of forms; many variants of known types are available, while pendants of new forms were also found.

The mosaic and the incrustated objects from this region, although not new to science, show the high degree of skill attained by these people and their esthetic tendencies. Their idea of proportion and of color-values is evidenced by the careful portrayal of detail in the incrustated objects, as illustrated, to some extent, by the objects from this room, and still more by the series obtained from other rooms of the ruin. The mosaic cylinder — the only incrustated basket that has come to the notice of the writer — is especially interesting. The covering of ceremonial packages, and the incrusting of trumpet mouthpieces, suggest the extent to which the embellishment of ornaments and ceremonial objects was carried.

A final survey of the objects discovered in this room tends to prove that the burials were made at a time when the esthetic arts of the ancient people were at their height. These specimens are in keeping with the most ornate productions from other parts of the ruin, and, viewed as a whole, these productions afford conclusive evidence that the people of Pueblo Bonito reached as high a degree of proficiency in the arts as those of any other pueblo in the Southwest. Further investigation doubtless will establish the fact that the arts of the Chaco Canyon group mark the zenith of Pueblo estheticism.

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