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# A STREET IN PETRA

BY

**M. A. MURRAY, D.Lit.**

AND

**J. C. ELLIS**

BRITISH SCHOOL OF ARCHAEOLOGY IN EGYPT

A STREET IN PETRA

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BRITISH SCHOOL OF ARCHAEOLOGY IN EGYPT

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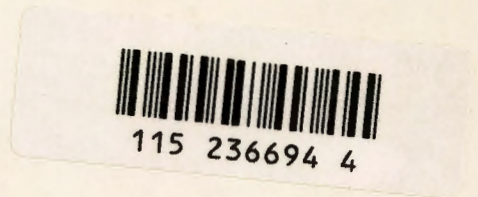
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LONDON

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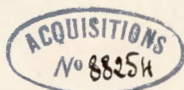
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## CONTENTS

CHAPTER	PAGE
INTRODUCTION, <i>M. A. Murray</i> . . . . .	I
I. THE NORTH CAVE AND COURTYARD, <i>M.A.M.</i> . . . .	3
II. THE SOUTH CAVE COMPLEX, <i>J. C. Ellis.</i> . . . .	5
III. DESCRIPTION OF PLATES, <i>M.A.M. and J.C.E.</i> . . . .	13
IV. CHRONOLOGY OF SOUTH CAVE COMPLEX, <i>J.C.E.</i> . . . .	27
V. NABATAEAN SCULPTURE, <i>M.A.M.</i> . . . .	30
VI. DERIVATION OF THE ROCK-CUTTING AT PETRA, <i>J.C.E.</i> . . . .	32
APPENDIX I. GAMES, <i>J.C.E.</i> . . . .	35
APPENDIX 2. LIST OF PLANTS, <i>John Rishbeth.</i> . . . .	35
INDEX . . . . .	37

## LIST OF PLATES

PLATE NO.	PAGE
I. Sketch map of Petra . . . . .	13, 35
II. Views from summit of Umm al Biyara . . . . .	13, 25
III. 1. Roman aqueduct . . . . .	13
2. Wady Musa in flood. From Al Habis . . . . .	13
IV. North Cave. Plan and section . . . . .	13
V. North Cave. Diagrams . . . . .	3, 4, 5, 13
VI. North Cave. Views, showing walls and rebated stone . . . . .	4, 13
VII. 1-3. Cupholes. North Cave . . . . .	5, 13
4. Game-board on tomb-slab. South Cave Complex . . . . .	7, 13, 35
5. Flint implements . . . . .	13, 26
VIII. Pottery. Bowls and cups . . . . .	2, 13
IX. Pottery. Bowls, cooking-pots, bottles . . . . .	4, 13
X. Handles . . . . .	14, 20
XI. Pottery. Miscellaneous . . . . .	14
XII, XIII. Designs on painted pottery . . . . .	14, 25
XIV. Objects. Bone, stone, glass, iron . . . . .	15
XV. Stone objects . . . . .	10, 11, 12, 15
XVI. South Cave Complex. Views. . . . .	6, 11, 16
XVII. South Cave Complex. Tomb and Altar . . . . .	6, 7, 17
XVIII, XIX. Walls and Chambers . . . . .	8, 9, 11, 17, 29
XX. South Cave Complex. Plan and section . . . . .	5, 6, 8, 17
XXI. South Cave. Plan . . . . .	5, 6, 17
XXII. Shaft Tomb. Plan and section . . . . .	7, 17
XXIII. Tomb and chambers. Plan . . . . .	7, 8, 9, 11, 17
XXIV. Interior of Upper Cave. Isometric view . . . . .	18
XXV-XXXIII. Pottery from South Cave Complex . . . . .	12, 18-24, 25, 27, 28
XXXIV-XXXV. Painted bowl . . . . .	10, 23, 24, 25
XXXVI. Miscellaneous Objects from South Cave Complex . . . . .	11, 12, 25, 27, 28
XXXVII-XXXVIII. Flint implements . . . . .	26
XXXIX. Casts from mould of female head . . . . .	11, 27, 30
XL. 1. Mould of female head . . . . .	11, 27, 30, 32
2. Cast . . . . .	27, 30
3. Head of Nabataean king . . . . .	27, 31, 32
4. Coin of Malchus . . . . .	27, 31, 32
5. Coin of Obodas . . . . .	27, 30, 31, 32
XLI. Bronze head of Nabataean king . . . . .	27, 30, 31

# A STREET IN PETRA

## INTRODUCTION

1. The party consisted of Mr. J. A. Saunders, Mr. J. C. Ellis, and myself. The excavation had necessarily to be of short duration as, owing to various circumstances, the time was limited. It was decided therefore to do a small but intensive excavation, and for this purpose caves were the most suitable.

2. The reasons for choosing the caves which were ultimately dug were:—(1) they were on the central hill in the middle of the valley; (2) they were well above flood level, an important point when the force of the torrents, which rush through the valley after heavy rains, is realised; (3) they are within easy reach of the perennial spring of Umm 'Olleqah. For all three reasons these caves must have been among the first and last to be inhabited, and were, we thought, likely to yield something of interest.

The two caves were on the same stratum, which here slopes slightly downwards from north-east to south-west. They were sufficiently below the brow of the hill to allow of their running far back into the rock, and yet not so low down the hillside as to suffer unduly from the fall of debris from above. They faced north-west looking across Wady Abu 'Olleqah. We found later that they formed part of a street of habitations.

3. In cave digging the number of workmen must necessarily be small, for a cave can only accommodate a few at a time. The diggers are also hidden in a great measure from the excavator, who cannot oversee the work as easily as when digging in the open. Our dump-heaps were over the rock at the side of each cave, consequently the basket boys had a very short distance to carry their loads. This also made a difference in the number of hands required; six or seven workers to each cave were all that were needed. It was remarkable how soon the carriers

at the North Cave made a smooth and easy path from the cave to the dump by their skilful way of throwing their loads of earth. Where there had been a steep hillside covered with slippery scree, there was in a few days a firm and wide path on which one could walk with ease.

Our workmen were taken from the Bdul of Petra and from the Liyatneh of Eljy, the village which commands the eastern entrance to Petra. The Bdul were not only ignorant but weakly, and were very different from the strong, hardworking fellahin of Egypt and South Palestine. These men were changed every week, so that every man in the valley had a week's work while we were there. Thus each man earned the same amount of money, and there was no jealousy. The Eljyites were better fed and therefore stronger, but they suffered from the disadvantage of extreme bumptiousness, a vice from which the Bdul were free. This was not from natural virtue on the part of the Bdul, but was probably due to the weakness of malnutrition. As it was advisable to keep the Eljyites and the Bdul apart the work naturally divided itself into two sections, Mr. Saunders taking the Eljyites at the North Cave and afterwards at the Town Dump, while Mr. Ellis had the Bdul at the South Cave. In this way the work proceeded harmoniously when once the Eljyites realised that it was ours to command and theirs to obey, and that we were working to a plan and not for their amusement.

4. The archaeological importance of Petra is twofold, for the valley is practically a sealed deposit and its civilisation belongs to a period which has received comparatively little attention from archaeologists. Petra was civilised before Rome reached her, she fell into decay and gradually died of inanition when Rome became her ruler. For about three centuries Petra was inhabited and flourishing, her people lived by the condition of insecurity existing in the neighbouring countries; but as soon as the



Roman power was established over the Near East, trade was safeguarded and the necessity for Nabataean protection lapsed. The rocky shelter of Petra was then abandoned, the inhabitants followed the trade to Palmyra and elsewhere, and the valley has been practically deserted ever since. Petra was abandoned voluntarily; there was no conquest, no sack of the place, no destruction by fire, and apparently no outbreak of plague or pestilence. It was a deliberate desertion of a site no longer of use. Families moved with all their household gear, leaving behind them only what they could not carry with them—their houses, their temples, and the tombs of their ancestors. Consequently the Nabataean remains in Petra belong to the last two centuries before Christ and about the first century and a half after.

This is a period which so far has received scant attention from archaeologists as compared with other, so-called more interesting, periods. It is a complicated age, a time of transition, when new ideas were arising. New ideas in art, new ideas in religion, new ideas in government, all these made for an incalculable change throughout that part of the world, and the repercussions are still with us. In a sealed deposit, such as Petra, much may be learned of one of the most important periods of history. It is a site which needs long and careful excavation and study.

It is still uncertain whether there are deposits of an earlier date than the time of Nabataean rule. The Edomite certainly possessed the place, but it is doubtful whether it was ever more than a city of refuge for him, an almost inaccessible stronghold to which to flee from a victorious enemy. Before the Edomites, came the Horites, the children of Seir. Again, until full excavations are made there is no possibility of arriving at any conclusion as to whether these early people actually inhabited the valley and left any remains. The High Places are often said to be Edomite, but there is as yet no real proof that they are not Horite or possibly Nabataean. The Nabataean remains show a great facility in rock-cutting, but we have no knowledge that the previous inhabitants of the valley practised that art.

So far, excavation at Petra has done little to solve any of the problems. In fact, like all tentative excavations, it has only raised new questions which are at present unanswerable. Further investigation

is urgently needed. The depth of soil in many parts of the valley is sufficient to conceal buildings as well as tombs. The ruins of fallen temples may hide statues and inscriptions and objects used in the ritual. Under the pebbles of the springs and waterfall may lie the votive offerings to Dusares and Al Uzza.

5. It is clear that the deities of Petra were regarded as peculiarly powerful. Amaziah, king of Judah, thought it worth while to carry away the gods of Petra, to set them up in the temple of Jerusalem and to worship them as the equals of Yahweh; a notable tribute to their power by the conqueror of their worshippers. In Nabataean times their dominance and popularity are shown by the immense amount of broken pottery which lies round about the High Places. The reason for this quantity of pottery and its destruction was, perhaps, the feeling that the offering to the god having been made, the container—whether bowl or vase or platter—must be broken; it had been used once for a sacred purpose and could not be used again, so it was thrown out of the sacred precincts on the rocks outside. The masses of sherds near the Holy Places are many feet deep. The pottery is usually a finely levigated ware, very thin, and often painted with designs of various kinds. The colour of the pottery is red, the designs are in the different shades of reddish brown and purplish-black given by manganese. There is not as yet sufficient evidence to give more than a tentative sequence for this type of pottery. Besides the fine and painted wares there is also a coarse pottery used for cooking vessels, which far exceeded the painted ware. Small cups (see pl. VIII) were the commonest form of vessel which were found; they were probably used as drinking cups. Owing to their small size and the thickness of the ware they have escaped uninjured. It is an interesting fact that among the few literary references to the customs of the Nabataeans which have been preserved, there is one as to the use of drinking cups. Strabo says that at a royal banquet, "no-one drinks more than eleven cupfuls, from separate cups, each of gold". It would seem from this that it was the custom for each person to have his own drinking vessel and that the "loving-cup" was unknown. That the number of cupfuls to be drunk at the palace should be specified suggests a ritual ceremony rather than a party

of pleasure. Ritual is also suggested by the record that the Nabataeans "eat their meals in companies consisting of thirteen persons. Each company is attended by two musicians."

6. The climate of Petra is unfortunately not sufficiently dry for the preservation of organic remains. Textiles of all kinds, and almost all animal and vegetable substances, have disappeared owing to the damp. Little has survived but metal, bone, glass, stone, and pottery. Of the last, as I have said above, there is a vast amount. Metal is rare; a few personal ornaments, a few tools, all of bronze, are found; and coins of both silver and bronze are not uncommon. A mass of iron of several pounds weight was also found. Stone querns and mortars show that bread and vegetables formed part of the diet. Wood remains where it is protected from rain, as in Kasr al Bint Fara'un and in the tomb described on p. 12. Bones are usually in bad condition, and it is not always possible to preserve them. Glass occurs, but only in fragments. Dr. Glueck's opinion that the Nabataeans were glass-makers makes the finding of even a few fragments of glass vases of some importance. In considering the finds made in the Petra valley it is necessary to remember that the people who lived there took all their valuable possessions with them when they removed. Unless therefore an untouched tomb or dwelling-place can be discovered the finds will consist only of the objects discarded by the people at their flitting, disused and broken objects, not worth carriage to a new home.

## CHAPTER I

### THE NORTH CAVE

7. The cave overlooked Wady Abu 'Olleqah, and though in the same stratum as the South Cave was at a slightly higher level. The whole cavity was filled to the roof with a deposit of wind-blown and rain-laid earth and sand. In this were also fragments of rock which had fallen from the roof. We cleared the whole cave completely to the rock floor.

The cave was natural in origin, but had been enlarged artificially, the marks of the pick being clearly visible on the walls. The roof showed no sign of

working as the falls and general weathering had removed any tool-marks which may have existed formerly. The roof sloped downward from the entrance to the back, so that the cave was somewhat lower at the back than the front. The walls at the back met the roof with a curve which was quite irregular, as were all parts of the cave—floor, walls, and roof. The height of the wall at the back was 8 ft. at the centre, and 7 ft. 6 in. at each corner up to where the wall begins to curve upwards and inwards to the roof, the curve adding another eight inches to these heights. At the front the highest part was 9 ft. 10 in. from rock floor to roof. The measurements were taken from the underside of the roof (i.e. the ceiling) down to the floor immediately below the edge of the cave mouth. The floor of the cave was at a lower level than the outside courtyard.

The deposit at the back of the cave was uniformly 8 ft. deep, completely covering the curve of the walls to the roof. The surface of the deposit sloped forward and downward from back to front of the cave; it was about 2 ft. 6 in. below the roof at the mouth, and from there the slope continued at the angle of rest to the outer (north-west) edge of the courtyard in front of the cave.

8. The first thing to be done was to remove the deposit. A trench 3 ft. wide was cut horizontally through the deposit along the centre of the cave from front to back, the earth being removed in layers of approximately 1 ft. deep down to a depth of roughly 6 ft., i.e. about 2 ft. above the floor level. These layers were lettered A to E. Then the banks between the trench and the sides of the cave were removed in layers in the same way. When the cave had been thus partially emptied it became necessary to clear the courtyard; this was done by beginning at the outer edge and working towards the mouth of the cave, still removing the earth in layers. When the courtyard was cleared the remaining 2 ft. of deposit was removed from the inside of the cave. (See diagram, pl. V, 6.)

The deposit inside the cave was composed of loose wind-blown sand to a depth of 3 ft. from the top at the back, and about 2 ft. 3 in. at the front. Below this depth it became progressively more tightly packed and stratified, with a downward slope towards the back, the gradient being approximately

1 in 15. The gradients at top and bottom of the deposit were in opposite directions, at the top the slope was towards the mouth of the cave, at the bottom in the reverse direction. This seems to have been due to the fact that the lower layers had been laid by the infiltration of water, whereas the upper layers, which had not been consolidated in the same way, were of dry wind-blown sand and lay at the angle of rest.

The sherds and the few scraps of glass found with them in layers A to E were so small and fragmentary as to suggest that they had been washed down with the rain-water from the hill above. They were all found close to the mouth of the cave, immediately inside, outside, and just under the arch of the opening. Their position shows clearly that they came down with the rain-wash, and were too heavy to be carried into the cave. Sherds were not found in any quantity until a level of 2 ft. above the rock floor was reached.

9. The first definite signs of occupation, perhaps by squatters, were the remains of hearths, of which there appear to have been seven. The levels show that at this time the floor was already covered with wind-blown sand which sloped down from the front of the cave to the back. The hearth at the highest level was in the north-east corner (on the left as one enters the cave), and was about 3 ft. above the rock floor; there were two others along the same wall at progressively lower levels. Along the opposite wall were again three hearths: the one nearest the entrance was about 2 ft. above the rock-floor, while the one nearest the back wall was only 18 in. above that level. In the centre of the back wall of the cave there was another hearth, which was the lowest of the seven, being only 1 ft. above the rock. The remains of the hearths consisted of charcoal, burnt earth, pieces of burnt stone and flint, and a few charred animal bones. In the middle hearth on the left was the base of a ribbed cooking pot of the same type as pl. IX, 25.

At the same level and on the same side, though not associated with a hearth, were the fragments of a large amphora of grey pottery; a piece of the rim gave a diameter of 14 in., and the sides of the vessel were  $\frac{1}{2}$  in. thick. Both the cooking pot and the amphora were too fragmentary to be drawn. All the objects found on this site were, with few

exceptions, found either in the cave below the 2-ft. level or in the courtyard; the upper layers of the cave, A to E, were almost barren (see pl. IV, 6).

10. **The Cave.** As I have pointed out before, the cave was enlarged at some period by pick-work; but in the greater part of the walls and across the whole of the roof the tool-marks have been obliterated by weathering of the soft sandstone. The roof has suffered most from this cause, large pieces had fallen from it and lay inside the cave, chiefly at the 2-ft. and 1-ft. levels. The insecurity of the roof may have been the reason why the cave was abandoned as a habitation, or even as a temporary shelter. The roof at the mouth of the cave being more exposed had suffered most, and it was evident, from the blocks that lay there, that at one time the roof had projected considerably farther forward than it does now.

On the south-west wall at 4 in. above the level of the rock-floor was a niche (pl. V, 2) or circular hollow; the height and width were 5 in., and the depth  $3\frac{1}{2}$  in.; the back was curved. It is difficult to suggest the use of this hollow; it was not a shelf for household purposes, nor a shrine in which to stand an image.

Across the mouth of the cave, from the south-west side to about the centre, are the remains of a wall of dressed stone, the stone nearest the centre being rebated for a door. From the north-east side in the same alignment are a few stones of a similar wall. The height of the walls cannot now be ascertained, but the indication of a door shows that they must have been at least breast high, and more probably that they filled the whole space of the mouth of the cave. The walls (pl. V, 5A, B) are built without mortar, being made of large blocks, the interstices packed with rubble; rubble packing was also used to compensate for the irregularities of the rock on which the wall was built. The rebated stone is set with its length across the wall, and it therefore constitutes the whole width of the wall. The rebate is 3 in. deep, which shows that the door was of some thickness. As the floor of the cave is at a lower level than the courtyard there must have been a step down into the cave at the entrance; the rebated stone, as can be seen both in the photograph and the drawing (pls. V, 5A, and pl. VI), was set on another stone to overcome this difficulty. The rest

of the wall was slightly narrower than the rebated stone; the stones were set evenly on the cave side, but on the outer side a smooth facing was made by the use of thin slabs set on edge against the stones of the wall. The height of the wall at the doorway is  $13\frac{1}{2}$  in. above the courtyard floor; but as the floor curves slightly upward to the sides, the height of the wall where it joins the rock-side is 10 in. On each side of the entrance two ledges were cut in the rock-side to hold the stones at higher levels. The first was 10 in. above the present level of the wall, and was 3 in. wide; the second was 10 in. above the first, and was 4 in. wide. Dressed stones were found lying loose in the debris on each side of both walls, mixed with heavy blocks which had fallen from the roof; these had probably been the cause of the destruction of the walls.

The floor of the cave is 14 in. below the level of the courtyard. Within the cave on the south-west side of the mouth are two ill-defined steps or ledges (pl. V, 4A, B). These begin at the base of the wall, running along its whole length and gradually merging into the downward slope of the floor. It is possible that these steps once extended transversely across the whole width of the cave, but if they ever did so they have now disappeared on the other side.

**11. The Courtyard.** Though there is generally a natural platform outside a large cave, in this case it has been enlarged artificially by cutting away the rocky hillside so as to form enclosing walls (pl. V, 3); the floor also has been artificially smoothed.

In the north-east side of the courtyard close to the mouth of the cave is a square hollow cut into the rock floor. The depth is about  $2\frac{1}{2}$  in.; the cutting is rough and uneven. The position suggests that it was to hold the image or emblem of the household deity; for among the pagan Arabs the household god was set near the entrance door, and was worshipped by stroking with the hand as one passed in and out. The emblem of any deity in Petra, whether god or goddess, was a stone, which might be unhewn or might be cut into a cube or other geometrical shape. Such a stone when taken out of its setting would be indistinguishable from stones not sacred; the divine emblem from the niche may therefore have been lying among the other stones in the courtyard quite unrecognised and

unrecognisable. There were five cup holes cut in the floor of the courtyard, all being of about the same depth,  $2\frac{1}{2}$  in. Four were in a group together, one at a little distance apart. The cutting was rough as though done by an unskilled hand (pl. VII, 1-3).

On the south-west side of the courtyard at 18 in. above floor level the rock had been cut to form a level ledge, in the centre of which there was a hole of 4 in. in diameter at the mouth; it tapered down to a point making a shape like an inverted cone (pl. V, 1). In the rock wall at 8 in. above the ledge was a semi-circular cavity measuring  $11\frac{1}{2}$  in. by  $12\frac{1}{2}$  in. and  $5\frac{1}{2}$  in. deep; the back, like the similar cavity inside the cave, was concave. At 19 in. farther along this wall towards the outer part of the courtyard was another ledge, measuring 20 in. long and 4 in. wide, at approximately the same height above the floor as the first ledge. This also was artificially made.

The combination of these various forms of rock cuttings suggests that certain ceremonies, religious or otherwise, were held in the courtyard. If so, they must have been entirely of a domestic character as they are too small and slight for any elaborate ritual.

## CHAPTER II

### THE SOUTH CAVE COMPLEX

**12.** The cave and its associated complex are on the terraced slopes of the left bank of Wady Abu 'Olleqah. The general position is shown on the map, pl. XX.

The complex consists of (*a*) the South Cave, from which (*b*) a flight of rock-cut steps leads to (*c*) an upper terrace and a covered shaft-tomb. On the same terrace, behind the shaft, are (*d*) an altar, (*e, f*) two built chambers, and (*g*) an upper cave, the last being cut into the face of the rock which protected the back of the two chambers.

For the detailed plan of the South Cave, see pl. XXI, and for its relation to the rest of the complex see plan and section on pl. XX. Overlapping sections AB, CD, EF, and GH, taken across the different parts of the complex, are shown on pl. XX, which should be turned sideways to read the section. The vertical interval of the section is the same as the horizontal equivalent, so that this gives a correct

impression of the slope of the hillside overlooking the wady.

**13. The South Cave.** The access to the cave was by a rock-cut stairway on the north (pl. XVI, 4, 5); this led down to the levelled rock ledge in front of the cave. The brink of the ledge, which overlooked a sheer cliff of some 20 ft. depth, was guarded by a rough wall of sandstone blocks; a similar wall ran across the opening of the cave. The original access to the ledge and cave was by a stairway on the south, deeply cut into the rock with partially built steps. Subsequently this stairway was closed across the lower end by a well-built wall of limestone blocks, four courses of which remain. The blocks, the average facial dimensions of which are 15 in. by 7½ in., are trimmed inward at the edge to allow of a neat face; the space between the two faces of the wall is filled with limestone chips. This method of stone-dressing and of construction is exactly similar to a great deal of fine stone building of the present day. Besides the closing of the earlier stairway, the wall extends northwards to the opening of the cave and forms a facing to the rock (pl. XXI, and pl. XVI, 3, 6).

The ledge was divided roughly into two parts by a low stone wall joining the limestone wall to the parapet. The arm of rock forming the south boundary of the ledge was cut away so as to splay outwards apparently in order to improve the view towards Al Habis and Umm al Biyara. The cave was cut in the soft variegated sandstone, and is roughly 16 ft. wide and 10 ft. deep with an average height of 8 ft. (pl. XXI). Although much eroded there are traces of tooling on the wall; the roof however seems to have been left rough. The interior is divided into two parts; the floor on the left, i.e. north, side being about 8 in. higher than the rest; this division was emphasised by a projection 14 in. wide of the rock wall at the back of the cave, a projection which ran from floor to ceiling.

A shallow niche 54 in. long, 32 in. high, and 12 in. deep was cut into the wall at the back of the north, or raised, half of the interior. The inside corners are rounded, and the bottom of the niche is 27 in. from the floor-level. Even allowing for erosion of the cave walls the depth was very slight, and its purpose is not clear. The lower room was obviously the living-room, judging by the variety of domestic

features it contained. A ridge of rock about 6 in. wide and 2 to 3 in. high, left when the floor was levelled, divides a small triangular area in the back corner from the rest of the floor. Near this is a double hole gouged through the floor. The combination of these two features suggests that the triangular area served as a rough manger for a small animal, probably a goat, and that the hole was for the animal's tethering cord which passed through it. A similar tethering hole is seen on the altar (pl. XVII, 7).

A shallow oval depression, about 22 in. across, at the back and near the junction of the two floors, may have been a hearth as there was some degree of blackening. At the front corner of the room near the limestone wall were the remains of a thick pottery vessel, some 21 in. in diameter. A narrow channel 2 in. wide and quite shallow was cut across the floor from near the tethering hole to the vessel. The powdery filling of this vessel contained no carbon, and as the rock sloped towards it there is a suggestion that it was a kind of soakaway. Midway between this corner and the manger and resting on the rock-floor was part of a green sandstone vessel with a flat base and walls about 2 in. thick. Near the front of the cave was a kind of rude chair, formed of two large blocks of sandstone standing parallel with one another with a back piece made of a smaller block, the whole held together with mud plaster. There is no doubt that a quantity of rock has fallen away from the front of the cave roof, but the remains of the sandstone wall which closed the front of the cave defines the limit of the internal area.

**14. Stairway.**—The bottom step of the northern staircase is built of sandstone blocks; the rest of the steps are cut in the rock. The lower steps are badly worn (pl. XVI, 5) though where the stair turns towards the tomb shaft they are better preserved (pls. XX at 'E' and XVI, 7). There appears to be a connection between the tomb and altar, and between them and the South Cave. The staircase leads directly to them, and the tethering-hole in the altar and the other in the floor of the South Cave suggests that the occupant of the cave was responsible for the custody of the sacrificial animal. In which case the South Cave, small as it is and by no means a family mansion, might well have been

the quarters of a celibate priest, whose special duties were to keep and prepare an animal for sacrifice and to conduct the ceremonies at the altar for the entombed dead.

**15. Covered tomb-shaft.** The clearance of the staircase led to the discovery of the covered tomb-shaft (pl. XXII). Pl. XVII, 1, shows the four covering slabs just visible under the spring vegetation. Tomb robbers had gained access by smashing a corner off one of the end stones. On turning the broken slab over, a game-board was found roughly cut into one corner (pl. VII, 4). The whole area round the shaft was cleared down to bedrock to prevent debris from the hillside falling into the tomb and perhaps bringing intrusive objects with it in its fall.

**The Covered Tomb** (pl. XXII). As the opening of the shaft was on the slope of the hill the four covering slabs had been packed up on the lower side with chips of stone. On the upper side the slabs barely rested on the edge of the shaft. The depth from the surface to the floor of the tomb was 10 ft. Opening out of the shaft on the south-east side was a roughly rectangular chamber, 16 ft. by 10 ft. The height was about 5 ft. 6 in., so that the thickness of the rock roof near the shaft was about 4 ft. 6 in., but at the inner part of the tomb the thickness was increased by the additional mass of the altar which was directly overhead.

In the north angle of the shaft were nine toe-holes, six in the long side and three in the end. By pressing one's back against the south side it is possible with the assistance of the toe-holes to wriggle in and out of the shaft (pl. XVII, 4). The sandstone rock in which the chamber is cut is beautifully veined with bands of dull red and cream with an occasional touch of blue. The surfaces of the walls and roof had crumbled considerably, but it was evident that they had been cut originally with some care. The wall on both sides of the entrance from the shaft splays backwards; this was probably not intentional but an error of work. After the floor had been prepared at the same level as the bottom of the shaft it had been divided into six rectangular loculi, three on each side of a central rib of the floor, which was left as a gangway. The loculi had been further excavated to a depth of about 43 in., a thin wall of rock separating each loculus from its neighbour (pl. XXII).

**16. Altar.** The clearance revealed that the area round the shaft had been artificially levelled except for a mass of rock which had been left standing. This rock was roughly rectangular in shape, it was about 18 ft. long and 5 ft. wide, and varied in height from 1 to 3 ft. above the levelled rock. It lay immediately behind the shaft and in front of the two chambers (pl. XXIII), and from its shape and context it was undoubtedly an altar. The central portion of the altar was higher than the two flanks, the right side was shaped like an inverted horse-shoe, the left side was low and a tethering hole was cut through the nose (pl. XVII, 6, for more detail pl. XVII, 7). Nothing is known for certain about Nabataean burial customs, so that it is not possible to say whether animal sacrifices were made at the tomb, but the proximity of the altar to the tomb and the tethering hole is suggestive of such a custom. A shallow drainage channel ran between the altar and the shaft (pls. XXIII and XVII, 5), it turned down the north-east side of the shaft and discharged over the edge of the terrace. This channel would not in itself be sufficient to prevent the flooding of the shaft by rain-water; it is more likely that it was cut for carrying off the libations, or for disposing of the blood if an animal were sacrificed. On the other hand a much wider and more elaborate drainage channel (pl. XXIII) was cut apparently to carry off both rain-water and household soil from the West Chamber. The purpose in this case of confining the rain-water to a channel instead of letting it flow haphazardly over the brink of the terrace would be to avoid inconvenience to the occupants of the caves below, caves which we observed but did not excavate.

**17. East Chamber.** When the area at the back of the altar was cleared it was found that an arm of rock was left which joined the altar to the rock face in which the Upper Cave was cut. This thin wall of rock formed a foundation, against and on which dressed blocks of sandstone were placed to form a wall dividing the East and West Chambers (pl. XXIII).

The space behind the altar was filled with debris containing dressed blocks of sandstone, rubble, and sherds. Two walls at right angles completed the enclosure round the debris. The debris was systematically cleared until a level rock-floor was

reached; a beaten earth floor about 2 in. thick had been laid over the rock. The depth of debris here was surprising; it completely covered the back wall, which stands 5 ft. from the rock floor (see section on pl. XX). The walls of the chamber were, with the exception of the door-jambs, roughly built of undressed sandstone blocks laid with mud mortar. There were two doors; one in the south-east wall; the other and smaller door gave access to a raised rock bench which lay between the back wall of the chamber and the front of the Upper Cave. This rocky platform had been left standing when the terrace floor was levelled. The door-jambs were built of dressed sandstone blocks (pl. XIX, 6) and were rebated to take a swing door that in the north-east corner opened inwards and was hung in the angle of the wall; this was shown by the fact that the back wall near the door had a shallow recess so that the door, when opened, would lie flush with the wall (pl. XXIII, East Chamber). The jambs of the smaller door in the south corner of the back wall were rebated on the outside so that the door opened outwards to the raised rock platform, round two sides of which ran a narrow drainage channel. Another drainage channel had its head conveniently outside the larger north-east door, and discharged in the direction of the terrace edge. Although the walls of the chamber were crudely built the inside was apparently mud-plastered and whitewashed; traces of whitewashed mud plaster, about a  $\frac{1}{4}$  in. thick, were found in the angle of the east door jamb and in the adjacent wall recess. The north wall is formed by the larger part of the altar (pl. XXIII). There were no indications that the top of the altar had been dressed in order to take blocks of masonry to complete the height of the wall; it is, however, most unlikely that the side of the chamber was left quite open, though the window or windows must have been on this side. Most probably a rubble wall with mud plastering was built up on the altar.

Midway against the inside face of the north-east wall were four blocks of dressed limestone superimposed one on the other forming a kind of pilaster; they measured roughly 18 in. by 10 in. by 8 in. thick. Directly opposite these four blocks and against the south-west wall were two superimposed blocks (see pl. XVIII, 6, for the pilaster; pl. XXIII for the position of both pilasters in the plan). The projecting wall of rock from the altar, which forms part of

the south-west wall, has been cut into slightly to make a square backing for the superimposed blocks on that side. The position of the opposing pilasters suggests that they formed the main support of the roof; they may have been the springs of an arch, or they may have carried a central ridge pole. In the latter case, there would probably have been a pitched roof discharging rain-water on the rock platform in front of the Upper Cave where there is a drainage channel (pl. XXIII); it would also discharge to the north over the altar and on the rock by the brink of the terrace. Not a single scrap of wood was found either in the East Chamber or in the surrounding area; there was not even a trace of carbonised wood in the debris. It is therefore evident that not only was there no destruction by fire, but also, which is very significant, that the timber of the roof and doors had been carefully removed. In a district where the only timber obtainable is from the stunted aromatic pine, common in that region, it follows that timber used in construction must have been imported and was consequently of value. The evidence obtained from excavation is proof of the position of affairs when Arabia Petraea came under Roman domination in A.D. 106. The clear evidence for the use of timber in the houses with the complete lack of any trace of it, coupled with the fact that little but pot-sherds were found in the chambers, and the lack of any traces of fire or violence, are conclusive proof that the city was voluntarily deserted. Without haste or coercion, as soon as it became certain that Petra would no longer dominate the Eastern trade, the Petrans packed up and left the valley, following the trade to Palmyra which was now the new trade centre.

**18. Complex of walls north-east of Altar and East Chamber.** A complex of the remains of walls was found at the north-east of the altar. Three periods of building can be noted in these walls. The best preserved wall was L-shaped, the long arm faced the north-east wall of the East Chamber (pl. XXIII). The space thus left between the two walls formed an approach to the Upper Cave, and it is clear that it was constructed to allow of access to the cave. The other arm of the L-shaped wall (i.e. as much of it as was uncovered, for here was the eastern limit of the excavations) formed a facing to the rock. The northern termination of the long arm was properly

squared. The construction was of heavy squared blocks of sandstone with oblique tooling on the surface of the greater number of them. The average interval between the toolmarks was about  $\frac{5}{16}$  in.; the blocks varied in size from 20 in. by 9 in. by  $7\frac{1}{2}$  in. to 12 in. by  $7\frac{1}{2}$  in. by 7 in. About a foot from the base, and about the middle of the western face of this wall is a cup-hole cut in the levelled rock passage-way. The long arm of the wall points almost due north, and at its northern extremity it overlies the foundations of an earlier wall composed of rough-faced and fairly regular limestone blocks (pl. XIX, 8), practically identical with those closing the right-hand staircase of the South Cave. The limestone wall, from the point where it underlies the sandstone blocks, continues in a northerly direction for 13 ft. where it turns sharply to run south-west till it terminates at the north-east end of the altar. At this point (pl. XVIII, 2) it clearly steps up and over the levelled rock in front of the altar, the ground-level of which is higher than the very well-levelled area on which the limestone wall itself is built.

From the doorway of the Upper Cave (pl. XXIII) to the northern extremity of the drainage channel which begins near the large door of the East Chamber, the rock had been very carefully levelled with a gradual fall northward towards the terrace edge. At a point about the north end of the drain the rock level dropped rather abruptly some 6 or 7 in.; between this point and the northern face of the limestone wall the level had been made up by packing with limestone chips. Two courses only of the limestone wall remain except on the right where there are three courses (pl. XVIII, 2). The height and purpose of the wall are unknown. There is a gap about 2 ft. wide at the altar end of the front face where there are three courses of blocks (pl. XVIII, 2). This gap may represent the original door-sill for a doorway which led to the Upper Cave. A pillar and door-sill, apparently the remains of a third wall, were found in the limestone-chip packing standing midway between the north end of the first wall and the north face of the second wall. It differed from the other two in that it was constructed of large, flat, rectangular slabs. Two slabs were 28 in. by 8 in., but the more uniform size was 21 in. by 16 in. by  $5\frac{1}{2}$  in. thick. Two slabs had fine parallel tooling, the rest were plain (pls. XXIII; XIX, 7; XVIII, 1, 2). The construction of the pillar

is excellent; from the west face similar thin slabs of sandstone extend to the north-east end of the altar forming a sort of wide sill. On this sill, adjacent to the square base, two blocks of the limestone wall were laid. It is clear therefore that the remains of the structure of finely worked sandstone slabs is the earliest of the three walls. It is as difficult to assign any specific purpose for the squared base of sandstone slabs (unless it was the plinth for a cult object) as it is for the limestone wall. But what is clear is that all three structures seem to provide both a guard and an approach to the Upper Cave, which would then appear to have been a place of some considerable local importance for a fairly long period, allowing for a reasonable interval of time between the building of each of the three walls.

**19. The Upper Cave.** Between the south side of the East Chamber and the rock face was a space so completely filled with debris as to appear part of the hill-side. When this was removed a vertically dressed rock face was disclosed in which was cut a doorway and a window (pl. XIX, 2). The doorway was just over 7 ft. high; its original width was 3 ft. 9 in., but the width had been much reduced by the building of a new door-jamb of heavy sandstone blocks halfway across the opening, and the filling in of the space between it and the other jamb with rubble. Subsequently the small remaining space had also been filled in with rubble (pl. XIX, 1), which completely sealed the entrance. The condition of the doorway suggested a "sealed deposit", and it was with some pleasurable anticipation therefore that the sealing was carefully removed. The final rubble packing was the first to be cleared away, disclosing a rebate for a door down the edge of the blocks, the opposite (north) side of the rock door-jamb had been similarly rebated, though now badly weathered. At the top angle below the roof a deeper recess may have been for a lamp (pl. XIX, 3, 5). Behind the rubble filling of the door the debris was packed right up to the roof of the cave. The built-up jamb and the first rubble packing were then removed, and the original width of the doorway opened up, disclosing the remains of the rebating on the south side. It was clear that the silt of the upper part of the debris had been deposited by water action, so that the subsequent removal had to be done with great caution. When a few feet of the debris had been



cleared away, the explanation of the filling up of the cave and the blocking of the door was apparent. The square window cut so closely to the north door-jamb had weakened the cave, and the thrust of the sloping rock above the roof had caused a bad crack between the two. It was through a fissure in the roof that the upper filling of the cave had been washed in by winter rains after the cave had been sealed, and it was obvious that the danger of collapse had caused first the partial closing and then the final sealing and abandonment of the cave. All hope of finding a sealed deposit vanished, for to remove the debris completely was to invite the disaster which the dwellers in the East Chamber had aimed at preventing. However, the filling was removed for about 4 ft. in from the inside of the front wall. This was sufficient to show that the cave had been carefully excavated. There was a sharp drop of the floor just inside the door while the roof sloped upwards. The walls were practically vertical and were well dressed. To the right of the doorway as one entered, a block of rock, 24 in. high, 17 in. wide, and 10 in. long, had been left projecting into the room at the foot of the wall when the cave had been prepared. The block sloped down to the front, where it was only 18 in. high, making a kind of *prie-dieu*. All three sides of the block were covered with white plaster on a mud base a  $\frac{1}{4}$  in. thick, the plaster extending for a short distance on the wall on either side. Directly above the block was a niche, cut into the rock wall to a depth of 6 in. The niche, which bore traces of white plaster, was 20 in. high and 17 in. wide, i.e. the same width as the block below it; the top was semi-circular. The traces of white plaster suggest that the whole of the interior of the cave was plastered at one time. There was a narrow, shallow channel cut in the floor, similar to the one in the South Cave, this also ran diagonally towards the west corner of the room. It terminated in a shallow cup-shaped depression near the *prie-dieu*. It seems probable that it was intended to receive libations.

It was disappointing not to be able to clear the whole cave, but sufficient information was obtained to show that this was not an ordinary dwelling-place. The whitewashed block and its relation to the niche as well as the relation of the well-built limestone and sandstone walls to the cave itself all show the importance of the cave. The evidence also shows that

originally there was a clear space between the cave and the altar below it and that the East Chamber was a late addition to the complex.

A small rectangular hole cut in the rock floor in front of the left door-jamb (pl. XIX, 5) is similar to the one near the entrance of the North Cave. It is probably the socket for setting up a sacred stone representing the household god, which was touched on entering or leaving the cave. From its position it cannot be connected with the securing of the door of the cave.

**20. The West Chamber.** Before leaving the site, a brief clearance was made of the West Chamber, principally for the purpose of planning. It was found that the tongue of rock projecting from the back of the altar formed the basis of a common wall to the two chambers. As so frequently happens in excavating, this brief clearance during one working day was productive of the most important results.

A darkish grey area of soil, overlying the wall common to the East and West Chambers, contained quantities of sherds and some nearly complete vessels. It was clear that this dark stained area was a refuse dump, and its importance lay in the fact that the point at which the dump overlay the party wall was about 5 ft. high, obviously not the full height of the wall. The dump had been deposited therefore after the collapse of the wall common to the two chambers. This is significant from the point of view of the chronology, for if it is found possible to assign a date to this, the latest pottery, it would provide a *terminus ad quem* for the two chambers.

After all traces of the dump material had been removed, a small area in the east corner of the room was cleared down to the rock floor to sample the earliest pottery, and the difference between it and that from the dump is most marked. Besides part of an alabaster vase (pl. XV, 24), there were found during the clearance a number of fragments of a painted bowl about 18 in. above floor-level; the pieces were carefully collected and kept separate. When the pottery was examined some weeks later these fragments were found to join together, and the unique painted bowl shown in pls. XXXIV, XXXV was the result.

There is a very marked superiority of the construction of this chamber over its neighbour to the

east. Instead of shapeless lumps of stone, well cut squared blocks were employed, and the room extended right back to the rock face in line with the Upper Cave entrance. At the back of the chamber the rock face had been carefully faced with sandstone ashlar (pl. XVIII, 7), as had been done with limestone at the South Cave. The west wall was of rubble similar to the walls of the East Chamber. This rough wall formed a butt joint with the ashlar which appeared to carry straight through towards the south-west (pl. XXIII), the rubble wall would then appear to represent a later partition wall. Along the side parallel to the terrace edge, and roughly in line with the altar, were the remains of a similar rough wall. So that the contrast between the fine ashlar of the east and south walls and the other two suggests that the Chamber as it stands now represents a contraction, or part only, of an originally larger and superior structure.

Another point of interest here was the set-back of part of the south wall for a width of about 3 ft. The space above this disclosed no rock face, only tightly packed debris. It suggested that here was the blocked up entrance to another cave, but that in this case the blocking had been done with more care and with dressed stones.

There was no time for the confirmation of this theory, but an examination of the ground to the west of the West Chamber, showed the top of a wall at right-angles to the terrace, about the width of a room away; and still farther west, at about the same distance apart and roughly parallel to the others there was visible the top of yet another wall. A similar examination of the ground to the East was productive of the same result. Information volunteered by one of the local workman was to the effect that he remembered seeing, in his youth, the opening of a cave immediately to the east of the East Chamber, a spot now covered with debris. That a clearance to the east and west of the two chambers would reveal a series of similar chambers, all built on the levelled rock terrace, and some of them, if not all, backed by a cave, appears certain. These composite dwellings would then form a street along the terrace, and further excavation might reveal that the whole of the arena of Petra was similarly built up. With wooden doors and plastered walls, levelled rock floors covered with beaten earth, and possibly covered again with a carpet,

these would be very comfortable apartments, if not exactly the "sumptuous houses" of Strabo.

**21. South Cave Excavation.** The cave was filled to within about 3 ft. of the top with debris, the upper layers of which were composed mostly of the disintegrated sandstone of the cave itself, and of soil mixed with sherds washed down from the terrace above. This upper deposit was removed in successive layers of 8 in., until 25 in. of debris had been removed when a beaten earth floor was reached. At this level there was a mixture of both rough and dressed blocks of sandstone. Some of these appeared to form a closing wall across the front of the cave, while others formed a crude circle about 3 ft. in diameter which was probably a hearth, as there were traces of carbon inside the circle. This stage represents the latest occupation of the cave by squatters. For this final stage in the history of the cave see pl. XVI, 1. It is typical of the manner in which these ancient excavations are utilised by the local people until the height of the natural and animal deposits ceases to allow of head-room, and the cave is abandoned.

About 6 in. above the rock floor the original occupation level was reached. This deposit contained a few sherds, fragments of Roman glass, a basalt corn-rubber, and a whetstone (pl. XV, 13, 23). But the most important find was a plaster mould for a female head in relief (pls. XXXIX, XL. For description and comparative study see p. 30).

**22. East Chamber Excavation.** The top debris consisted chiefly of dressed and undressed blocks of sandstone from the collapse of the walls, and judging by the quantity removed, the walls must have been originally not less than about 8 ft. high. There was also a good deal of spill from the slopes above the chamber, and nothing could safely be attributed to the chamber with the exception of material from a compact deposit which lay to a depth of from 4 to 6 in. above rock floor. The bottom 2 in. of this deposit consisted of rammed earth which smoothed out the unevenness of the rock cutting.

The only object of special interest recovered was the upper part of a model altar in green sandstone (pl. XV, 12). Part of a handmill, two stone weights (see p. 16), a basalt corn-rubber, and a slip of polished porphyry are illustrated on pl. XV.

A fragment of millefiori (pl. XXXVI, 28), the

upper half of a Roman terra cotta lamp (pl. XXXVI, 18), and a quantity of sherds which included a number from the painted bowls, complete the significantly meagre list of objects recovered from the occupation levels of the chamber.

**23. The Area to the East and South of the East Chamber.** The clearance round the complex of walls to the east of the East Chamber produced a quantity of sherds which are discussed below (see p. 18). A mass of iron, some 3 or 4 lb. in weight, was found just inside the front face of the limestone wall. The mass was roughly conical in shape; it split up into laminations when disturbed. It may have been the spike from an iron-shod pole. At the back of the chamber is a raised rock platform, and from the covering of beaten earth a small bronze coin, a Gaza issue of Hadrian, was recovered in close contact with the large fragment of a bowl (pl. XXIX, 86).

**24. Tomb Excavation.** At the bottom of the shaft there was about 2 ft. of debris, and as this was undoubtedly mixed with intrusive material, a distinction is drawn between it and the material from the loculi. Objects from the bottom of the shaft are lettered "T", those from the loculi "T.I/6". The debris consisted of dust and disintegrated sandstone, with which were mixed in utter confusion sherds, human bones, and fragments of wooden coffins. The tomb had been rifled, and there is reason to suppose that this desecration had taken place shortly after interment. Each loculus had been methodically cleared, beginning with the two nearest the shaft, and the unwanted material thrown back, so that when the job was completed loculi 1 and 2 were almost empty while 5 and 6 were piled high; for this reason most of the contents of the tomb were found in these last two loculi. The remains of 6 skulls were found, three too broken and decayed to be worth moving; one though slightly flattened, was otherwise well preserved and came from the bottom of loculus 6, and with it were two others badly crushed, and a quantity of bones. The sacking of the tomb had been most thorough, but by sifting all the debris as it came out the necklace (pl. XXXVI, 2) was recovered, and also a turquoise blue opaque glass bead crudely cut into the form of a scarab. The most significant finds for the chronology of the tomb are the fragments of Roman pottery lamps.

An examination of the wooden coffin material was instructive both as to the original form of the coffins, and as to the method of their construction. The sides of the coffins were built up from strips of wood about 3 in. to 4 in. wide by  $\frac{3}{4}$  in. thick, and the strips were joined along the edges by dowelling. The wooden dowel pins were approximately  $\frac{1}{4}$  in. in diameter, and the carpentry was generally excellent. Some larger pieces of wood were found to be curved and this was at first presumed to be due to warping, but the finding of a number of such pieces with a proportionately larger number of straight pieces, showed that the curvature was deliberate and was produced by artificial (perhaps steam) bending. The coffins were, therefore, of a type with a rounded end, and the appearance of the best preserved pieces suggested that they were made of cedar.

A piece of dressed and decorated alabaster from the bottom of the tomb shaft (pl. XV, 20) is of unknown use.

**25. Relative Date of the Tomb Robbery.** The first significant fact with regard to the tomb is that the covering slabs were still in position, and also, that the lower side nearer the terrace edge was still packed up with stone chips. No Arab plunderer would hesitate to remove the slabs and push them aside and eventually carry them off as appears to have been done with those from the number of similar shaft tombs in the immediate vicinity, where in every case there is no trace of the slabs, and a pile of debris above the mouth of the shaft shows the plunderers' method of going to work. The history of the completed bowl (pl. XXVII, 49) shows that the plundering took place soon after the original interment, and before the bodies had entirely decomposed. This bowl, when recovered from loculus 5, was complete with the exception of a wedge-shaped piece missing from the shoulder up to the rim. The bowl was excellently preserved and quite clean including the rough edges from which the piece was missing. While sorting the pottery subsequently, two fragments of the same rim form were found to complete the bowl, but these pieces were much discoloured and were impregnated with organic matter. The bowl must have been cast aside as of no value, and the pieces becoming detached came into contact with organic matter,

while the rest of the bowl escaped the same contact. The rarity of small finds from the tomb also suggests an early date for the robbery, when objects of value would have been found in position on the bodies.

### CHAPTER III

#### DESCRIPTION OF PLATES

**26. I.** Sketch map of Petra.

**II. 1.** Summit of Umm al Biyara, looking south towards Ath Thugra, the southern approach to Petra. The view-point is marked 1 on the map.

2. Summit of Umm al Biyara, looking north-west down Wady as Syagh. The view-point is marked 2 on the map.

**III. 1.** Remains of the aqueduct spanning Wady Fara ad Deek. Position marked on the map. (Photographed April 6, 1937.)

2. Wady Musa in flood. (Photographed from Al Habis, April 10, 1937.) For a description of a similar flood seen from the same spot, see KENNEDY, *Petra*, p. 53.

**IV.** Plan and section of North Cave.

**V. 1, 2.** North Cave. Diagrams of the niches in the walls of the cave and the courtyard.

3. Diagram of the courtyard showing the walls of the courtyard cut out of the side of the hill.

4A. Diagram showing the steps from the courtyard into the cave on the south side. 4B. Diagram showing that on the north side the steps have either never been made or have been worn away.

5A, B. Detail of dry-walling built across the mouth of the cave.

6. Section of courtyard and cave, to show position of the objects found.

**VI. 1.** North Cave. Showing the rock at the side cut away to form the courtyard. The measuring-stick not only gives the scale, but shows the stone rebated for the door.

2. North Cave. Showing the remains of the wall on both sides of the entrance.

3. North Cave. Showing width and depth, and also the difference in level between the cave and the courtyard.

**VII. 1-3.** North Cave. The five cup-holes in the courtyard.

4. South Cave Complex. The chequer square

for a game, cut on the underside of one of the covering slabs of the tomb.

5. Three stone implements picked up on Umm Seihun.

**VIII.** One of the peculiarities of the bowls is that they, with one exception (no. 83), stand on a foot. The foot has the characteristic smallness of the Iron Age shapes. In some cases, e.g. nos. 13, 15-22, the base is so small in comparison with the spread of the bowl at the top as to make the vessel appear top heavy. The drinking cups vary considerably in shape, but are generally carinated. The types only are given here, though more than one specimen of each kind was found. The number of such cups, which were found both in the North Cave and in the Town Dump, was very great, and shows that this was the commonest of all the household vessels and the kind most commonly abandoned as being of the least value.

The straight-sided two-handled bowls (nos. 24, 25) and the carinated two-handled bowls (nos. 86, 87) are rare and were always badly broken before being discarded.

Decoration on any of these bowls is uncommon, though on the little drinking vessels a rouletted design occurs sometimes on the base, see nos. 40, 74, 78. Occasionally the marks of the cutting wire are still to be seen on some of the bowls (no. 36), but as a rule the marks have been smoothed off in the ordinary way.

**IX.** The pottery seems to have been almost entirely for strictly utilitarian purposes. The large two-handled cooking pots are of coarse ware, quite different from the delicate fine pottery of the painted ware. The greater number of the cooking utensils were of red pottery, and all the large ones were ribbed. The bowls (1, 2, 4, 5) were rouletted, while no. 3 had a pie-crust decoration as a border below the rim. No. 9 was bought from one of the Bdul, who said that it came from As Sabra; the vertical depressions on the sides are characteristic of the Roman period, and I am inclined to think that it was an imported piece and not of Nabataean origin. Spouted jugs occur, but are fairly rare; examples are nos. 13 and 37. One of the most characteristic pottery forms of Petra are the bottles (nos. 47-52). They are never of any great size, nor more than a few inches in length. The size and shape suggest that they were intended to hold some precious fluid,

probably perfume. Less characteristic, though still common, are the jugs with long narrow necks. These again are probably for perfume. The pilgrim bottle (no. 53), is peculiar for the setting of the neck. This is so roughly done as to show that the potter was unused to the shape and found a difficulty with the neck. The black and red stand (no. 54), was perhaps for setting a cooking pot upon.

**X.** 1, 2. Knob handles are not common in Petra; two only were found. The loop-handle set vertically is the characteristic form, and of these there were a considerable number. Special types are illustrated here, which include both the flat and the rounded handle. The fluted ornamentation was the most common and ranges from the slight indication of no. 18 to the deep indentations of no. 37. Horizontal loops, nos. 7 and 8, are always plain. The most interesting and unusual type of handle is seen in nos. 28 and 29, where there is a depression at the top of the handle, close to the rim of the vase, to accommodate the holder's thumb while his fingers close round the stem of the handle. This is a useful innovation which does not occur elsewhere in the Near East.

**XI.** 1. The twisted handle, imitating a rope, is not uncommon in Petra, and always occurs with a fine type of pottery. In this instance the cup, which may originally have had two handles, has an ornamented base. The ornament consists of a spiral, which seems to have been made by hand, and an incised design made by a roulette. A similar roulette design is on the underside of the curve of the cup.

2. Part of a lamp with rosette design.

3. Fragment of a decorated bowl. As this was found on the surface it is of no value for dating purposes.

4. This curious fragment is decorated with raised bands and a lump of irregularly oval shape. The lump and one of the bands are covered with small incisions apparently made with a sharp pointed stick or tool.

5. Decorated handle of a lamp.

6. The curved bar of pottery is peculiar. Its use is conjectural, for it is certainly not a handle yet the ornamentation on it shows that it was intended for some definite purpose and was not a waste piece.

7. The lid of red pottery was for covering a small vessel.

8. A peculiar type of spout and rim.

9-12. Forms of handles.

13-16. Bowls with stamped decoration.

17. Rim of large vessel with "pie-crust" decoration.

18. This fragment is peculiar in having a bright red surface and a black core. In general the Nabataean pottery is fired evenly right through.

19. A pottery stand, possibly for a cooking pot. It stands only on the narrower surface, which one would naturally have thought to be the upper part to hold the pot.

20. The fragment has a raised design. The colour of the pottery is unusual.

21. The base of a small vase or cup. Here again the pottery has not been fired evenly, but has a black core. As the ware is very fine it is possible that the incomplete firing is intentional.

22, 23. Spiral bases of cooking pots are not uncommon in the late pottery of Minorca. It is difficult to know why the potter used a spiral instead of the easier concentric circles, as in no. 27. A progressively widening spiral always shows a great degree of skill on the part of the potter and seems rather wasted on the base of a cooking pot.

24. A peculiar type of vessel with an inside knob-handle and a circular orifice with heavy rim. The diameter shows that this was a fairly large vessel with straight sides and out-turned rim. What it was used for is unknown, for the sides are not thick enough for a crucible, and the orifice and inner handle show that it was not for cooking.

25. A vase with a peculiar base, which appears to have been inserted after the sides and stand were finished.

26, 27. Bases of cooking pots. Both, like the painted Iberian pottery vases of Minorca, have a hollow in the outside of the base with a small knob in the middle. No. 26 has a spiral in the middle of the base inside, but no. 27 is plain inside.

**XII, XIII.** (The numbers on these two plates run consecutively.) The designs on the painted pottery were painted in manganese, which gives a variety of shades of dark-red, purple, brown, and black. The black was almost invariably confined to the coarser ware; the finest pieces being usually painted in red. The designs were generally floral or some arrangement of spots. The only exception is the large bowl from the South Cave complex, which is described on p. 24. This has a bird and an animal, and its

occurrence shows that the Nabataeans, unlike their compatriots the Arabs, had no objection to using living creatures as motives of decoration.

The seaweed-like border of many of the designs (nos. 2, 5, 6) seems to indicate a wreath round the edge of the bowl, possibly of the plant which is seen again in nos. 10A, 14, 17. It has been suggested that the large leaves, such as those in nos. 10A, 14, 17, and 20, are intended for vine leaves. This would certainly be in keeping if the bowls were for offering to the god Dusares, to whom the vine was sacred; but the form of the leaves is so degenerate that it is impossible to identify them with any accuracy. The same may be said of the lanceolate leaves in nos. 1B, 3, 7, 8, 11, and 20, and of the heart-shaped leaves of nos. 9 and 13A. The peculiar forms on nos. 30-32 and perhaps of 44 and 54 are, I think, intended to represent the seed vessels of some local plant. It is tempting to identify nos. 33A, 34, and 41 as feathers, but the same type of lines is often seen where they are obviously not feathers, e.g. nos. 39, 46, 50, 57. Spots play a large part in the designs, which are sometimes composed exclusively of spots of varying sizes; a good example of this form of decoration is no. 65A. Criss-cross lines were also in great favour, nos. 68, 69, and 74 show the method of combining them with spots to form a pattern to cover the whole surface. A kind of guilloche pattern is also found, as on nos. 46, 50, 59, and 60; it is possible that no. 58 is a guilloche or a degenerate spiral. The paucity of invention in the designs seems to show that the vessels were intended for religious purposes, the designs being therefore purely conventional and copied from potter to potter until the original meaning was entirely lost.

**XIV.** Nos. 1, 2. These are short handles of bone; they were turned on a lathe.

3. A roundel of bone, perhaps for inlay.
4. Bone spindle whorl.
5. Bone tool, of which the point was broken off anciently.
6. Iron handle with loop.
7. Iron nail, round section.
8. Bone roundel. Probably for inlay.

All the bone objects were found in the Town Dump.

9. Fragment of blue glass vase with raised decoration. This was of blown glass, the raised decoration was the same colour as the body of the vase.

10. Stone stand.

11. Piece of flat stone with incised signs. This may have been merely a practice piece.

12. Fragment of carved stone. The fragment is so broken that it is impossible to say what it may have represented.

13. Part of base and side of bowl of opaline cut glass. Fragments of cut glass are not uncommon in Petra. Glueck's excavations at Et Telah show that the Nabataeans made both coarse and fine glass. (*Bull. of American Schools of Oriental Research*, 1934, p. 6.)

14. Spindle whorl of stone.

15. Piece of decorated pottery, possibly head of a figure of Bes.

16. Piece of flat stone with irregular lines incised.

17 and 20. Elevation and plan of stone tripod. Tripods of this type were common in Palestine in the Bronze Age, and apparently survived in Transjordan until the end of the Nabataean period.

18. Piece of natural limestone of which the base has been artificially smoothed to allow it to stand. It was probably kept because it had some resemblance to a human figure.

19. A stone pedestal. The hollow in which the figure was set is an inch deep. There was no trace of any figure, but it is known that under Greek influence the Nabataeans departed from the Semitic custom of abhorring all representations of human beings and made statues of their divine kings.

21. Spout of stone mortar.

**XV.** With the exception of 10-12, 14, 16-21 on pl. XIV, objects of stone from the combined excavations of the North Cave and the South Cave Complex are on pl. XV. In the main they consist of handmills for grinding corn, and a number of stone rubbers for use with the mills. With one exception all these mills are from the North Cave, and this fact together with the finding there of numerous other stone objects, suggests that the owner of the North Cave was a dealer in such wares; he may, of course, have been a miller.

1. A handmill of green sandstone in tripod form. The sole of each foot is curved slightly upwards towards the centre of the mill instead of being flat. This would probably make the mill more adaptable to a rough surface. The body of the mill is strengthened by a rib from the centre of the underside of the body to each foot. The outside of the body and the

feet have incised decoration, the top of the rim is denticulated. There is a spout, similarly ornamented, but with a channel cut in it which is so shallow as to be useless, and the spout therefore is practically skeuomorphic. Complete, the inside much worn.

2. Large handmill of green sandstone; tripod form. In two large fragments; nearly complete.

3. Plain disk millstone of cream sandstone. A rudimentary handle at one side. Complete.

4. Bowl-shaped handmill of basalt; tripod form. Divided feet; one fragment of about half the original.

5. Deep straight-sided handmill of basalt. Three flat rudimentary feet; a knob on one side of the rim. Two fragments.

6. Small disk millstone of limestone; complete.

7-11, 13, 14, 16, and 25 are corn-rubbers for use with the mills. No. 9 is of limestone, no. 10 of sandstone, and no. 14 of tufa; the remainder are of basalt. No. 25 has been fashioned with depressions round the outside for the fingers, and one on top for the forefinger; it fits the hand very well.

12. The upper fragment of a model altar of green sandstone. On each of the long sides is carved a female head. The figures may have been a pair of caryatids. A similar model altar from Palmyra is described by SEYRIG (*Syrie*, 1936, p. 257) as *une pyrée*. There is a striking resemblance between the Palmyrean model altar (Fig. 9) and the bronze model of an Assyrian tower in the British Museum, each is surmounted by the type of battlements from which the Nabataean crowstep ornament is derived. The example from Palmyra is dated to about the last quarter of the second century A.D.

15. A slip of polished red porphyry. The dressed edge is slightly bevelled. A number of similar fragments of different sizes may be picked up from the surface at Petra, and there is no doubt that porphyry was used for ornamental purposes in the finest buildings, but probably not before the Roman conquest.

17 and 23 are whetstones; no. 17 of basalt and the other of sandstone.

18. A disk of flint with a highly polished surface, probably used for burnishing.

19 and 21. Two weights, nos. 5 and 8 in the table below.

20. A piece of alabaster dressed and ground.

It is decorated on both faces with shallow incised lines and a border of drilled circles. There is nothing about it which suggests the use to which it could have been put.

22. Piece of a water channel of green sandstone, possibly a water spout for a roof.

24. The upper part of a small alabaster vase.

### 27. Note on the Weights by Sir Flinders Petrie.

Eight weights were found in the excavation at Petra. Two artificially formed weights (nos. 5 and 8 below) are from the East Chamber. The remainder, consisting of a group of six pebbles, were found together in the North Cave. Five of the weights consisted merely of natural pebbles, selected as approximating to a definite standard. Three of these were of fine-grained sandstone (S), and two were of quartz (Q).

Two other weights were artificially formed, tall conic and cube, respectively. They had been ground to shape, one in gritty white limestone (L), and the other in white quartz (WQ).

The remaining one was a pebble of banded white limestone (B).

No.	Form.		Grs.	Grs.
1	Flat pebble ..	S	1146 ÷ 8	143.7
2	Round pebble ..	S	1186 ÷ 8	147.6
3	Flat pebble ..	S	1420 ÷ 10	142.0
4	Quartz pebble ..	Q	719 ÷ 5	143.8
5	Tall conic ..	L	2975 ÷ 20	147.7 (pl. XV, no. 21)
6	Quartz pebble ..	Q	755 ÷ 5	151.0
7	Oval pebble ..	B	1534 ÷ 10	153.4
8	Cube .. ..	WQ	2180 ÷ 10	218.0 (pl. XV, no. 19)

All these are probably the Egyptian *qedet*, except the last (no. 8). This appears to be ten Palestinian shekels (Maccabaeian unit 220 grs.). Perhaps nos. 1 and 2 should be regarded as ten *peyem* (Palestine), but there is no other of that unit, and they may represent eight *qedets*. FLINDERS PETRIE.

28. XVI. 1. South Cave from north stairway, the latest occupation level after the removal of debris.

2. South Cave, from north stairway, the earliest occupation level.

3. South Cave, the walled-up south stairway.

4. South Cave, looking down to the partitioned ledge, Wady Abu 'Olleqah below.

5. South Cave, the North Stairway from the ledge.

6. South Cave, remains of the limestone wall built against the rock face, and closing the bottom of the south stairway.

7. South Cave, the continuation of the north stairway. See pl. XX. E/F.

**XVII.** 1. The tomb-shaft from the south, with the four covering slabs in position. The Arab workman is pointing to the opening made by the detachment of a slab corner, by which means robbers gained access to the tomb.

2. The tomb-shaft from the south, with the covering slabs removed and the altar to the right.

3. Interior of the tomb looking towards loculus 2 showing debris, and veining of the rock walls.

4. Interior of the tomb looking west towards the shaft opening, showing toe-holes in the shaft to the right, and debris from the loculi below.

5. The tomb-shaft from above; a shallow drainage channel on the rock above, parallel with the long side of the opening.

6. The East Chamber after excavation with (a) the altar to the right foreground, (b) two superimposed rectangular stones of a pilaster in the middle, with the top stone of the opposing pilaster just visible above the wall to the left; (c) the small doorway still blocked with debris in the far corner of the room.

7. Detail of nose of altar showing pitting of the front surface produced by pickwork; and tethering hole cut through nose of altar to the left.

**XVIII.** 1. The complex of walls south-east of the altar looking due east, showing from left to right: (a) the early limestone wall; (b) the early sandstone pillar immediately below the central figure; (c) the later sandstone wall.

2. A comprehensive view looking due south showing: (a) the limestone wall, and the early and later sandstone walls to the left; (b) the excavated East Chamber with the Upper Cave doorway and window behind; (c) the altar to the right.

3. The complex looking south-west towards Umm al Biyara.

4. The excavated East Chamber looking due west, from above, with the raised rock platform visible between the Chamber and the Upper Cave to the left.

5. The East Chamber from the roof of the Upper Cave.

6. The East Chamber from above during excavation, showing the four superimposed blocks of a pilaster against the wall to the right centre.

7. The partially cleared West Chamber showing the sandstone ashlar of the back wall. The recess in the centre of this wall suggests a blocked-up cave doorway.

8. The view from the West Chamber looking up Wady Abu 'Olleqah towards Umm Seihun, and the suburb of Al Baida.

**XIX.** 1. The blocked up doorway of the Upper Cave, dressed blocks to the right (used for first partial closing) and stone chips and mud to the left (final closing). The rock face below the window shows the method of dressing with the pick. The upper half shows a series of arcs of secondary dressing, while the lower half is rough dressed with the pick aimed almost at right-angles to the surface.

2. The Upper Cave doorway and window unblocked.

3. Looking out of the Upper Cave doorway at the later sandstone wall.

4. Detail of the west face of the later sandstone wall.

5. The Upper Cave doorway from the raised rock platform. Note (a) the recess for a lamp(?) at the top of the door-jamb; (b) the cup-hole near the bottom of the stick; (c) the depth of debris, at this point about 10 ft. deep, which formerly covered the Upper Cave and the two Chambers.

6. Detail of the rebated door-jambs of the east door of the East Chamber.

7. Detail of the early sandstone pillar, showing the excellence of the material and construction. (12-in. scale.)

8. Detail of the face of the early limestone wall at pl. XX, B. (6-in. scale.)

**XX.** Plan of the South Cave Complex, showing relative positions of the South Cave, Steps, Tomb, Altar, Chambers and Upper Cave.

**XXI.** Plan of the South Cave, showing steps.

**XXII.** Plan and section of shaft tomb.

**XXIII.** Plan of East and West Chambers.



**XXIV.** Isometric drawing of the interior of the Upper Cave, showing window, door, niche, and pedestal.

**29. XXV-XXXIII.** South Cave Complex. Pottery. The pottery from the South Cave complex is shown on pls. XXV to XXXV and the illustrations follow the same order as the description of the excavations, i.e., beginning at the South Cave and ending with the sondage in the West Chamber. At the bottom left of each drawing is a provenance letter, the key to those letters is as follows:

- C. South Cave.
- T. Bottom of tomb shaft.
- T. 1-6. Tomb, loculus 1 to 6.
- E. East Chamber.

N. and P. The complex of walls to the east of the East Chamber, which shows more than one period of building activity in this region, necessitated a division of the objects found in association with them;

N. Sherds found when clearing round the base, and in the filling, of both the limestone and the earlier sandstone wall, as representing the two earliest periods of building;

P. Sherds found in association with the later sandstone wall, the passage-way between it and the East Chamber, and from the space between the latter and the Upper Cave.

- U. Upper Cave.
- D. West Chamber Dump.
- W. West Chamber.

For quick reference there is a serial number at the top left of each drawing. In the absence of a corpus of pottery for the period for the Near East, a form number is at the top right which conforms as near as may be to the arrangement followed in GARROW DUNCAN, *A Corpus of Palestinian Pottery*.

The bulk of the pottery consisted of mere fragments, many of which, however, were of sufficient size to permit of reconstruction in drawing. Where the vessel is complete that fact is noted in the description of the materials (p. 23). On the left of the centre-line in each drawing is the section, and the exterior of the vessel is shown on the right. Any special feature of the mouth or interior, or of the base, is shown respectively above and below the drawing. Particular attention has been paid to the drawing of the sections, especially the rims, and to ensure accuracy, all measurements for the pottery were

taken to the nearest millimetre. It is felt that such detail will prove of value for reference when more work is done on Nabataean sites, and when more attention is paid, than has been the case hitherto, to the common domestic wares of the period.

Among types which must be considered as indigenous to Nabataea, if not to Petra itself, are others which appear to be related to Roman forms; these are dealt with first.

**Form 18.** Nos. 114-5-6-8.

Of this class of vertical sided, rouletted bowls, four are from the West Chamber dump, and two from the East Chamber. Unfortunately no fragments extend to the base, but no. 115 shows a definite outward turn at the bottom of the fragment which suggests that it had a base, and this may have been the case in all bowls of this type. The ware is good, but without glaze, and is not, therefore, to be classed with true terra sigillata. Nos. 114, 116, and 118 resemble Dragendorff Form 32. No. 115 is peculiar in that the walls of the vessel are flattened in four stages. With regard to the rouletting on this class of pottery, and the extension of the practice to terra sigillata, OSWALD AND PRYCE say: "The practice of rouletting varnished and coarse ware, frequently found throughout the first century, probably exerted an equally important influence, and a connecting link between its application to non-sigillata and sigillata types is forthcoming in a bowl, coloured red-brown, which was found in a pit beneath the Imperial Palace at Trèves (dated to about A.D. 100)"—*An Introduction to the study of Terra Sigillata*, p. 221.

No. 117 is not rouletted, and, though resembling the form of the rouletted bowls, is not of the same class. The flat in-turned rim is uncommon.

**Form 20.** Nos. 83, 91.

No. 83 resembles Dragendorff Form 17 except for the body below the carination, which, in the Dragendorff form, becomes horizontal on the inside. Immediately below the carination there is faint single notched rouletting. No. 91 has a pair of pinched ribbed handles, which are so small that they could have served only as knobs for the thumb and finger.

**Form 28.** Nos. 71, 72, 96-8, 122-6.

This class of deep bowls, with the mouth wide in proportion, is usually with two handles. In the examples illustrated, the handles are drawn only when they were actually present, though others

shown without handles suggest from their forms that they originally had handles also. The type was common long before the Roman period, so that these examples are neither characteristically Roman nor characteristically Nabataean. The one exception is no. 72 which belongs to a class of thin, hard, smooth ware, often incised with delicate patterns, which, with the painted bowls, forms a distinctive contribution on the part of the Nabataeans to ceramic art. A number of vessels of different types from Petra display a fondness on the part of the potter for elaborate rims, and if this is a Nabataean characteristic, then nos. 98 and 122 might be classed as Nabataean.

**Form 31.** Nos. 9, 10, 73, 74, 128, 147.

The jugs with one handle are wider at the bottom, and also represent a type in common use over a considerable period of time, e.g. no. 128, is of a typical Middle Bronze Age form. No. 73 is rouletted, and has a ribbed handle pinched up at the bottom as are many of the handles on Form 32, and as on Form 20, no. 91. No. 73 is unusual in that it is faintly ribbed on the inside, while the outside is smooth except for the rouletting.

**Form 32.**

The round bottomed, two handled, ribbed cooking pot was found in every part of the complex, and is the commonest of all Roman domestic pottery types. The development of this class of vessel can be traced continuously from the beginning of the Early Iron Age, through the classical period, up to Byzantine times. During the later stages of this development, the horizontal ribbing of the body, which began towards the close of the first century B.C., became progressively closer and deeper. A comparison of the rim-forms also suggests that there was a gradual change in the angle of the rim. The globular body of Form 32 terminates at the top in a rim forming a sort of collar. This collared rim varies in depth and moulding, though it is always shallow in comparison with the depth of the whole body. The moulding of the rim begins in simple fashion (no. 25), and tends to become more elaborate (no. 104), and at the same time the rim, beginning with an outward splay (no. 25) progresses through the vertical (no. 56) to an in-turned form (no. 76). It is suggested that, generally speaking, the out-turned is the earlier and the in-turned the later form of rim. From the twenty-three

examples illustrated the following table was prepared:

<i>Serial Number</i>	<i>In-turned, Out-turned or Vertical rim.</i>	<i>Provenance.</i>	<i>Tentative chronology of the different parts of the complex.</i>
11	I	South Cave.	Late.
12	I	"	"
25	O	Tomb.	Early.
32	O	"	"
39	O	"	"
52	I	"	"
53	O	"	"
56	V	"	"
75	O	East Chamber	Transitional
76	I	"	"
77	O	"	"
78	I	"	"
100	O	"	"
101	O	"	"
102	V	"	"
103	I	"	"
104	I	"	"
108	V	"	"
129	I	West Chamber	Late.
130	I	Dump.	"
148	O	West Chamber	Early.
149	I	"	"
150	O	"	"

Of four examples from the late period, all are in-turned. In the East Chamber, which I consider to be later than the Tomb, but which must be earlier than the West Chamber dump, there are ten examples of which four are out-turned, four are in-turned, and two are vertical. Of nine examples from the Tomb and West Chamber, which are the earliest parts of the complex, six are out-turned, two are in-turned, and the ninth is vertical.

The study of the development of this class of vessel, by far the commonest pottery form on every site in the Near East in any way connected with Rome, is worth pursuing for that very reason; especially when, as happened here, there may be a complete, or almost complete, absence of coins or terra sigillata from which to establish a chronology.

**Form 47.** Nos. 13, 106.

No. 13 is the neck of an amphora with plain torus moulding.

**Form 48.** Nos. 14, 40, 41, 58, 79, 80, 109, 132, 133.

From the number of fragments of amphorae found, such vessels were common, and, no doubt, were largely used for the storage of wine and oil. Unfortunately not a single example had the handles attached, though detached handles, usually of a heavily ribbed type, unstamped, are scattered about the surface at Petra. One of these, similar to pl. X, no. 36, was found in the West Chamber dump. No. 18 has an internal ridge, probably to support a cover or strainer; the steep inward slope of the neck is unusual. Many of the collared necks have elaborate mouldings as in no. 41.

**Form 58,** No. 15 and **Form 67,** Nos. 18, 152, 155-160.

These two forms embrace a class of wares which seems to have been made expressly for the storage and supply of cooled drinks. For this reason the material of which they are made is a soft porous clay, which, when lightly fired, produces a pale green exterior to the vessels, while the inside of the body is a pale greenish buff. The contents are cooled by the evaporation of liquid sweating through the porous body to the outside, a principle which is commonly used throughout the East to-day in the manufacture of similar wares. That they were used for the cooling of wine, or beer, is shown by the presence of a strainer at the bottom of the neck of no. 160, which was formed by piercing a thin drum of clay. Its position shows that the liquid was strained before entering the body of the vessel. No. 160 is a reconstruction of a complete vessel founded (a) on a top and base, which from an examination of their materials appear to be from the same jar; (b) on the body form of no. 158; and (c) on a spout or pair of spouts similar to no. 157. The position of the spout in no. 160 is deliberately placed below the middle line of the body because an examination of the spouts nos. 18 and 157 showed, in both examples, that finger-mark rings on the inside of the pieces of the body to which the spouts were attached, made when the vessel was spun, were of such a curvature that both pieces (and therefore the spouts) must have come from the lower part of the body. This otherwise unaccountable position of the spouts must be due to the fragile nature of the ware, for if the spout were in the upper part of the body it would be necessary to lift the vessel by the neck (the handles would certainly not support the weight, and must have been purely ornamental), and to tip

it forward to make the liquid flow. This action, with the softness of the clay and the fact of the weight being mostly at the bottom, would probably cause the neck and body to part. By having the spout in the lower half, where it would have to be fitted with a removable plug, the removal of the latter would cause the liquid to flow by the pressure of the liquid above the spout, without the jug having to be lifted at all. Vessels with the spout below the middle are known elsewhere in other periods. One such is in PETRIE, *Anthedon*, Pl. XXXVII, 60R, dated to about the fifth century B.C. This example, however, was sufficiently well baked to allow of its being lifted by the neck, and the spout was so small that the closing of the neck was no doubt sufficient to stop the flow of liquid. The double spout no. 157 has one spout stopped, so that only one was for use, the other being a dummy. Similarly, the potters of South Palestine to-day make water bottles with two and three spouts, only one of which is open, for use on ceremonial occasions. The neck and shoulders of this ware are decorated with bands of incised wavy lines, made with a fine comb, notches are also cut in the shoulder as in no. 158, while no. 160 has a form of rouletting which leaves diagonal columns of chevrons. Both nos. 158 and 160 have notched rims, and another form of decoration (no. 152) is a strip of clay, triangular in section and notched, which is pressed on the outside of the body in vertical strips. The notching on the rims is similar to that on a vessel of different material cf. Pl. XIIIa, No. 5 in T. May, *Roman Pottery in the York Museum*.

The following pottery forms show less of Roman and more of Greek influence and some, notably the thin painted bowls, have an individuality of their own which characterises them as purely Nabataean.

**Form 68.** Nos. 16, 17, 34, 63, 82, 110, 111, 113, 136, 137, 139, 153, 154.

From the number of examples found, this class of single handled, globular, necked flasks was in fairly common use. It probably served the same purpose as the Greek oinochoe, that is, for the ladling and pouring of wine, and in this connection the necks, and particularly the flaring rims of nos. 16, 63, 110, 139 and 154 are more Greek than Roman in style. With the exception of no. 63, this group of flaring mouthed flasks is made of that specially fine red ware with a polished surface, often rouletted, e.g. no. 139, which appears to be a contribution to

ceramic art by Nabataean potters. Both nos. 34 and 137 are trefoil mouthed, with faintly ribbed bodies. The handle of no. 34 is deeply ribbed, while the handle of no. 137 is slightly flanged at the top and pinched below. No. 113 has a slightly undercut collared rim, and a break nearly halfway down the body as if it had been made in two portions. A similar vessel from Throgmorton Street, London, now in a private collection, is attributed to the first century A.D. No. 136 has a vertical moulded neck. These last two are both serviceable and ugly, and on that account most closely resemble Roman types.

The most characteristic of all Nabataean wares is the shallow bowl illustrated by Forms 3, 6, 10, and 13. This class of bowls is divided into two groups; (a) bowls with painted interiors; and (b) bowls which are plain, except that in some cases the outside of the rim is painted. From the examples found, as well as surface finds examined, there appears to be an invariable rule that the plain bowls have bases, and the painted bowls have not. A feature common to both groups is the hooked in-turned rim which gives a clue to their use and to their derivation. A shallow bowl, with plain in-turned rim, is commonly found on Greek and Hellenistic sites throughout the fourth and succeeding centuries B.C., and was most commonly in use in North Sinai from about 184 to 64 B.C. (PETRIE, *Anthedon*, Pl. XXXIII, 22K). The same type of bowl of hard, finely levigated buff clay, decorated with bistre paint, was in use at Petra during the same period, as sherds of this ware found in the Town Dump testify.

That the Nabataean bowls developed from this Greek type seems most probable. Generally speaking both types were too small for food, and they were no doubt used for drinking, and, for this purpose, the in-turned rim was intended to prevent the spilling of the liquid. It has been suggested that the painted bowls were used for ceremonial purposes only (p. 2), and that, after the offering had been made, the bowl was smashed. If this were so, there would be no necessity for a base, for the bowl would be used but once, and from the time of its being filled with the offering to the time it was smashed, it would not leave the hands of the donor. On the other hand, the plain bowls with bases would appear to be for general domestic use.

**Form 3.** Nos. 3, 4, 64, 65, 84, 140.

Nos. 3 and 4 are painted sherds of the same form

as no. 65. No. 64 is made of exceptionally thin pottery, and though there was no trace of painting on the small fragment from which the drawing was made, it was most probably decorated in the same style as no. 140, itself an example of almost paper-like thinness. No. 64 is exceptional in being the only example without an in-turned rim. Both nos. 65 and 84 are characteristic of the commonest class of Nabataean painted bowls, with regard to both form and decorative motifs.

**Form 6.** Nos. 1, 2, 21, 44, 60, 61, 66, 67, 85, 87.

No. 2 is an example of the most common form of the plain bowls. The bases of these bowls are usually of a shallow ring-base type. Some examples have the outside of the rim painted a dull red or bistre as nos. 60 and 61. No. 66 is so thick and coarse generally that it appears to be the product of a potter not skilled in the form, perhaps a trial piece of an apprentice. No. 67 has a more elaborate rim than usual, and the underside of the base is ornamented with radiate thumbnail impressions, a device which was also adopted on some of the small drinking cups (cf. no. 8). Nos. 21 and 44, though included under the same form, are not related in any other way to the class under discussion. Like the specimens of Form 18, they are pseudo terra sigillata, both resembling somewhat Déchelette's Form 71.

**Form 10.** Nos. 68, 86.

These two bowls are deeper varieties of Form 3. No. 86 was found in association with a small bronze coin, a Gaza issue of Hadrian. The fragility of these bowls would militate against their chances of survival for any length of time after manufacture; the bowl and the coin must therefore be considered to be roughly contemporary. Hadrian, according to, MATTINGLY (*Coins of the Roman Empire*, Vol. 3, p. xii) issued coins in Syria about A.D. 119-124, and again *circa* 125-126; so that it is clear that at least thirteen years after the annexation in A.D. 106 the Nabataeans continued to make their painted bowls.

**Form 13.** Nos. 43, 46, 141.

No. 43, apart from the slight kick halfway down the body, most closely resembles the Hellenistic prototype mentioned in the introductory paragraph to these bowls (p. 21). The range of motifs employed in decorating this pottery is discussed above (p. 14), but attention is drawn to the significant fact that the finer ware, with the most delicate and original decoration, occurs only on vessels from the earlier

parts of the South Cave complex, i.e. the Tomb, and the bottom level of the West Chamber. No. 45 is the painted interior at 2:3 scale of no. 46. There is no attempt at symmetry, and the design crosses the bowl direct without conforming to its shape in any way. Bearing in mind the familiarity on the part of the Nabataeans with the Aqabah coast, the design suggests an impressionist view of nets, squids, seaweed and air-bubbles. The centre of the flattened base of the bowl is cut with concentric circles. No. 141 is an almost hemispherical bowl of very thin ware. There is a delicate wreath pattern running round the inside of the bowl, with, on the outside, two shallow incised wavy bands, surmounted at the extreme rim with two finely cut grooves.

**Form 15.** No. 5.

A plain steep sided bowl with simple penthouse rim.

**Form 21.** No. 142.

This plain deep bowl is of the fine very thin ware found only in the Tomb and the bottom levels of the West Chamber.

**Form 22.** Nos. 6, 7, 8, 47, 48, 62, 69, 90, 92, 93, 119, 120, 121.

One of the commonest classes of pottery at Petra is that embracing a series of small steep sided cups. They were found in every part of the excavations, in all periods, and were obviously, therefore, in general daily use. That the Nabataeans were in the habit of drinking is attested by Strabo. It seems most probable that these small cups were used for some strong drink, possibly a spirit, distilled from the wine which they undoubtedly produced from the terraced vineyards at what is now the site of Eljy. All the cups have bases except no. 7. With the exception of nos. 69 and 90, all were made of fine red ware. No. 8 has radiate thumbnail impressions on the base, and no. 62 has a red painted band round the outside of the rim. No. 48 is much larger than the rest and cannot have been used for the same purpose. It was found complete, and for this reason it can be definitely assigned to the Tomb. It bears a strong resemblance, both as to form and to the practice of painting the outside of the rim, to those bowls with in-turned rims which are so common during the first four centuries B.C.

**Form 23.** Nos. 49, 70, 94, 95.

No. 49 is complete after missing fragments were

restored to it, and, with no. 48, also complete, must be considered as the most reliable pottery evidence for the date of the Tomb. No. 49 is discussed with reference to the date of the tomb robbery on p. 12.

**Form 27.** No. 143.

This little bowl or cup is of very fine red ware, with a twisted handle. Similar small handles are not uncommon on the surface at Petra, so that this vessel represents a definite type.

**Form 29.** Nos. 24, 31, 36, 38, 50, 51, 99, 144-6.

One of the most characteristic of Nabataean types is a small beaker or goblet. It is invariably made of the finest red ware, thin and polished, and the diameter of the mouth is constant at about 3 in. Whether all originally had handles it is impossible to say, but no. 146 has a thin, broad, ribbed handle, while the upper part of the body is decorated with an impressed design of palm fronds and triangles of dots which probably represent grape clusters similar to the motif used on the painted bowls. Nos. 31, 38 and 144 are similar, while no. 51 is broader than the others and is decorated inside in red paint. The elaborate spreading foot of no. 99 was made of material identical with the upper part of the body; the drawing is a reconstruction from the two parts, the height therefore is only conjectural. No. 146 has an impressed design of conventional diamond pattern which was the only example found. Nos. 24, 36, and 50 do not come within this class of goblets, and are, besides, of coarse material. Nos. 24 and 36 each has an elaborately moulded rim, and it seems strange that so much trouble should have been taken with a material which, though well baked, is distinctly coarse. With little more than the rim, it is not easy to reconstruct the form, or to suggest the purpose for which they were used. No. 50 is a one-handed, piriform goblet with a deeply wavy profile; it is always made of coarse ware, and though common at Petra does not appear to occur elsewhere.

**Form 36.** Nos. 105, 131.

Bases of tall jugs. No. 105 is made of that finely levigated buff ware which one associates with the later Greek pottery.

**Form 59.** Nos. 33, 42, 59, 81, 107, 134, 135, 151.

This series of juglets, most of which are too small to have been used for ordinary domestic purposes, were probably used for precious oils. All, with the exception of no. 107, are globular and of fine ware.

Nos. 33 and 42 are alike, and both are made of fine buff ware. Nos. 81 and 135 have the same vertical neck with spiral fluting inside, and vertical, slightly flanged handles. Nos. 134 and 151 has each a skew handle, while the latter is made of the finest polished red ware, rouletted.

**Form 74.** Nos. 19, 20, 54, 55, 112, 138.

This class of tall narrow bottles shares with the shallow bowls (Forms 3, 6, 10, and 13), and the small cups (Form 22) the position of being most representative of Nabataean wares. It is a common form, the body is almost invariably ribbed horizontally; it is made of all kinds of material, from coarse to fine. It probably derives from those small plain Hellenistic flasks of which no. 54 is an example, though superior in workmanship and the quality of its clay to the majority, which are usually rather roughly made of coarse clay. No. 54 is identical in every respect with a flask in the Palestine Museum which was found at Beth Zur. As the Hellenistic flasks were used for perfumed oils, no doubt the Nabataean bottles served the same purpose. By adding a shoulder and a handle to no. 54, a fair representation is made of the Greek *lekythos*, from which the Nabataean bottles may be ultimately derived.

**Miscellaneous.** Nos. 22, 27, 29, 30, 37, 57, 88, 89, 127.

Nos. 22 and 127 are vertical rims of coarse ware. They may be from wide mouthed amphorae, or from jar stands, or even from flat-bottomed cooking vessels. No. 127 has an internal projecting knob of which there may have been more than one originally, probably to support a cover. No. 27 is a fragment of the flat base of a vessel of terra sigillata of good red paste and red glaze. The stamp in Greek characters apparently reads Philo. No. 29 is a fragment of a vessel of probably the same form as no. 146. The impressed design of crossed arrows, of which there are traces of three rows, is interesting as this is the emblem of the goddess Neith of Sais. The arrow motif occurs again on the large painted bowl (see pl. XXXV, p. 25). No. 30 is the lid of a small vessel, probably a pyxis. No. 37 is the rim of a piece of terra sigillata of red body and dark red glaze, it is like the Ludovici form (*Introduction to the Study of Terra Sigillata*, Pl. LXIV, 1) which is attributed to the middle of the second century A.D. No. 57 is a small jar cover. Nos. 88 and 89 are examples of the finest painted pottery.

### 30. DESCRIPTION OF MATERIALS

Serial No.	Description.
1, 2	Red, fine.
3	Red, fine, bistre paint.
4	Red, fine, bistre paint.
5	Red, thin cream slip.
6-9	Red, fine, 6-8 complete.
10, 11	Red, coarse.
12	Red, hard.
13	Red, coarse.
14	Red, coarse, cream wash.
15	Pale green, soft, porous.
16, 17	Red, fine.
18	Pale green, soft, porous.
19	Red, fine.
20	Red, coarse.
21	Bright red, burnished inside and out.
22	Red, coarse.
23	Red, fine.
24	Red, coarse, brittle.
25	Red, hard.
26	Red, fine.
27	Terra sigillata.
28	Red, fine.
29	Red, fine, smooth, impressed design.
30	Red, fine, smooth, rouletted.
31	Reddish-buff, wet smoothed.
32	Red, hard.
33	Buff, fine.
34, 35	Red, coarse.
36	Red, brittle.
37	Terra sigillata, red body, red glaze.
38	Red, fine.
39-41	Red, hard.
42	Buff, fine.
43	Red, fine.
44	Red, hard, thin red slip.
45	Red, fine, bistre paint.
46	Red, fine, bistre paint.
47	Red, fine.
48	Red, fine, wet smoothed, pink wash inside, complete.
49	Red, medium fine, traces red wash, complete.
50	Red, coarse, handle missing.
51	Pale red, interior design in red.
52	Pale red, hard.
53	Red, coarse, thin black wash.
54	Buff, fine, wet smoothed, black wash, base missing.
55	Red, fine, complete.
56	Red, hard.
57	Pale red, coarse, cover complete.
58	Red, brittle, cream slip.
59	Pale red, fine.
60	Red, brittle.
61	Drab, wet smoothed, black slip on rim.
62	Red, fine, red painted rim.
63	Red, hard.
64	Red, fine.
65	Red, fine, bistre paint.
66	Red, coarse, purple wash outside.
67	Red, fine.
68	Red, fine, black core.

<i>Serial No.</i>	<i>Description.</i>	<i>Serial No.</i>	<i>Description.</i>
69	Red, coarse, white wash lower half.	138	Red, medium fine, complete.
70	Buff, fine, whitewash outside, dull red paint.	139	Red, fine, rouletted.
71	Red, hard.	140	Red, fine, very thin, bistre paint.
72	Red, fine, polished, incised.	141	Red, fine, very thin, bistre paint, incised.
73	Red, fine, brown core.	142, 143	Red, fine.
74	Red, hard.	144	Red, fine, polished.
75	Red, thin black wash.	145, 146	Red, fine, polished, impressed.
76	Red, fine.	147	Red, fine.
77	Red, fine, polished.	148	Red, medium fine, cream wash.
78	Red, hard.	149	Red, fine.
79	Red, brittle.	150	Reddish-brown, polished, rouletted.
80	Red, hard.	151	Red, fine, polished, rouletted.
81	Red, fine.	152	Pale green, porous, notched.
82	Red, hard.	153	Bright red, fine.
83	Red, fine, rouletted.	154	Red, fine, polished.
84	Medium fine, bistre paint.	155	Pale green, porous.
85	Red, fine, bistre wash outside.	156	Pale green, porous, incised.
86	Medium fine, bistre paint, with coin of Hadrian.	157	Pale green, porous, notched.
87	Red, brittle.	158	Pale green, porous, notched and incised.
88	Pale red, fine, light red paint.	159	Pale green, porous.
89	Pale red, fine, light red paint.	160	Pale green, porous, notched and incised.
90	Red, coarse.		
91	Red, medium, black core, cream slip on rim.		
92, 93	Red, fine.		
94	Red, coarse.		
95	Red, medium.		
96, 97	Red, hard.		
98	Red, medium, black core, cream slip, incised.		
99	Red, fine, black core.		
100	Grey medium, black core.		
101	Red, coarse.		
102	Red, hard, cream wash.		
103	Red, hard.		
104	Red, brittle.		
105	Buff, fine, black wash.		
106, 107	Red, coarse.		
108	Red, brown core, black wash.		
109	Red, hard, black wash.		
110	Red, fine.		
111	Red, hard, black wash.		
112	Pale red, fine, complete.		
113	Pale red, coarse.		
114-116	Red, fine, rouletted.		
117	Red, hard.		
118	Red, fine, burnished, rouletted.		
119-121	Red, fine, complete.		
122	Pale red, brittle.		
123, 124	Pale red, medium fine.		
125	Red, medium fine.		
126	Red, coarse.		
127	Red, hard, brown core.		
128	Red, medium fine, faintly ribbed, handle		
129	Red, hard. [missing]		
130	Red, orange wash.		
131	Light red, medium fine.		
132	Red, hard.		
133	Bright red, grey core.		
134	Pale red, fine.		
135	Red, fine.		
136	Light red, buff wash.		
137	Pale red, medium fine, faintly ribbed, nearly complete.		

**31. XXXIV, XXXV.** The remarkable bowl, of which fragments comprising nearly two-thirds of the whole were found, was recovered from the partial clearing of the West Chamber. The bowl is of the usual brick red, rather thicker than is usual with this ware, a matter which is not surprising in view of the exceptional diameter of about 12½ in. The bowl is slightly flattened at the bottom, not carefully, but by the potter allowing it to rest right way up when leather hard. A blue-black core extends from the bottom nearly to the rim. A series of concentric circles, cut lightly into the outer surface of the bowl, starts from the base and runs to within about 1 in. of the top, the interval between each ring varying from about ½ cm. at the base to 1 cm. near the rim. These are shown in the reflection at the bottom of pl. XXXIV.

The design is painted in a dark purplish brown, with fine lines in the same pigment filling the spaces between the motifs. A touch of the same colour runs round the top of the rim. To avoid confusion, the fragmentary nature of the bowl is not indicated in the drawing; the dotted portions show where parts of the design are missing. The general arrangement of the motifs, and the individual motifs themselves are of great interest for the study of Nabataean art and religion.

The continuous wreath at the top calls for no special comment as it is a common motif of this ware; and the triangular groups of dots, representing bunches of grapes, are also generally found on painted

Nabataean pottery. Although there is no viculture inside the Petra valley to-day, the villagers at Eljy grow more grapes than they can dispose of in the market at Ma'an, and the district must have produced very much more anciently, judging by the number of derelict terraces. But a comparison between pls. XXXIV, XXXV, and pls. XII, XIII, in which Dr. Murray has gathered together all the motifs that were found during the six weeks of research in Petra, shows that the representation of the bird and beast, as well as the two barbed arrows, is unique. The barbed tangs which form the stems for the heads of the two arrows, have not been seen elsewhere. Of the two other heart-shaped motifs found, pl. XII, no. 9 has no stem at all, and no. 13A on the same plate has a tang, but it is not possible to say whether it is barbed or not. The angularity of the tangs suggests that an arrow is intended, and not a foliate motif. In this connection the impressed arrows on the fragment of a cup, pl. XXVI, no. 29, shows that the arrow symbol was known. The crossed arrows is suggestive of the emblem of the goddess Neith of Sais.

The bird fairly clearly represents a pigeon or dove. Though the figure is not complete, enough remains to reconstruct the missing parts, and in this connection the group of fragments which includes the bird's head should, in the reconstructed bowl (pl. XXXIV), be a little anti-clockwise to the position there shown, so as to bring the bird's head into better relationship with the body, as in the reconstruction drawing on pl. XXXV. The thick wavy line under the feet may represent the ground or possibly water. The most puzzling thing at first glance is the object balancing the bird by the central palm spray. On examination of the black-and-white drawing it proved to be an ibex. It is necessary to turn the plate round, when the animal is seen to be in a most naturalistic attitude. The head is formed by three bold strokes of the brush, one of which is produced to form the ear; a simple dot in this triangle indicates the eye. Attached to one corner of the triangle, and splaying out towards the point of the arrow, are two wavy strokes representing the ridged horns. From the base of the horns the back of the neck curves outwards to the shoulder, and then turns abruptly to form two stalky legs which terminate in two blobs for the hooves. The clue to what at first sight seems a jumble is that

the head is turned to the rear over the animal's back.

It is interesting to note that the ibex, a rare beast to-day, is still extant at Petra, and the scrub-covered slope, towards which the Arab guide is looking in pl. II, 2, was pointed out by him as their breeding ground.

The space between the ibex and the shaft of the arrow is, perhaps, made rather too narrow in the reconstruction drawing, but even if the space were increased by moving the arrow slightly to the left, there would still not be sufficient room to represent the animal with the body horizontal. But there is a slight indication of a sudden downward trend of the creature's belly, showing that he stood in the position characteristic of his species, with the hind feet planted firmly on a rock at a lower level than the front feet, with the head turned back in a listening pose. It is an attitude from which the creature can spring instantly into rapid motion. The more or less vertical position of the body would thus fit into the cramped space.

**32. XXXVI.** South Cave Complex. A number of miscellaneous small objects are illustrated on pl. XXXVI. (For key to the provenance letters at bottom left of each object, see introductory paragraph of chapter on pottery, p. 18).

1. A bone pin, ringed near the top, found with the fossil spine of a sea-urchin of the Jurassic period. The two were about the same size, and were probably for the same purpose. For a similar spine, also found at Petra, see *Geographical Journal*, Vol. LXXVI, pl. 10, no. 5.

2. A necklace of bronze bells alternating with glass and shell beads, with two central bronze plaques embossed with a bunch of grapes. This motif is a common one on the painted Nabataean pottery. The arrangement of the necklace is conjectural, and two bronze plaques are suggested as there were more fragments than would complete one plaque. The bells were corroded inside, probably from the disintegrated clappers with which necklace bells of this period were usually fitted, the wire supporting the clapper passing through the top of the bell to form an attachment.

3. A plain iron finger ring.

4. A plain silver earring.

5. The half of a well-made bone spindle whorl.



6. Fragment of a sandstone figurine(?); it suggests the torso of a draped figure. It is from the Town Dump near Wady Farasa.

7. This horse's head is interesting as representative of a class of terracotta figures found at Petra which depict horses, harnessed and unharnessed. A similar head and a complete horse figure with leather trappings (*Geographical Journal*, 1930, p. 369, pls. 11 and 12) are, from the evidence of associated pottery, attributed to the third century B.C.

8. A turquoise blue opaque glass bead, crudely cut to represent a scarab. It was found at the bottom of loculus 6, but may very well belong to the necklace from loculus 5.

9. A pottery female figurine, the feet are missing and the fracture shows that it had been well baked. The arms are crossed on the breast, and there is a thick ring girdling the waist. It resembles a figurine of Ashtoreth from Tell Jezer (Gezer), (CONDER, *The Monumental History of Palestine*, p. 93).

Though a number of somewhat bizarre figures are peddled by the local inhabitants, the difference between these and the female figurine under discussion is that the modern figurines are invariably cut from soft stone and dipped in a stain to give them an antique appearance; they are also known to be made by one of the local sheikhs; whereas this figurine is of well baked pottery of a kind unknown in Petra at the present day. This figurine was purchased from one of the Bdul women who gave its provenance as the Town Dump at Al Katute.

10. A plain bronze handle probably from a trinket box.

11. A small shell pierced for a necklace.

12 to 22. Fragments (with the exception of 12 which is complete) of Roman terracotta lamps. As they form the chief data for the chronology of the South Cave complex, see Chap. IV, p. 27).

12. Plain rim; broad plain discus; rounded nozzle with slight raised ring round it; grooved handle; red clay; no glaze.

13. Base of lamp only; red clay; no glaze.

14. Narrow grooved rim; round nozzle; very shallow; coarse brown clay.

15. Broad ribbed discus with four small rosettes; narrow concave discus; rudimentary volutes; X above nozzle orifice; fine red clay.

16. Narrow rim of ovules; broad shallow discus

with concentric channels; small round nozzle; fine grey clay; dark bistre glaze.

17. Narrow grooved rim; discus decorated with a rosette; round nozzle; buff, fine; red brown glaze.

18. Broad rim; small deep discus; both with notched rays; rudimentary volutes; high pierced handle; coarse light red clay.

19. Nozzle only; buff clay; traces of glaze.

20. Nozzle only; orange clay; traces of glaze.

21. Fragment of discus only; buff clay; black glaze.

22. Red brown clay; micaceous; obverse, rectangular and central grooves.

23 to 28. Fragments of Roman glass. No. 25 is the bulbous base of a clear glass vessel the body of which was quite thin. At the edge of this piece are two incisions cut into the outer surface. In one of these cuts, which were deliberate as their rounded ends prove, was found an insertion of decomposed blue glass which must have been inserted when in a plastic state into the cut. Such a form of decoration in glass appears to be unique. No. 26 is a fragment of faceted glass. A glass beaker with faceted surface and a projecting ridge just below the bottom of the faceted surface, similar to the ridge on the piece under discussion, was found in a grave in Denmark (*Cambridge Ancient History*, pl. v, p. 9, g). A beaker similar to the Danish specimen was found at Pompeii.

28. A piece of millefiori glass, red flowers on a cream ground. It is most probably from the almost horizontal rim of a large dish of Roman ware of a type known during the first and second centuries A.D.

**33. XXXVII, XXXVIII.** The limestone cap in the region of Petra supports a sparse scrub, and wherever this surface was explored, primarily in search of pottery, there was abundant evidence for early flint-working.

A number of flint artifacts, found at Petra during the first week of reconnaissance in the neighbourhood, are illustrated on pls. XXXVII and XXXVIII. Three implements, pl. XXXVII, nos. 3, 1, and 8, are also shown together on pl. VII, 5. All the artifacts found are surface finds; they are numbered consecutively through both plates. No attempt has been made at typing them, but a rough division has been made between the larger implements on pl. XXXVII and the smaller on pl. XXXVIII. All on pl. XXXVIII

are flakes, with three exceptions. Provenance letters are at the bottom left-hand in each drawing.

Key to provenance letters:

H.—*Dab't al Hama*. A slope above Wady Musa, on the left hand as one leaves Eljy for Petra.

R.—*Ar Ramla*. A small massif guarding the right-hand entrance to the Sik.

S.—*Sik*. Between the entrance to the Sik and the Camp. These examples are all undoubtedly washed from the heights above.

F.—*Wady Farasa*. Marked on the map.

U.—*Umm Seihun*. Marked on the map.

1. Light brown flint, left hand edge shown to the right, and section below.

2. Blue-grey flint, deep triangular section, other side single flake.

3. Grey mottled chert, left edge shown to the right.

4. Brown flint, crust on back, striking edge uppermost, left edge shown to right.

5. Large single flake, table at top, crust on back.

6. Straw-coloured flint, triangular section, flaking in right-hand view has produced an almost flat surface.

7. Brown flint, crust at butt, triangular section, rough.

8. Bluish flint, fine edge at top, strongly suggests a Bronze Age adze. Careful examination of the provenance failed to reveal any Bronze Age pottery.

9. Veined flint, white patina, left edge shown to right, much rolled.

10. Grey flint, brown and white patina.

11. Blue-grey flint.

12. Dark grey flint, chalky butt, secondary work on upper edge of other side.

13. Pale grey flint, slight retouch on other side.

14. Blue-grey flint.

15. Blue-grey flint, left edge shown to the right.

16. Blue-grey flint, both sides flaked, fractured at base, possibly tip from hand axe.

17. Dark grey chert, right edge shown to the right.

18. Pale brown flint, other side all crust and flat.

19. Dark grey flint, side to the right about 8 mm. thick has been carefully dressed flat, retouching on left-hand edge, other side.

20. Blue-grey flint, fractured at base.

21. Veined grey flint, good table at bottom from single flaking.

22. Banded brown and white chert.

23. Dark blue flint, edges show traces of retouching, fractured, other side flat.

24. Brown chert.

25. Brown veined flint, cutting edge at bottom.

26. Blue flint, white patina, right hand twist.

27. Brown flint, cutting edge to left, thick back to right, retouching on cutting edge.

28. Grey flint, left edge shown to right, blue white patina only on non-bulbar face.

29. Grey flint, section above, flakes removed giving a left-hand spiral twist to core.

30. Pale grey chert, section above.

31. Pink-brown chert, left edge shown to right.

32. Veined brown chert, flattish triangular section.

**34. XXXIX.** Two views of the plaster cast made from the mould found in the South Cave.

**XL.** 1. The plaster mould found on the floor of the South Cave.

2. Plaster cast made from the mould.

3. Bronze head of unknown Nabataean king. Photograph reduced in size for convenience of comparison with the coins of two Nabataean kings.

4. Coin of Malchus.

5. Coin of Obodas. Both these coins are enlarged for convenience of comparison with the bronze head.

**XLI.** Two views of the bronze head of an unknown Nabataean king, now in the British Museum. It was presented to King George VI by the Imam of the Yemen. The provenance is not known.

## CHAPTER IV

### CHRONOLOGY OF THE SOUTH CAVE COMPLEX

**35.** With but one coin from the excavations of the South Cave complex, the chief evidence for the chronology rests upon the fragments of the Roman terracotta lamps (pl. XXXVI, 12 to 22). This evidence is supported by that of (a) a small bronze coin identified by the Department of Antiquities in Trans-Jordan as a Gaza issue of Hadrian; (b) a rim of a shallow terra sigillata bowl (pl. XXVI, 37); (c) a fragment of the rim of a millefiori glass bowl (pl. XXXVI, 28);

(d) the head from a moulded terracotta horse (pl. XXXVI, 7).

For the lamps, references are to O. BRONEER, *Corinth* Vol. IV, Part 2 (abb. C), and H. B. WALTERS, *The Catalogue of the Greek and Roman Lamps in the British Museum* (abb. B.M.)

Of thirteen fragments of lamps discovered, six were from the Tomb. No. 12 is C. Type XXV, and bears a strong resemblance to pl. X, no. 507, which is dated at latest to the reign of Domitian (C., p. 86). It resembles also B.M., pl. XLIII, no. 95, which is dated from the first to the third centuries A.D.

No. 13 is the bottom half only of a moulded lamp; from its general shape it is not likely to be earlier than the middle of the first century A.D.

No. 14 is a small and very shallow lamp, which appears to have been wheel-made. Lamps continued to be made on the wheel as late as the end of the first century A.D., so that this example is not likely to be later than that date, but may be considerably earlier.

No. 15 resembles C. Type XXIV, and is found at Corinth from the second half of the first century A.D.

Nos. 16 and 17 may be the transitional type with rounded nozzle C. Type XX, but with ornament of ovules and rosettes as on C. Type XXI, pl. VII. Both these types continued at Corinth up to the end of the first century A.D. Nos. 19, 20, and 21 are from lamps of C. Type XXII which were most commonly in use between the beginning of Tiberius' reign and the middle of the century. These lamps were decorated artistically; frequently with animal figures, as on no. 21. No. 22, which may be the lower half of a nozzle only, somewhat resembles C. Type XVI of the period from the second century B.C. to the end of the first century A.D., or B.M. Delphiniform 50. On the other hand, and principally because of its large size, it may not be a lamp nozzle at all, but a part of a terracotta figure. Excluding no. 22, we therefore get a range for the lamps from the reign of Tiberius to the end of the first century A.D.

(a) The small bronze coin of Hadrian struck at Gaza cannot be earlier than 119 A.D., the earliest known date for an issue in Syria (MATTINGLY, *Coins of the Roman Empire*, Vol. 3, p. xii), and may be as late as 130 A.D., at which time Hadrian appeared in person against the Jewish rebels.

(b) The terra sigillata rim, pl. XXVI, no. 37, is

similar to a type attributed to the middle of the second century A.D. (see Chapter III, p. 23).

(c) The piece of millefiori from the East Chamber is of the first-second century A.D.

(d) There remains the terracotta head of a horse, pl. XXXVI, no. 7, which belongs to the same class of figures as those found at Petra in 1929 (see Chapter III), which have been attributed to the third century B.C., although this example is not necessarily of that date.

So that, although all the lamps come within the first century A.D., the terracotta horse head may be as early as the third century B.C., while the latest date is that of the sigillata rim of the middle second century A.D.

It is quite possible, in fact almost certain, that the Tomb was in use over a considerable period. Another complicating factor is that those objects lettered "T" are from under the Tomb shaft, and may, therefore, be intrusive.

As for the style of the Tomb itself, it is not known when any one of the different styles was in use, or whether they were not in use contemporaneously.

However, there is evidence to show that on two occasions a façade was cut into the side of a shaft tomb, where such a tomb had originally been excavated close to a rock face. KENNEDY, in discussing such a phenomenon (*Petra*, p. 40 and Fig. 66) where a "badly weathered monument with an arched top" had been cut into a shaft tomb, rightly infers that the shaft tomb was excavated before the façade was cut; but he is certainly mistaken in supposing that the side entrance was cut in error by the workmen, who were unaware of the existence of the tomb shaft. This is clearly shown by another example at the tip of the spur of Umm Seihun above Wady Abu 'Olleqah. Here the façade is of that simple type which is commonest at Petra, i.e. with the cavetto cornice and two separated half gables above the doorway. The doorway opens into a fair-sized rectangular chamber, which contains, some distance from the doorway to the left, a stone coffin in the form of a manger which had been cut from the rock. Immediately above the coffin is a rectangular opening in the roof, obviously cut, like Kennedy's example, for the lowering of a coffin. From the top of the crowstep on the façade to the tomb roof into which the shaft had been cut is only a few feet, and a workman engaged on the façade

would most certainly have been aware of the existence of the shaft opening. In any case there is easy access by a pathway immediately to the right of the façade, leading to the terrace which forms the tomb roof, and it is inconceivable that this terrace roof was unknown to, or unseen by, the workmen.

Why these two shaft tombs should have had façades and doorways cut into their sides is a matter for speculation. It may signify a change in the services for the dead, and that for the new ceremonies the tomb required to be converted to a mortuary temple to which easy access was possible. The façade at Umm Seihun is very badly weathered, as also is that at An Nasara, but this is not necessarily an indication of age, but may be due to the softness of the stone which is very variable in different parts of Petra.

These two examples of the shaft tombs prove that such tombs must, in some cases, be of an earlier date than façades of the cavetto-cornice and separated half-gable type, and the type with a semi-circular tympanum over the doorway which has been called the "Syrian" type. This suggests an early date for some, if not all, of the shaft tombs. In this connection it is interesting to note that Rénan was of the opinion that the Phoenician shaft tombs of Amrit and Sidon preceded those tombs which were approached in a more convenient manner by a flight of rock-cut steps (*Mission de Phénicie*).

In the case of the South Cave complex the levelling of that part of the rock terrace into which the Tomb had been cut and on which the two chambers were built, was clearly done in one operation, so that the Tomb cannot be later, but may be contemporary with, or earlier than, the chambers. The area of the terrace on which the limestone wall was built is nearly a foot below the level of the terrace to the west, and in any case is much more carefully levelled (pl. XVIII, 2). But the limestone wall overlies at its western extremity (pl. XVIII) that part of the terrace which contains the Tomb and the chambers; the limestone wall therefore must be later than the Tomb. But, as noted above (Chapter II, p. 9), the limestone wall is earlier than the heavy sandstone wall. The sandstone wall bears a striking resemblance, in the use of material and the method of construction, to those heavy defensive walls which have been classed as Nabataean (compare pl. XIX, 4, with Q.D.A.P., Vol. 7,

pl. XIII, 2). Allowing for a lapse of time between the dilapidation of the limestone wall and its supersession by the sandstone wall (this latter is unlikely to have been built after 106 A.D. and most probably was built some years before), the limestone wall might conceivably belong to the first century B.C. or earlier. The Tomb, in that case, must originally have been excavated at least as early as the first century B.C.—possibly earlier still.

The mass of rock which forms the altar was left when the general levelling took place before the cutting of the tomb shaft, and the altar and Tomb are most probably contemporary. There would seem to be no point in leaving a narrow rib of rock joining the back of the altar to the rock face of the upper terrace, as was done, unless it was intended, from the first, to build between the altar and the upper terrace, and thus to use this rock rib as a support and an economy in the building operations. The West Chamber may, therefore, be as early as the Tomb, and the fine painted pottery which was so abundant from the lowest levels supports the early date for this Chamber. There is certainly nothing like the same fine quality in the wares from the East Chamber, which is also inferior to the West Chamber in the materials used for its building.

The complex probably consisted originally of the Tomb and altar, with a large well-built chamber of sandstone ashlar (the West Chamber) to the south-west, erected between the altar and the upper terrace. There was a clear level space immediately behind the altar, and this space was guarded by a short extension of the altar in a north-easterly direction in the form of a wall of thin sandstone slabs, terminating in a small rectangular plinth of the same material which may have been for a cult object. A space was left in this sandstone wall for a doorway which gave access to the enclosure and, at the back of the enclosure, to a well-cut cave with white plastered interior.

The East Chamber, and both the limestone and the later sandstone walls, were subsequent additions to the complex.

What chronological relationship the South Cave has to the rest of the complex is not easy to determine. Certainly there is no evidence from the pottery to suggest an early place in that chronology, but its isolated position on a ledge of rock specially prepared for it, and the rock cut stairway directly

connecting it with the Tomb and altar, suggests a relationship between them which is given in chap. II, p. 6 *et seq.*

The pottery from the West Chamber Dump, which was deposited after the dilapidation of both the East and the West Chambers (see Chapter II, p. 10), is important for two reasons. First, the date of the group, if determinable, provides a *terminus ad quem* for the two chambers. Secondly, if, as it appears from the internal evidence, the complex ceased to be occupied about the middle of the second century A.D., the fact that the Dump material represents a homogeneous collection of domestic pottery proves that a settled community was still extant at Petra for a considerable period after the annexation by Trajan.

Certainly, Hadrian would not have visited Petra in 131 A.D., if the city at that date were in a state of chronic decline. His visit probably gave the city a new, if artificial, lease of life, which lasted probably to the end of the century, to which period the pottery from the West Chamber Dump may belong.

## CHAPTER V

### NABATAEAN SCULPTURE

**36. XL.** 1. The mould for casting a head was found by Mr. Ellis on the floor of the South Cave, (p. 11). It is of great importance, as hitherto no life-sized head has been found in Petra, and nothing is as yet known of the portrait sculpture of the Nabataeans, except coins. Two views of a cast made from the mould are given on pl. XXXIX; no. 2 is the face seen, as was perhaps intended if it were for a bas-relief, in absolute profile; no. 1 is the same cast turned slightly so as to give a three-quarters effect.

Comparison of this head with the bronze head in the British Museum (pl. XLI) shows that the two are contemporary or nearly so. It seems therefore that the cast may be the portrait of a queen of Petra. As the nose is unfortunately damaged it is uncertain which queen is represented, for the only known portraits of the royal personages of Petra are on the coins and are therefore in profile. I give below (p. 32) my reasons for the identification of the bronze head; these arguments apply even more

strongly to the cast. The coins of Obodas, Aretas IV, and Rabel show so progressive a degeneration in style that it is unlikely that so fine a piece of work as this head could belong to the two later kings. Again, though the profile of the cast cannot be taken as a guide, the rest of the face and as much of the head-dress as remains are more like the unnamed queen of Obodas than either Shaqilath or Gamilath, the first being the second queen of Aretas IV and mother of Rabel, the second being the sister and queen of Rabel. According to Josephus the father of Aretas IV was Obodas, but his mother's name does not occur. The first queen of Aretas was Huldu; by analogy with Rabel whose first queen was his mother, it seems likely that Huldu was the queen of Obodas. Until further information comes to hand I am inclined to identify the head with Huldu.

The style, like that of the bronze royal head, is that of the beginning of the Christian era or a little before. This would agree with the date of Obodas, who reigned from 28 B.C. to 9 B.C. The style is Hellenistic of that late period when the artists were striving to represent character and personality rather than abstractions. In both heads the Oriental cast of feature is visible, especially in the fullness of the cheek over the jaw. The treatment of the eye is the same in both heads, allowing for the necessary difference between a bas-relief and a head in the round. The wide, rather staring eyeball, the heavily-cut eyelids, the fold of the upper lid over the lower, are the same in both heads. The flattening of the eyeball to represent the iris indicates the cast was not intended to be coloured, the play of light and shade would give the effect required. The planes of the cheek above the cheek-bone are treated alike in both heads, but in the cast the modelling of the cheek itself is more delicate than in the bronze, perhaps because of the difference in the male and female faces. It is difficult to compare the mouths, for in the cast the little twist on the far side is an artistic device to obviate distortion in a bas-relief, while in the bronze head the lips have been inlaid and the loss of the inlay gives the mouth a looseness at the corners which it probably did not have when complete. The dressing of the hair is entirely different, the man's hair being curled and the woman's in loose tresses; but the actual treatment by which the hair is represented is the same in both. It is unfortunate that the lady's head-dress is

broken; it appears to have been a diadem of some kind, and perhaps had a flowing veil covering the back of the head, as on the coins.

The thinness of the plaster shows that the mould was not intended for the casting of metal. It may have been for making a terracotta cast, or more probably for moulding the core for a *cire-perdue* cast in metal. As nothing of the kind has been found hitherto in a Nabataean site, it is impossible at present to do more than make suggestions, but the Nabataean head in the British Museum shows that bronze-casting by the *cire-perdue* method was known to the Nabataeans and used by them. Further excavations at Petra would probably bring to light other pieces of artistic and technical importance.

**37. The Bronze Head.** The bronze head (pl. XLI), now in the British Museum, was presented to King George VI by the Imam of the Yemen. Its provenance is unknown, but the style of the features and of the hair-dressing indicates that it is a portrait of a Nabataean king. It clearly belonged at one time to a statue, and has been broken off the figure. It is slightly under life-size, being  $8\frac{1}{16}$  in. high. It was cast by the *cire-perdue* process on a core of fire-resisting clay mixed with sand (see *Brit. Mus. Quarterly*, XI, 1937, p. 153, pls. 40, 41). The eyes were once inlaid with stone or glass, an ordinary technique in all periods of ancient Egypt and also known in Greece. The lips had been inlaid, probably with red copper; this is a technique practised by Greek artists, but unknown in Egypt. The loss of the inlay gives a looseness to the corners of the mouth which belies the rest of the face; the firm corners must have been marked on the inlay, which was held in place by the burnishing of the edges of the lips, which are now rough and ragged. The hair is dressed in short stiff curls round the face, and at the back appears to have been woven into plaits. Plaiting of the hair is a common type of hairdressing among Arab men, Mahommed is known to have worn his hair in four plaits on his journey to Mecca, and some of our workmen at Petra had their hair done up in tight little plaits. It is therefore interesting to find that the fashion goes back to an early period. Round the head there is a very slight indication (just visible in the photograph), that there was once a fillet tied round. It is possible that the fillet was of thin sheet-gold just heavy enough to

make the slight mark. The colour of the bronze is golden for the face and dark for the hair. The asymmetry of the eyes shows that this head was certainly a portrait and probably a beautiful likeness of the sitter. Had it been an impersonal representation of a deity or even of a royal personage the eyes would have been placed according to the canons of beauty.

The head has many points of interest. Had it belonged to Europe the date would have been fixed to the first or, preferably, the second century A.D. But as it is from the East the date may be, and probably is, of the first century B.C. Greek art at its best seldom attempts portraiture; the statues are impersonal. A god or goddess is calm and majestic with the inscrutability of the immortals; a disk-thrower or a dancing girl are not portraits of any individual youth or maiden, they are the impersonal incarnations of youth and strength and beauty. The idea of representing a person and attempting to portray the soul behind the face is of later date and begins only in that period of change and transition which was contemporary in Europe with the Nabataean rule in the Near East. It is not improbable that that change in the conception of the function of art may, like the change in religion, have begun in the East and have arrived among the Greeks a century or two later, being carried there perhaps on the wings of the Roman eagles. Whether the change was progressive or retrogressive is a matter of opinion; the fact remains that the change came. The dating of the head, which shows strong Hellenistic influence, is therefore of importance.

Comparing it with the heads on the Nabataean coins, it is obvious that it is not a portrait of Aretas III, under whom coinage first began among the Nabataeans, and whose admiration of the Greeks was so great that he called himself Philhellen. He was a man of definitely Arab type, with a large nose and Semitic features. His immediate successors were Malchus, Obodas, and Aretas IV. The coins of Aretas IV are usually so badly designed that they are of little use for comparison of a likeness; when they are of better style they show that he was of the same type as Aretas III, i.e. Semitico-Arab. The coins of the later kings are too degenerate to be worth considering in this respect. Consequently, only the coins of Obodas and Malchus need be studied.

On pl. XL, 4, 5, are given enlargements of coins of these kings for comparison with the bronze head (here reduced in size to facilitate comparison). The likeness is more pronounced in the coins of Malchus. The set of the head on the neck is the same, there is the same dip of the nose at the junction of the upper lip, and the facial angle seems to be the same. The mouth however might belong to either Malchus or Obodas. Both kings wear their hair dressed in stiff curls with a fillet tied round the head; the way that the curls fall round the face in the bronze head is more like Obodas than Malchus.

There is one indication which points to Obodas rather than to Malchus as the original of the statue. A statue of the former was once set up in his honour, of which the inscribed pedestal still remains at Al Mer (Bruenow, No. 290). The inscription states that "This is the statue of the divine Obodas, which the sons of Hunainu made." The divinity of Obodas is attested also by another inscription over a niche near the Deir Temple; this says, "May be remembered, 'Ubaidu, son of Zikka, and his comrades in the sacrificial feast of Obodas the god." The word here translated "sacrificial feast" is the same as the Hebrew word used for the orgiastic festivals of Baal Peor. The date of Malchus is *circa* 50 to 28 B.C., the date of Obodas is 28 to 9 B.C.

The choice therefore lies between Malchus and Obodas. If the head of the queen is contemporary with the bronze head of the king, it might be possible to come to a decision. On the coins of Malchus the king is represented alone; but on the coins of Obodas the queen often occurs. Whether this means that Malchus was not married cannot be proved, but it would appear at any rate that the queen, if he had one, was not important. Obodas is the first king to include the queen on his coins; it seems rather odd that his predecessors did not do the like unless there was some good reason for the omission. The filiation as well as the marriages of the Nabataean kings, with the exception of the latest, is still unknown. Even the order of the kings is not established with any certainty, it is possible that Obodas precedes Malchus; but if the order is Malchus, Obodas, Aretas IV, then the lady might well be Huldu, who appears on the coins of Aretas as "Queen of Nabataea." She was probably his mother, for on his later coins his queen is his sister, Shaqilath, who perhaps succeeded to the throne on the death of Huldu.

## CHAPTER VI

### THE DERIVATION OF THE ROCK-CUTTING AT PETRA

38. The origin of the Nabataeans is unknown, though tradition affirms that they were Arabs. The beginning of cultural contacts by the Nabataeans at Petra is attested by the earliest pottery from the excavations in the Town Dump by HORSFIELD (*Geographical Journal*, Vol. LXXVI, p. 369, *et seq.*), which belongs to the late fourth century B.C. Although as yet there is no proof, it would seem that almost immediately from that date, the cliffs of Petra began to be transformed into rock-hewn monuments. The Arab has a traditional horror of manual work, and it is inconceivable that an Arab people, perhaps "shepherds" as Diodorus calls them, should, as soon as they came in contact with civilising influences, be capable of such skill. Most writers on the monuments of Petra are agreed that one must look elsewhere for the originators and fabricators of these works. KENNEDY (*Petra*, p. 45) emphasises this when he says, "Among the monuments of pre-classical date, and which therefore must have been carved by the Nabataean people, *or at any rate in Nabataean times*" (my own italics). Several writers on Petra, including Kennedy, have drawn attention to the Assyrian influence on the medley of styles which is Nabataean. As it is most unlikely that the Nabataeans were themselves responsible for the rock-cut monuments, at any rate in the first place, it is only reasonable to suppose that the people engaged to do the work were also responsible for the introduction of the style, or rather mixture of styles which is one of the fascinations of Petra.

The Nabataeans had control of the rich caravan trade passing from the East to the West, from at least the end of the fourth century B.C. until the rising prosperity of Palmyra killed their trade in the second century A.D. But long before them, the Phoenicians had had control of trade up and down the Mediterranean coast, even extending to the Red Sea. Hiram and Solomon jointly equipped and despatched an expedition from Ezion Geber (Aqabah) to Ophir (1 Kings, ix, 26-28), and Herodotus says that the Arabian caravan trade passed through the hands of the Phoenicians (Herod. iii, 107), and no doubt they continued to take part in it until their decline. It is possible that the Nabataeans seized their opportunity during the triumphal progress of

Alexander through Phoenicia, at which time the Phoenician grip on that caravan trade probably relaxed.

The Phoenicians were masters of quarrying, and had a decided preference for work on a large scale. What monuments of theirs still exist might be described as elephantine, for they are large without grace. The same may be said of the monuments at Petra, with the exception of the Khazna which is unique. The eclecticism of Phoenician art is nowhere more marked than in their style of architecture, borrowing as that style does from Assyria, Egypt, and Greece. Exactly the same can be said of Nabataean architecture. A comparison between the style of the Phoenician monuments at Amrit (ancient Marathus) in Syria, and typical monuments at Petra is interesting. Fig. 1, a vast monument at

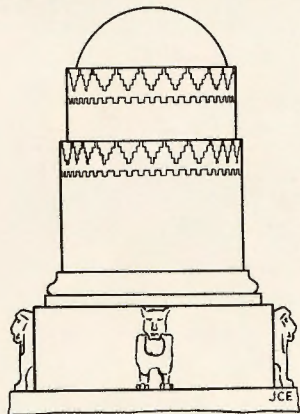


Fig. 1.

Amrit, stands just over 30 ft. high above a rock-cut tomb. There is a lion roughly carved at each of the four corners of the plinth, while the top of the column carries a double frieze of crowsteps carved in relief. Fig. 2 is typical of a number of façades at

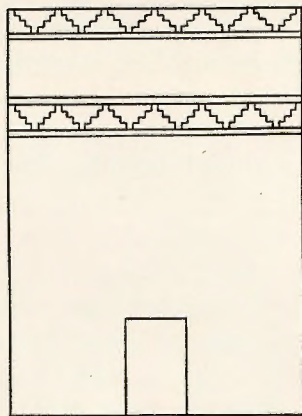


Fig. 2.

Petra which are surmounted with a double frieze of crowsteps. The use of the cavetto moulding, in a manner very suggestive of Egyptian influence, is combined with the crowstep in the form of two half gables at Petra (Fig. 3). This type of monument

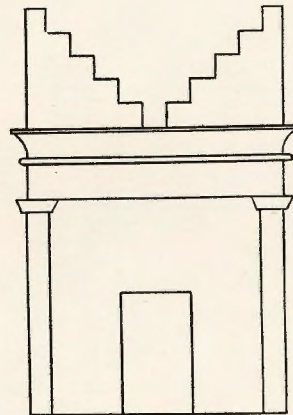


Fig. 3.

is very common there, and is perhaps the earliest type. Although not surmounted in this case with the crowstep, the shrine of Al M'aabed at Amrit (Fig. 4), makes the same use of the Egyptian cavetto

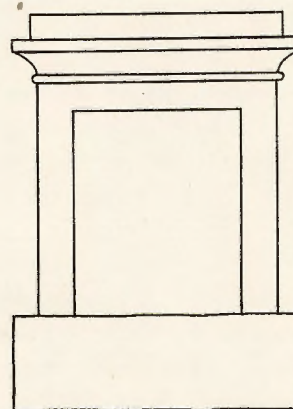


Fig. 4.

as Fig. 3. The shrine of Ain al Hayat, also at Amrit, proclaims indisputably the Egyptian influence on Phoenician art, as the cavetto cornice is surmounted by a frieze of uraei (Fig. 5). At Petra are a number of free-standing rock-cut monuments, roughly rectangular in shape, about 20 ft. high, which are known as "Sahrij". Bruennow counted 26 such monuments, only about half of which had an



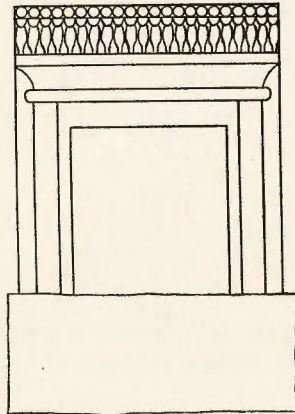


Fig. 5.

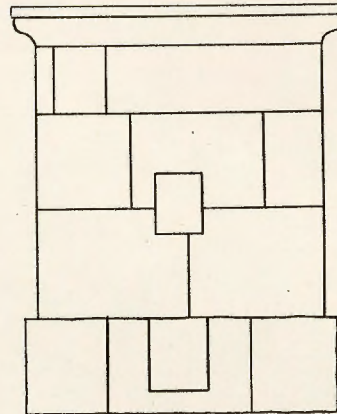


Fig. 8.

excavated chamber. Some of these monuments have a coffin-shaped depression in the top. Fig. 6 is of a Sahrij in the Bab as Sik. This sort of monument,

of enormous blocks of stone. It is in two stories, and rock-cut loculi received the bodies in the floor of the lower chamber. Such a monument resembles those monolithic Sahrij at Petra which have an excavated chamber.

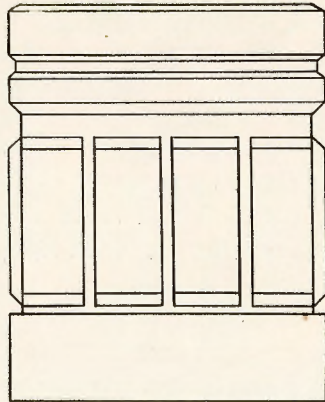


Fig. 6.

often a tomb as the coffin-shaped depression proves, is very like the type of tomb erected for Hiram at Tyre (Fig. 7), where the body lay in a sarcophagus at

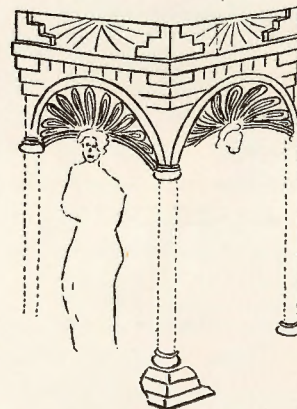


Fig. 9.

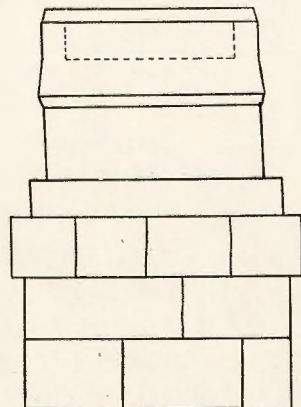


Fig. 7.

the top of the monument. Fig. 8 is of the Burj al Bezzak at Amrit, an almost cubic monument built

The strange mixture of styles common to both Phoenician and Nabataean architecture is well summed up in the following sentence, which applies equally to both peoples: "Where the Phoenician artist gives free play to the inventions of his own genius he only produces creations that show a lack of genuine feeling for form in no less degree than the rough and absurd mixture of totally different styles of which he is guilty" (*Historians' History of the World*, Vol. 2, p. 353).

Apart from the great similarity between the architecture of the Phoenicians and Nabataeans, the character of both peoples seems to have been very similar. The Phoenicians were notoriously avaricious; Strabo notes the same quality in the Nabataeans; he says, they fined anyone "who has

diminished his substance, and confer honours on him who has increased it”.

Again, the Phoenicians favoured kingship as a form of government, and the royal house claimed divine descent (W. R. SMITH, *Kinship and Marriage*, p. 206). The Nabataeans were similarly governed, and there is evidence to support the theory that the Nabataean kings were regarded and worshipped as the embodiment of the god Dusares.

In all these things, architectural style, form of government, and morals, the two peoples are strikingly alike. It would appear, from the study of the monuments at Petra, and from the tentative excavations which have so far taken place, that the Nabataeans received a practically ready-made culture. It is not unreasonable to suppose that this gift was made by a people long familiar with that part of the world, due to their commercial activities. It is possible that the Nabataeans were at first a hindrance to Phoenician trading, but that subsequently they were taken into partnership in that trade. Both peoples were Semitic, and inter-marriage would probably be encouraged. It is dangerous to make comparisons on purely stylistic grounds, but with the Nabataeans it is not a question of the evolution of a style but the acquisition of a ready-made culture. Only further extensive excavation at Petra, and at the large number of sites strung northwards into Syria, which are now recognised as Nabataean, will fully reveal the influences at work in this obscure, but none the less important, period.

#### APPENDIX I

##### GAMES

**39.** Two gaming boards were discovered. The first, pl. VII, no. 4, had been cut into a corner of one of the covering slabs of the Tomb. As it was on the underside of the slab, it must have been in use before the slab was used to cover the Tomb shaft, and possibly before the slab was lifted from the quarry. It must, therefore, certainly be of Nabataean date.

The second (Fig. 10) is on the summit of Umm al Biyara (for its position, see map). It had been cut to a depth of about half a centimetre on a smooth part of the rock surface.

The first example consists of a rough square about 9 by 10 in., divided into 9 by 9 small squares, and it is probably for the ancient Egyptian game of

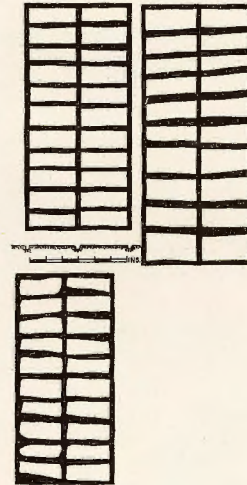


Fig. 10.

“Sent”, still played by the Arabs under the name of “Seegas”. The game is described by FALKENER, *Games Ancient and Oriental*, who says that the game “was played on a 13sq, 11sq, 9sq, 7sq, or 5sq board according as there was time to play.” For the modern version of the game he quotes Lane who says “Seegas have been cut upon the stones on the summit of the Great Pyramid by Arabs who have served as guides to travellers” (*The Manners and Customs of the Modern Egyptians*, p. 356). The Bdul of Petra to-day play a similar game, marking out the board in the dust with their fingers, and using stones as counters.

The second example most resembles the “Ludus Duodecim Scriptorum” of the Romans (FALKENER, Chapter 7), though why one of the boards should have eleven spaces in each row cannot be explained unless it was cut in error. It is difficult to understand why three gaming boards should have been placed so close together, unless the group is for a game of which we have no knowledge, or for a variation of the Roman game.

#### APPENDIX 2

**40.** Plants found in flower at Petra in March and April. Identified by Mr. John Rishbeth, Christ’s College, Cambridge.

## DICOTYLEDONS

## RANUNCULACEAE

*Adonis autumnalis* L. (Pheasant's Eye).

## PAPAVERACEAE

*Papaver Rhoeas* L. (Common Poppy).

*Roemeria Hybrida* (L) DC.

## CRUCIFERAE

*Brassica* sp.?

*Diplotaxis erucoides* (L) DC. (Rocket).

## CISTACEAE

*Helianthemum salicifolium* (L) Mill. (Rock Rose).

## ILLECEBRACEAE

*Herniaria cinerea* Lam et DC. (Rupturewort).

## MALVACEAE

*Malva parviflora* L. (Mallow).

*Malva oxyloba* Boiss.

## ZYGOPHYLLACEAE

*Fagonia sparse-glandulosa* Bornm.

*Peganum Harmala* L.

## GERANIACEAE

*Geranium molle*? (Dove's-foot Crane's-bill).

## LEGUMINOSAE

*Retama Raetam* (Forsh.) Webb. (White Broom).

*Melilotus officinalis* (L) Lam. (Common Melilot).

*Astragalus* sp. (Milk Vetch).

## UMBELLIFERAE

*Chaetosciadium trichosperum* (L) Boiss.

## DIPSACACEAE

*Scabiosa ochroleuca* L? (Scabious).

## COMPOSITAE

*Cousinia Hermonis* Boiss.

*Achillea Aleppica* DC. (Yarrow).

*Senecio* sp.

*Matricaria* sp. (Feverfew).

## GENTIANACEAE

*Gentiana* sp.

## SOLANACEAE

*Hyoscyamus aureus* L. (Henbane).

## LABIATAE

*Salvia* sp.

## MONOCOTYLEDONS

*Ixiolirion montanum* Lab.

*Muscari racemosum* L.? (Grape Hyacinth).

*Luzula* sp. (Wood Rush).

*Bromis madritensis* L. (Compact Brome-grass).

## FERNS

*Adiantum Capillus Veneris* L. (Maidenhair Fern).

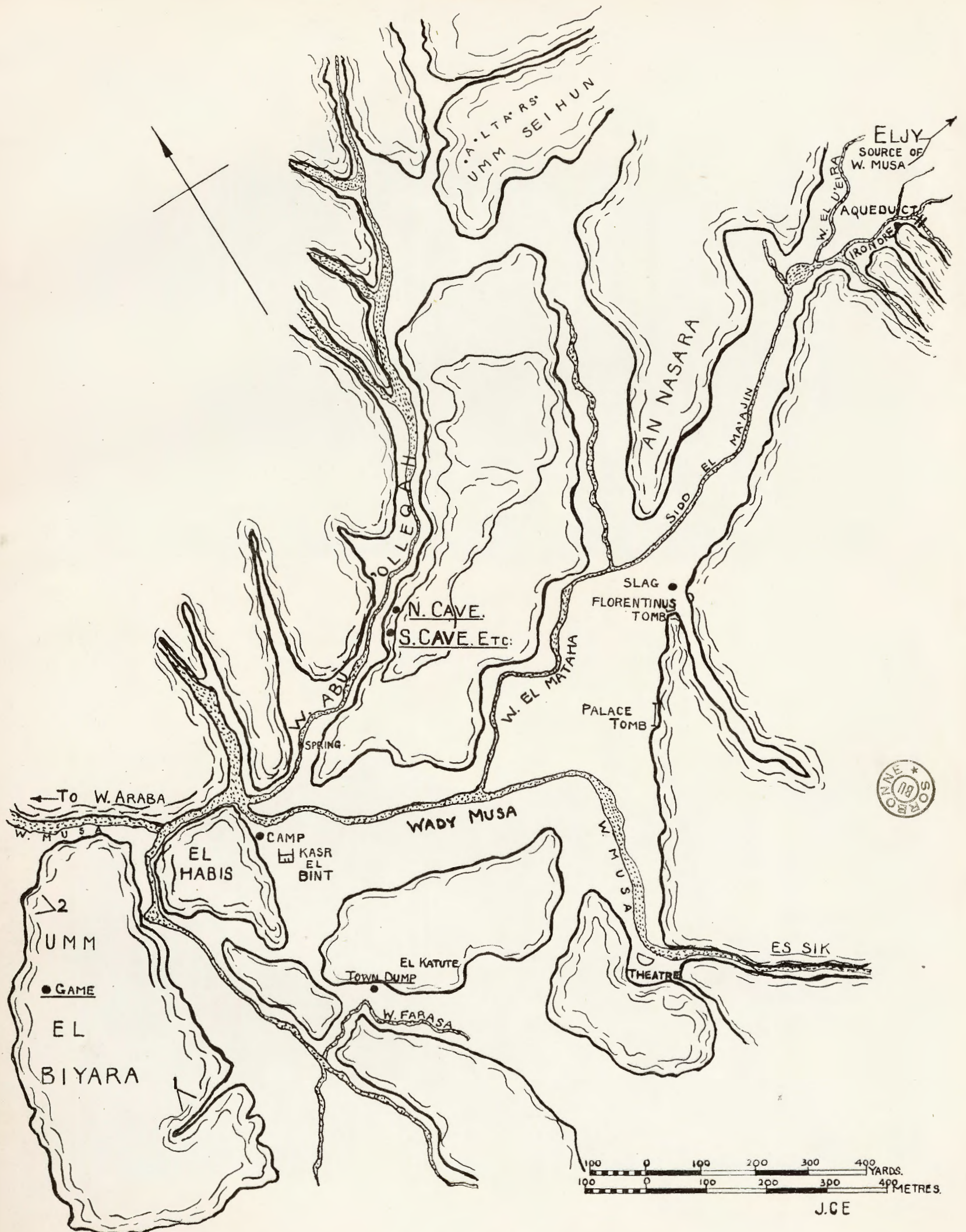


# INDEX

	PAGE		PAGE
Alabaster fragment . . . . .	12, 16	Charcoal . . . . .	4
"    vase . . . . .	10, 16	Chronological data . . . . .	29, 30
Al Habis . . . . .	6, 13	Cire-perdue casting . . . . .	31
Altar . . . . .	5, 7, 17	Classification of pottery . . . . .	18 <i>seq</i>
"    , Model . . . . .	11, 16	Climate of Petra . . . . .	3
Amphorae . . . . .	4, 20, 23	Coffins, Wooden . . . . .	12
Animal design . . . . .	14	Coins . . . . .	3
Aqueduct . . . . .	13	"    of Hadrian . . . . .	12, 21, 24, 27
Archaeological importance of		"    "    , Malchus . . . . .	27, 31, 32
Petra . . . . .	1, 2	"    "    , Obodas . . . . .	27, 30, 31, 32
Aretas III . . . . .	31	Colour of pottery . . . . .	2, 14, 23, 24
"    IV . . . . .	30, 31	Construction of coffins . . . . .	12
Arrows . . . . .	23, 25	"    "    , pillar . . . . .	9
Artificial enlargement of cave . . . . .	3, 4	"    "    , walls . . . . .	4, 6, 8, 9
"    bending of wood . . . . .	12	Cooking pots . . . . .	2, 4, 13, 14, 19, 23
Ashlar masonry . . . . .	11, 17, 29	Corn rubbers . . . . .	11, 16
As Sabra . . . . .	13	Courtyard of North Cave . . . . .	5, 13
		Covering slabs of Tomb . . . . .	7, 17
Bar of pottery . . . . .	14	Criss-cross designs . . . . .	15
Basalt corn-rubber . . . . .	11	Crossed arrows . . . . .	23
"    handmills . . . . .	16	Crowstep ornament . . . . .	33
Bead, Blue glass . . . . .	12, 26	Cup-holes . . . . .	5, 9, 13, 17
Bes head . . . . .	15	Cups . . . . .	2, 13, 14, 22
Bird design . . . . .	14	Date of Petra . . . . .	2, 10
Bistre paint . . . . .	21, 23, 24	"    "    , Tomb-robbery . . . . .	12
Bone handles . . . . .	15	Decorations, Fluted . . . . .	14
"    pin . . . . .	25	"    "    , Pie-crust . . . . .	13, 14
"    roundel . . . . .	15	"    "    , Rosette . . . . .	14
"    spindle whorl . . . . .	15	"    "    , Rouletted . . . . .	13
"    tool . . . . .	15	"    "    , Spiral . . . . .	14
Bones . . . . .	3, 12	"    "    , Stamped . . . . .	14, 22
Botanical list . . . . .	36	Description of altar . . . . .	7
Bottles, Pottery . . . . .	13, 23	"    "    , East Chamber . . . . .	8, 11
Bowls . . . . .	13, 26	"    "    , materials . . . . .	23 <i>seq</i>
"    , Carinated . . . . .	13	"    "    , North Cave . . . . .	3
"    , Glass . . . . .	15	"    "    , South Cave . . . . .	6
"    , Painted . . . . .	10, 12, 14, 21, 23, 24, 25	"    "    , Tomb . . . . .	7
"    "    , Straight-sided . . . . .	13, 18, 22	"    "    , Upper Cave . . . . .	9, 10
Breaking of pottery, Ritual . . . . .	2, 21	"    "    , Walls . . . . .	8
Bronze bells . . . . .	25	"    "    , West Chamber . . . . .	10, 11
"    coins . . . . .	3, 12, 21, 24, 27, 28	Designs, Criss-cross . . . . .	15
"    handle . . . . .	26	"    "    , Floral . . . . .	14, 15
"    head . . . . .	27, 30, 31	"    "    , Guilloche . . . . .	15
"    ornaments . . . . .	3	"    "    , Painted . . . . .	14, 15
"    plaques . . . . .	25	"    "    , Rouletted . . . . .	13
"    tools . . . . .	3	"    "    , Spot . . . . .	14, 15, 22, 24
Carinated bowls . . . . .	13	Disk, Flint . . . . .	16
Carved stone . . . . .	15	Divinity of King . . . . .	32, 35
Cavetto cornice . . . . .	33	Domitian . . . . .	28
Cavity, Conical . . . . .	5	Door . . . . .	8, 9
Chair, Stone . . . . .	6	"    jamb . . . . .	8, 9
Chambers . . . . .	5, 7	"    sill . . . . .	9
Channel, Rock-cut . . . . .	6, 7, 10	Double spout . . . . .	20
		Dowel pins, Wooden . . . . .	12
		Drainage channel . . . . .	6, 7, 9
		Dressing of stone . . . . .	6
		Dry-walling . . . . .	4, 5, 6, 8, 11, 13
		Earring, Silver . . . . .	25
		Evacuation of site, Proof of . . . . .	8
		Façade . . . . .	28
		Figurines . . . . .	15, 26
		Fillet . . . . .	31
		Finger ring . . . . .	25
		Flasks . . . . .	20, 23
		Flint implements . . . . .	13, 26, 27
		Floor, Earth . . . . .	8, 11, 12
		"    "    , Rock . . . . .	3, 4, 5, 7
		Flowering plants, List of . . . . .	36
		Fluted decoration . . . . .	14
		Forged antiquities . . . . .	26
		Game-boards . . . . .	7, 13, 35
		Gamilath, Queen . . . . .	30
		Glass . . . . .	3, 11, 26
		"    beads . . . . .	12, 26
		"    bowl . . . . .	15
		"    "    , Faceted . . . . .	26
		"    "    , Inlaid . . . . .	26
		"    "    , Millefiori . . . . .	11, 26, 27, 28
		"    "    , vase . . . . .	15
		Glueck, Dr. N. . . . .	3, 15
		Goblets . . . . .	22
		Guilloche design . . . . .	15
		Hadrian . . . . .	12, 21, 24, 27, 28, 30
		Hair-dressing . . . . .	30, 31
		Handles, Flat . . . . .	14
		"    "    , Inside . . . . .	14
		"    "    , Iron . . . . .	15
		"    "    , Knob . . . . .	14
		"    "    , Loop . . . . .	14
		"    "    , Rounded . . . . .	14
		"    "    , Twisted . . . . .	14, 22
		Hearths . . . . .	4, 6, 11
		Horse's head, Pottery . . . . .	26, 28
		Huldu, Queen . . . . .	30, 32
		Ibex . . . . .	25
		Identification of bronze head . . . . .	30, 31, 32
		"    "    "    , female . . . . .	30, 32
		Incised pottery . . . . .	14, 19
		"    stone . . . . .	15
		Inlaid eyes . . . . .	31
		"    glass . . . . .	26
		"    lips . . . . .	30, 31
		Iron . . . . .	3, 12
		"    finger-ring . . . . .	25
		"    handle . . . . .	15

	PAGE		PAGE		PAGE
Juglets . . . . .	22	Cooking pots . . . . .	2, 4, 13, 14, 19, 23	Silver earring . . . . .	25
Jugs, Pottery . . . . .	14, 19, 22	Cups . . . . .	2, 13, 14, 22, 25	Similarity of Phoenician and Nabataean architecture . . . . .	33-35
Knob handles . . . . .	14	Figurines . . . . .	15, 26, 28	Skulls . . . . .	12
Labour difficulties . . . . .	1	Goblets . . . . .	22	Socket in floor . . . . .	5, 10
Lack of timber . . . . .	8	Handles . . . . .	14	Spindle-whorl, Bone . . . . .	15, 25
Lamp-recess . . . . .	9, 17	Horse's head . . . . .	26, 28	"    , Stone . . . . .	15
Lamps . . . . .	12, 14, 26, 27, 28	Incised . . . . .	14, 19	Spine of sea-urchin . . . . .	25
Lid . . . . .	14	Juglets . . . . .	22	Spiral . . . . .	14, 23
Loculi . . . . .	7, 12, 17, 26, 34	Jugs . . . . .	14, 19, 22	"    , bases . . . . .	14
Malchus, King . . . . .	31, 32	Lamps . . . . .	12, 14, 26, 28	Spouts . . . . .	14, 20
Manganese . . . . .	14	Lid . . . . .	14	"    , Double . . . . .	20
Manger . . . . .	6	One-handed vessels . . . . .	19, 20	"    , of mortar . . . . .	15, 16
Method of excavation . . . . .	3, 9, 11	Painted . . . . .	2, 10, 12, 14, 21, 22	Stairway . . . . .	6
Millefiori glass . . . . .	11	Pilgrim bottle . . . . .	14	Stand for cooking pot . . . . .	14
Millstone . . . . .	16	Ribbed . . . . .	19, 21, 23	"    , Stone . . . . .	15
Minorca . . . . .	14	Ritual breaking of . . . . .	2, 21	Steps . . . . .	5, 6, 13, 17
Model altar . . . . .	11	Rouletted . . . . .	13, 14, 18, 19, 20, 23, 24	Strabo . . . . .	2, 11
Mortars . . . . .	3	Strainers . . . . .	20	Straight-sided bowls . . . . .	13, 22
Mould for casting . . . . .	11, 27, 30	Terra sigillata . . . . .	18, 23, 27, 28	Strainers . . . . .	20
Mud plaster . . . . .	8	Two-handed vessels . . . . .	13, 14	Style of stone-working . . . . .	33
Neith, Goddess . . . . .	23	Prie-dieu . . . . .	10	Terra sigillata . . . . .	18, 19, 23, 27, 28
Niche . . . . .	4, 6, 10, 13	Proofs, Dating of site . . . . .	8	Tethering-hole . . . . .	6, 7, 17
Obodas, King . . . . .	30, 31, 32	"    , Method of tomb-plunder- ing . . . . .	12	Toe-holes . . . . .	7, 17
One-handed vessels . . . . .	19, 20	"    , Presence of a street . . . . .	11	Tomb robbers . . . . .	7
Painted bowls . . . . .	10, 12, 14, 21	Queens of Petra . . . . .	30	Tool-marks . . . . .	3, 4, 6, 9, 17
"    , pottery . . . . .	2, 22	Querns . . . . .	3	Torus moulding . . . . .	19
Pedestal, Stone . . . . .	15	Rabel, King . . . . .	30	Tripods . . . . .	15
Petrie, Sir Flinders . . . . .	16	Rain-drainage . . . . .	7, 8	Two-handed vessels . . . . .	13, 14
Philo . . . . .	23	Reason for choosing caves . . . . .	1	Type of coffin . . . . .	12
Phoenician monuments . . . . .	33	Rebated stones . . . . .	4, 9, 13, 17	Umm al Biyara . . . . .	6, 13, 17
Pie-crust decoration . . . . .	13, 14	Ribbed pottery . . . . .	19, 21, 23	Umm Seihun . . . . .	13, 17, 27, 28, 29
Pilasters . . . . .	8, 17	Rishbeth, Mr. John . . . . .	35	Upper Cave . . . . .	5, 9, 10, 17, 18
Pilgrim bottle . . . . .	14	Ritual, Breaking of pottery . . . . .	2, 21	Vase, Blue glass . . . . .	15
Pillar . . . . .	9, 17	"    , Domestic . . . . .	5	Vine design . . . . .	15, 22
Pin, Bone . . . . .	25	"    , drinking . . . . .	2	Wady Abu Olleqah . . . . .	1, 3, 5, 17, 28
Plaster cast . . . . .	27, 30	"    , eating . . . . .	3	"    , as Syagh . . . . .	13
"    , mould for casting . . . . .	11, 27	Rock floor . . . . .	3, 5, 7	"    , Fara ad Deek . . . . .	13
"    , Mud . . . . .	8	Rosette decoration . . . . .	14	"    , Musa . . . . .	13
"    , White . . . . .	10	Rouletted decoration . . . . .	13, 14, 18, 19, 20, 23, 24	Walls . . . . .	4, 5, 6, 8, 17, 29
Plinth . . . . .	9	Rubbers . . . . .	15	Water spout . . . . .	16
Porphyry . . . . .	11, 16	Rubble . . . . .	4	Weights . . . . .	11, 16
Pottery:		Sahrij monuments . . . . .	33, 34	Whetstones . . . . .	11, 16
Amphorae . . . . .	4, 20, 23	Saunders, Mr. J. A. . . . .	1	Whitewash . . . . .	8
Bar . . . . .	14	Shaft . . . . .	28	Window . . . . .	10, 17
Bottles . . . . .	13, 23	"    , tomb . . . . .	5, 7, 17, 28	Wood . . . . .	3, 12
Bowls . . . . .	13, 18, 22	Shaqilath, Queen . . . . .	30, 32	"    , coffins . . . . .	12
Classification of . . . . .	18 seq	Shell . . . . .	26	"    , dowel pins . . . . .	12
Colour of . . . . .	2, 23, 24	"    , beads . . . . .	25	Wreath design . . . . .	15, 22, 24
		Silver coins . . . . .	3		

MAP OF PETRA



[THIS MAP IS BASED ON THE R.A.F. SURVEY]

J.C.E



FROM THE SUMMIT:  
1. LOOKING SOUTH.  
2. LOOKING NORTH-WEST.



1. AQUEDUCT, WADY FARA AD DIK.  
2. W. MUSA IN FLOOD.

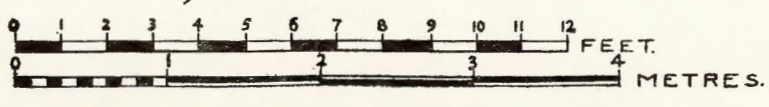
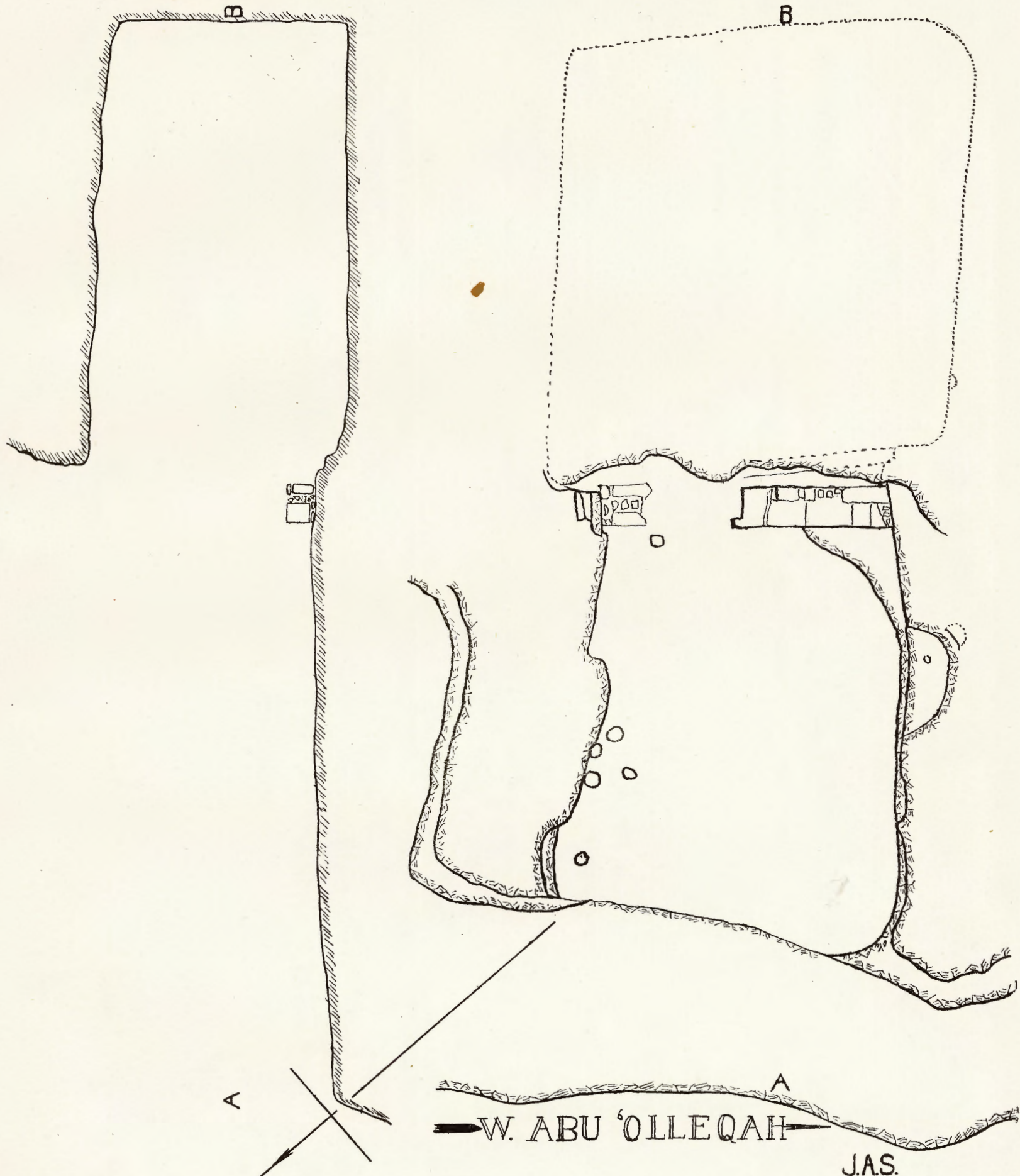


NORTH CAVE

IV

SECTION

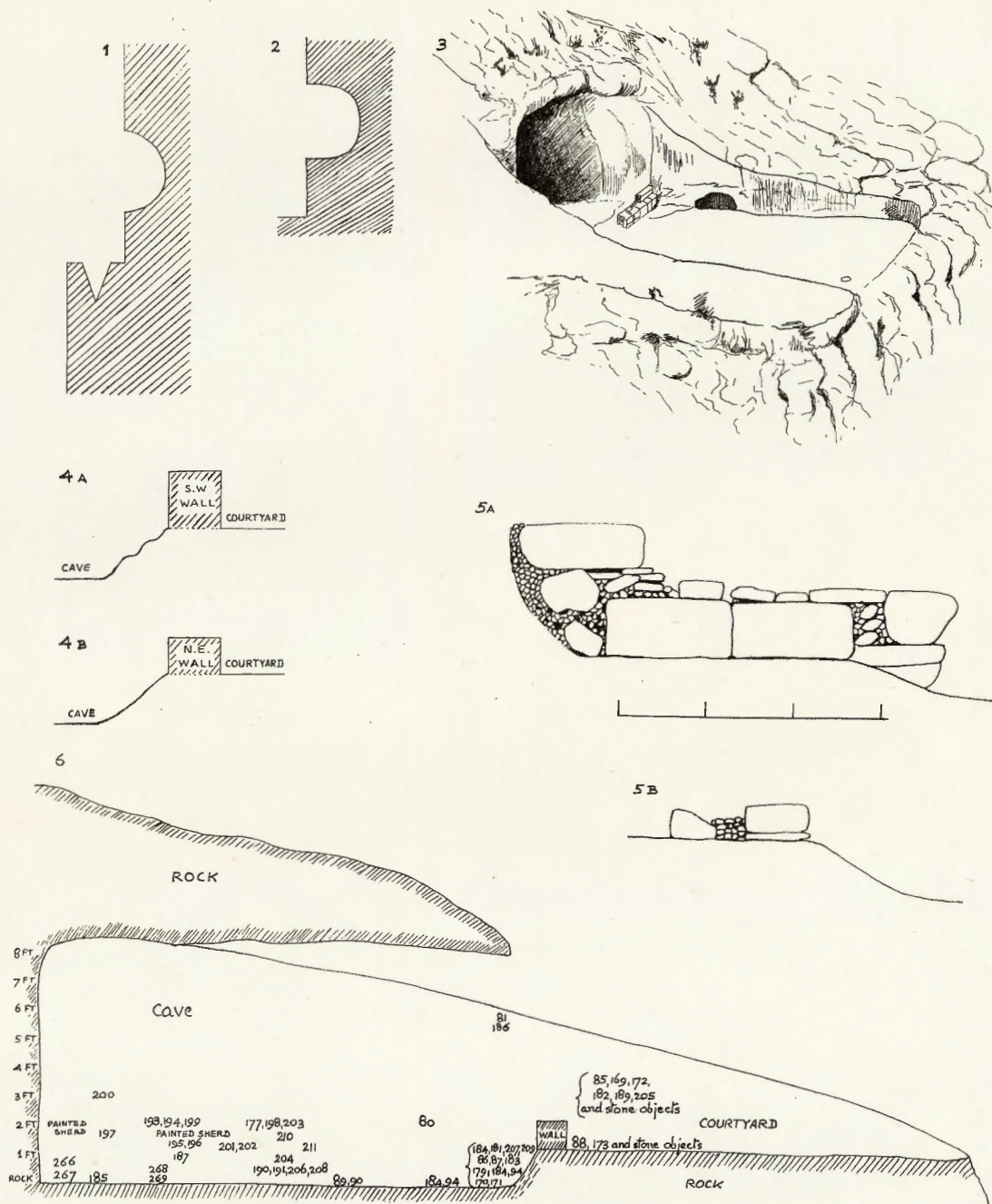
PLAN



W. ABU 'OLLEQAH

J.A.S.





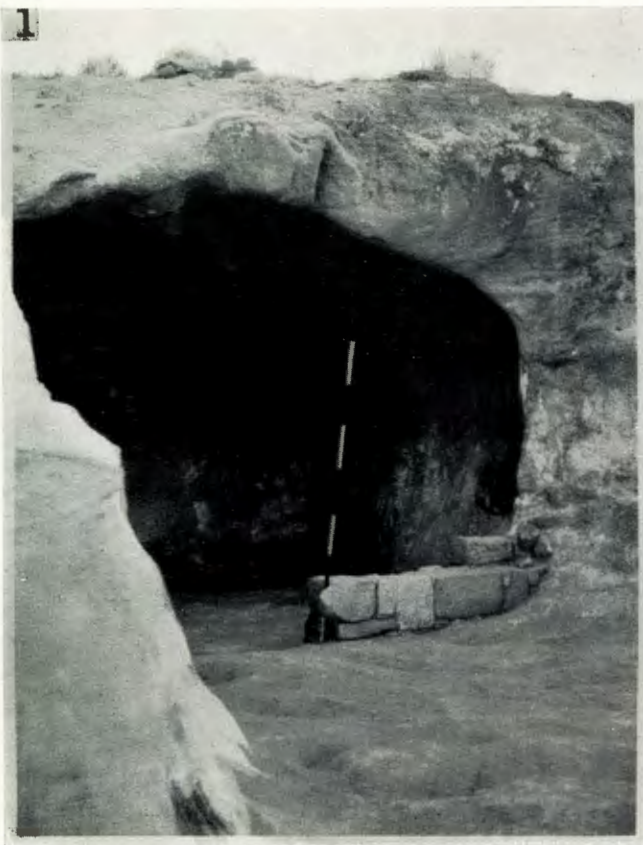
M.A.M.

- 1. Niche in Courtyard.
- 2. Niche in Cave.
- 3. Diagram of Courtyard.
- 4A. Stepped Slope into Cave.

- 4B. Smooth Slope into Cave.
- 5A. SOUTH-west Wall.
- 5B. North-east Wall.
- 6. Section of Deposit showing Position of Objects.



NORTH CAVE



1-3. NORTH CAVE. SHOWING BOTH WALLS WITH DOORWAY AND REBATED STONE.



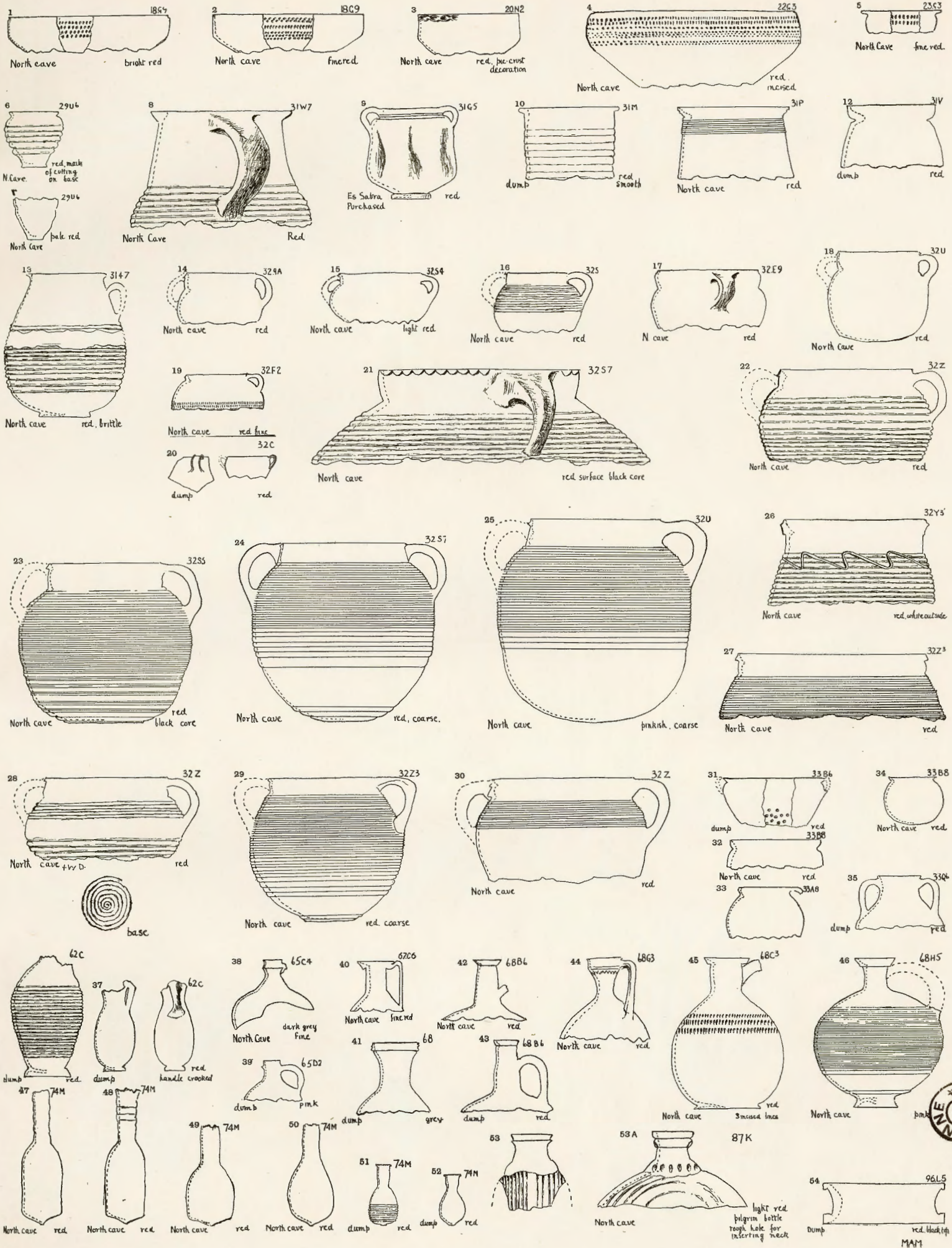
1-3. CUP HOLES, NORTH CAVE.  
 4. GAME-BOARD. TOMB.  
 5. FLINT IMPLEMENTS.



NORTH CAVE AND TOWN DUMP POTTERY

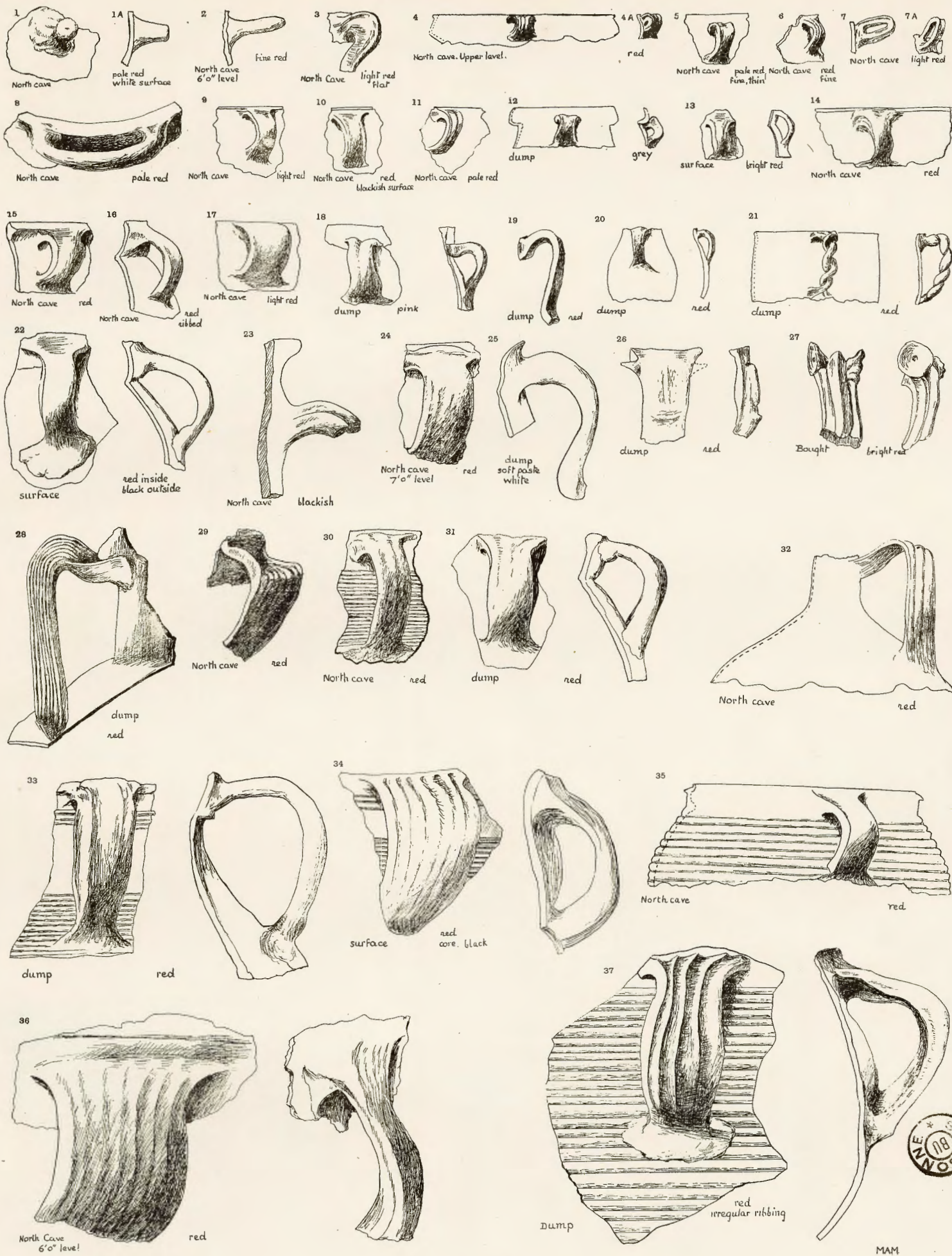


MAM JAS



I : 3

NORTH CAVE AND TOWN DUMP POTTERY



MAM

HANDLES

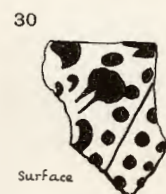
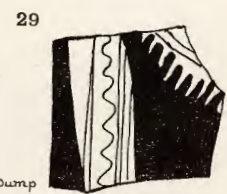
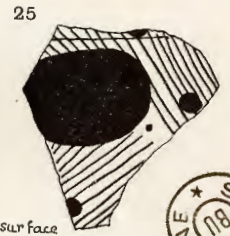
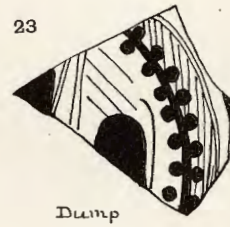
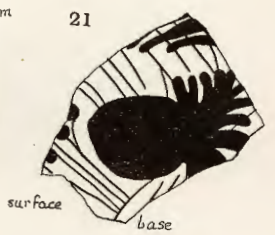
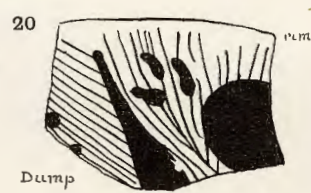
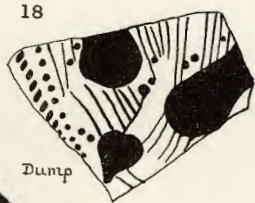
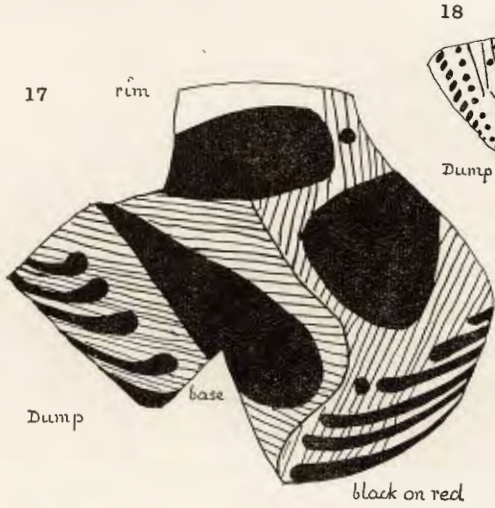
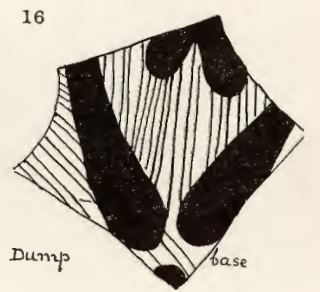
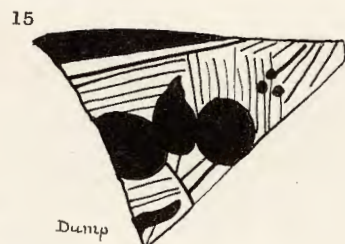
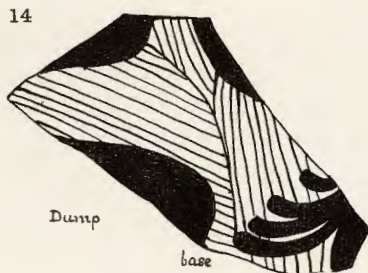
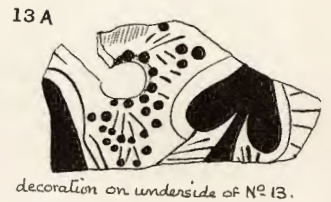
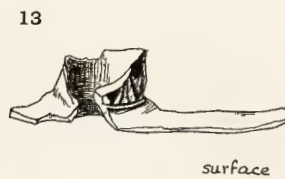
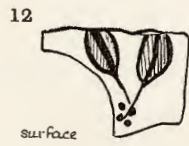
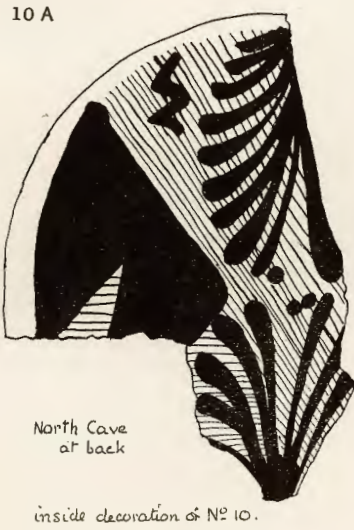
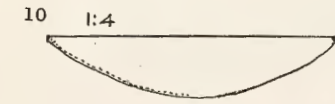
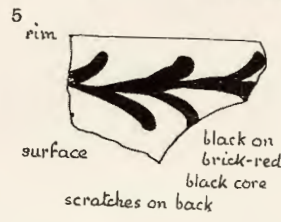
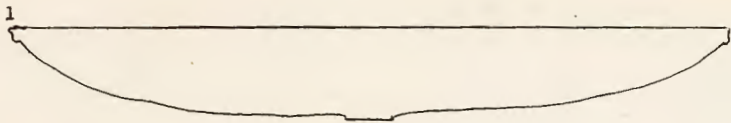
1 : 2

NORTH CAVE AND TOWN DUMP POTTERY



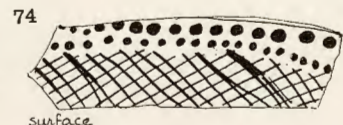
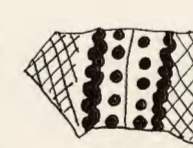
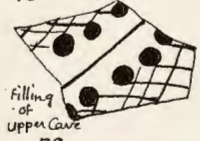
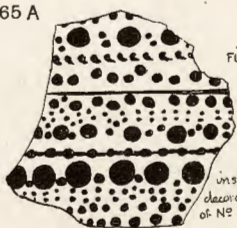
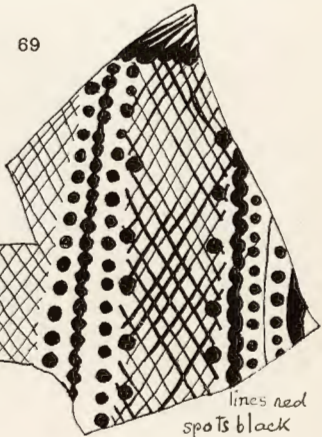
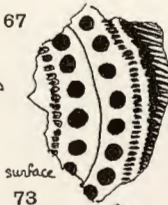
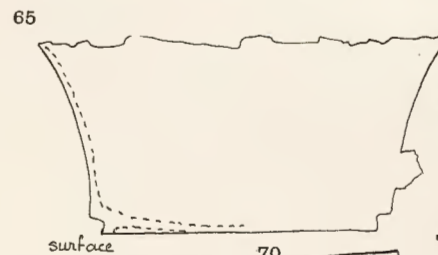
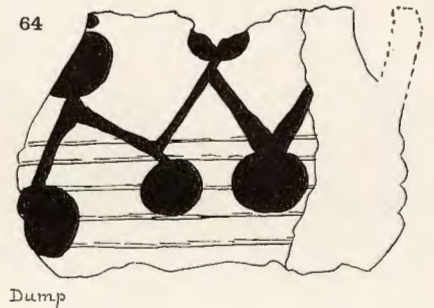
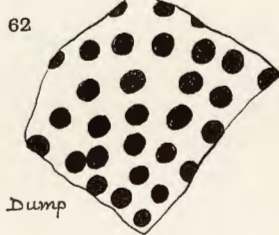
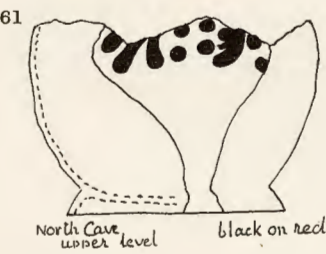
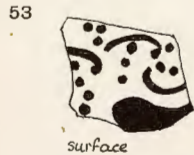
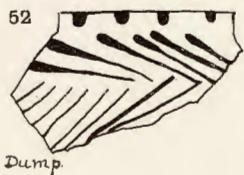
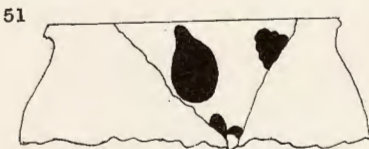
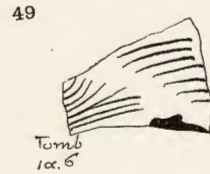
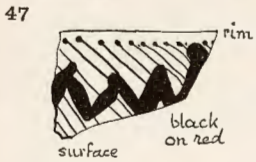
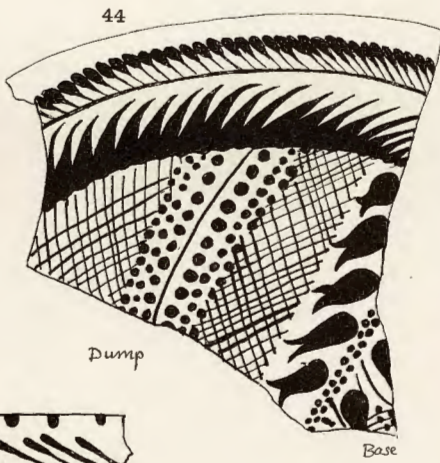
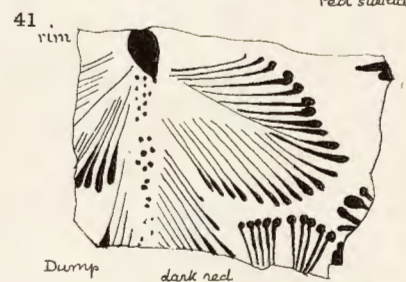
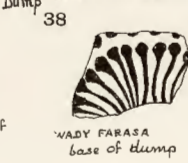
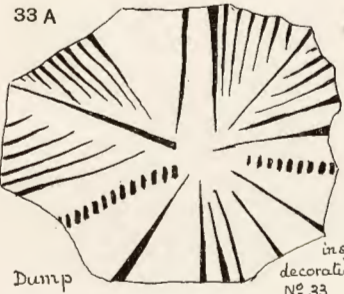
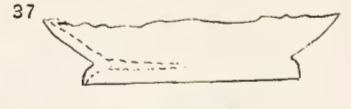
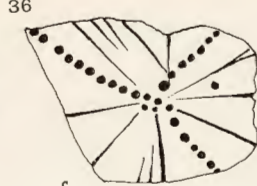
M.A.M.



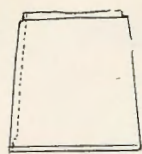


I : 2

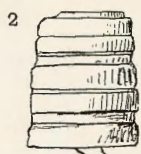
DESIGNS ON PAINTED POTTERY



lines red spots black MAM.



dump bone



dump bone



dump bone



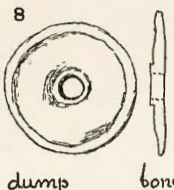
dump bone



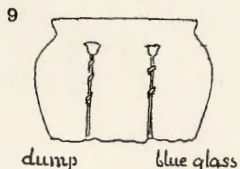
dump iron



North cave 7'0" level iron



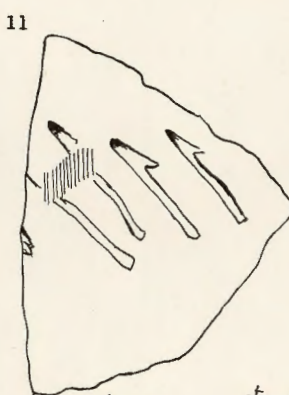
dump bone



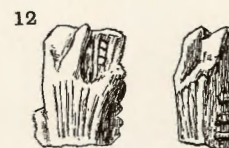
dump blue glass raised decoration



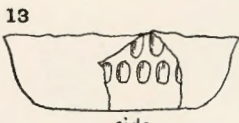
North cave stone



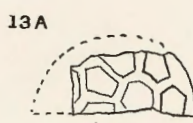
dump stone



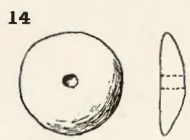
dump stone



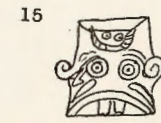
North cave side



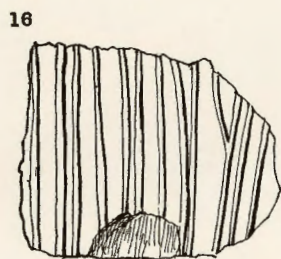
base opaline glass



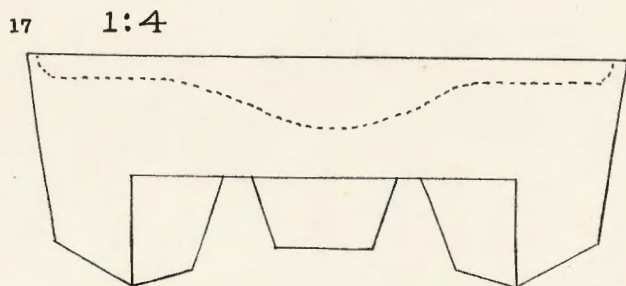
North cave stone



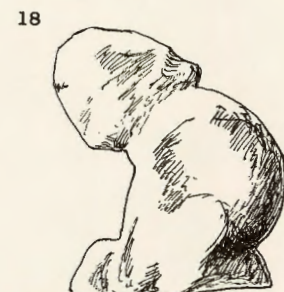
surface pottery



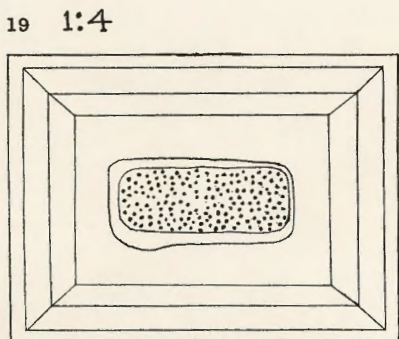
dump stone



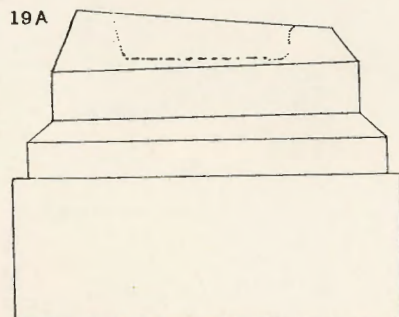
North cave elevation of No 20



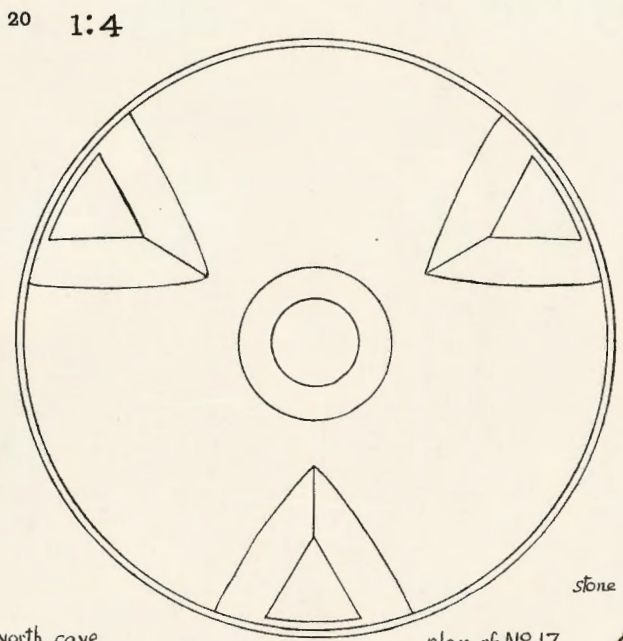
dump stone



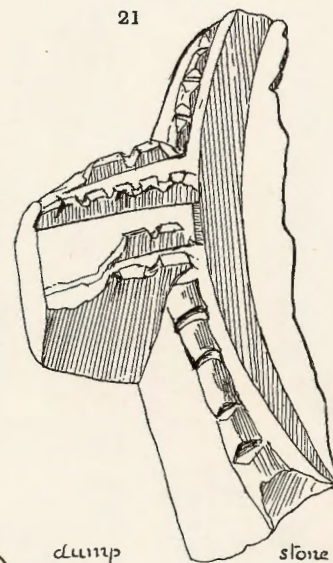
PLAN



North cave ELEVATION stone



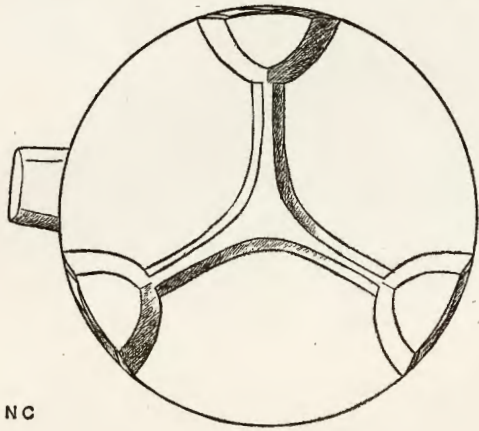
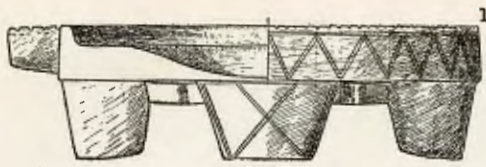
North cave plan of No 17



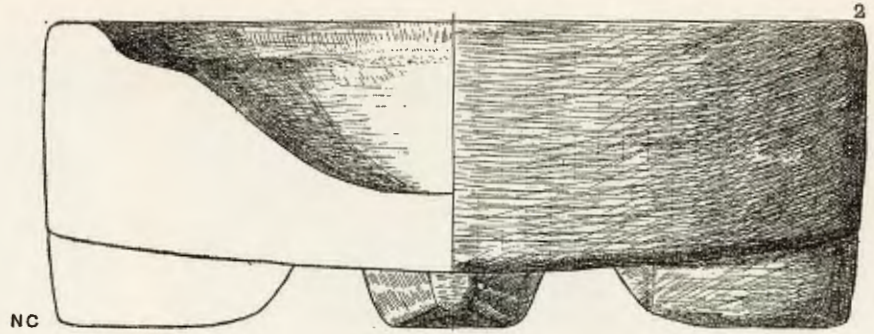
dump stone



MAM JAS



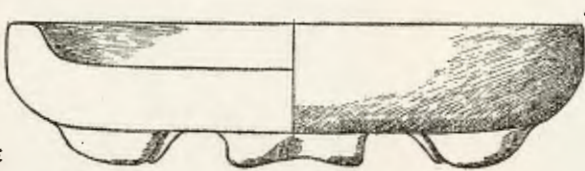
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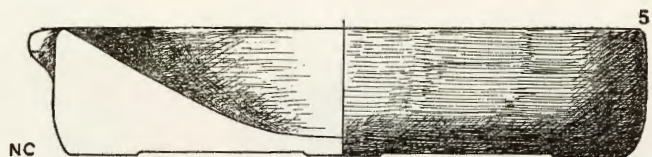
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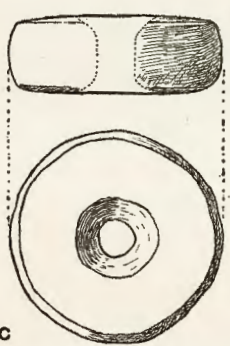
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E



NC



NC



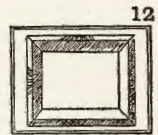
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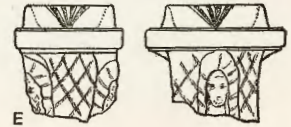
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E



12



E



NC



NC



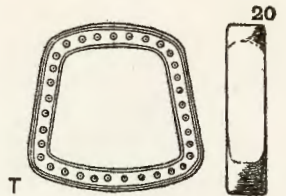
S



NC



U



T

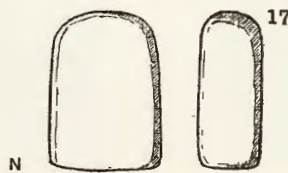
20



U



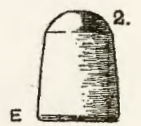
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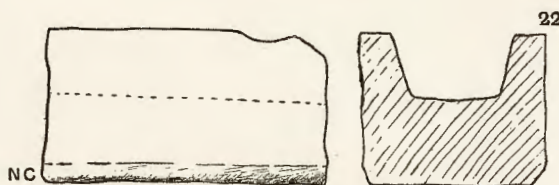
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E



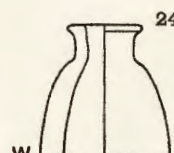
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NC



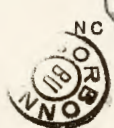
S

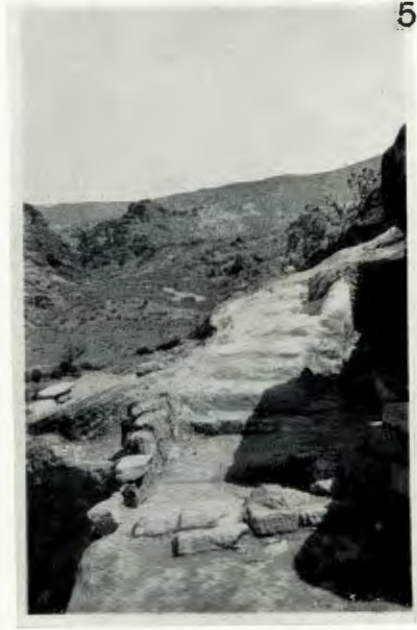


W



JCE





1. PARTIALLY CLEARED.  
2. CLEARED.  
3. BLOCKED S. STAIRWAY.  
4. PARAPET FROM ABOVE.

5. N. STAIRWAY FROM PARAPET.  
6. LIMESTONE FACING WALL.  
7. CONTINUATION OF N. STAIRWAY.





1. COVERED TOMB SHAFT.  
 2. COVERING REMOVED.  
 3. INTERIOR SHOWING LOCULUS.  
 4. INTERIOR SHOWING DEBRIS.

5. SHAFT AND DRAINAGE CHANNEL.  
 6. E. CHAMBER AND ALTAR.  
 7. TETHERING HOLE IN ALTAR.





1. PRECINCT WALLS.  
 2. GENERAL VIEW.  
 3. LOOKING TOWARDS UMM AL BIYARA.  
 4. E. CHAMBER CLEARED.

5. E. CHAMBER FROM ABOVE.  
 6. E. CHAMBER SHOWING PILASTER.  
 7. W. CHAMBER PARTIALLY CLEARED.  
 8. LOOKING NORTH FROM W. CHAMBER.



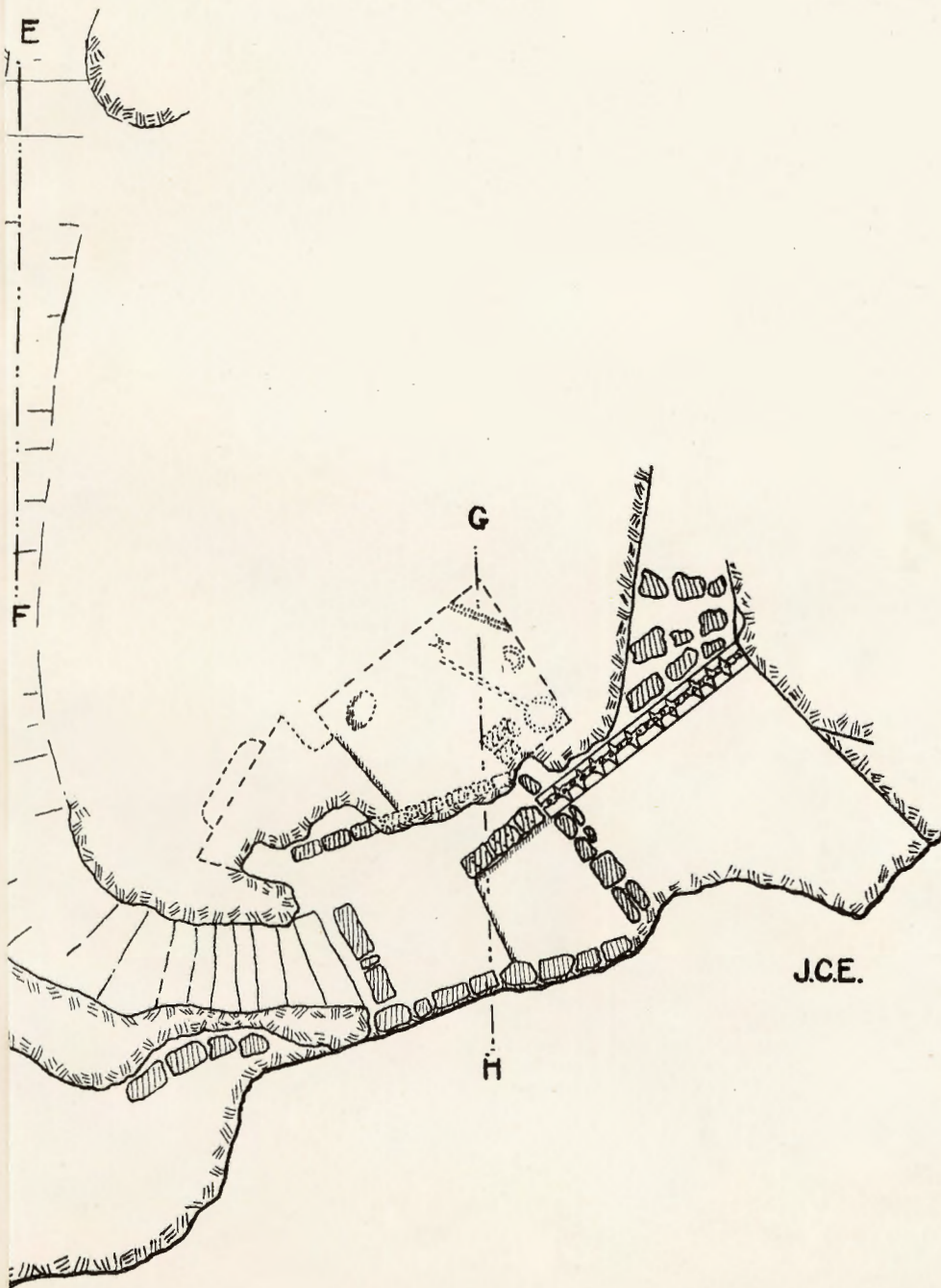


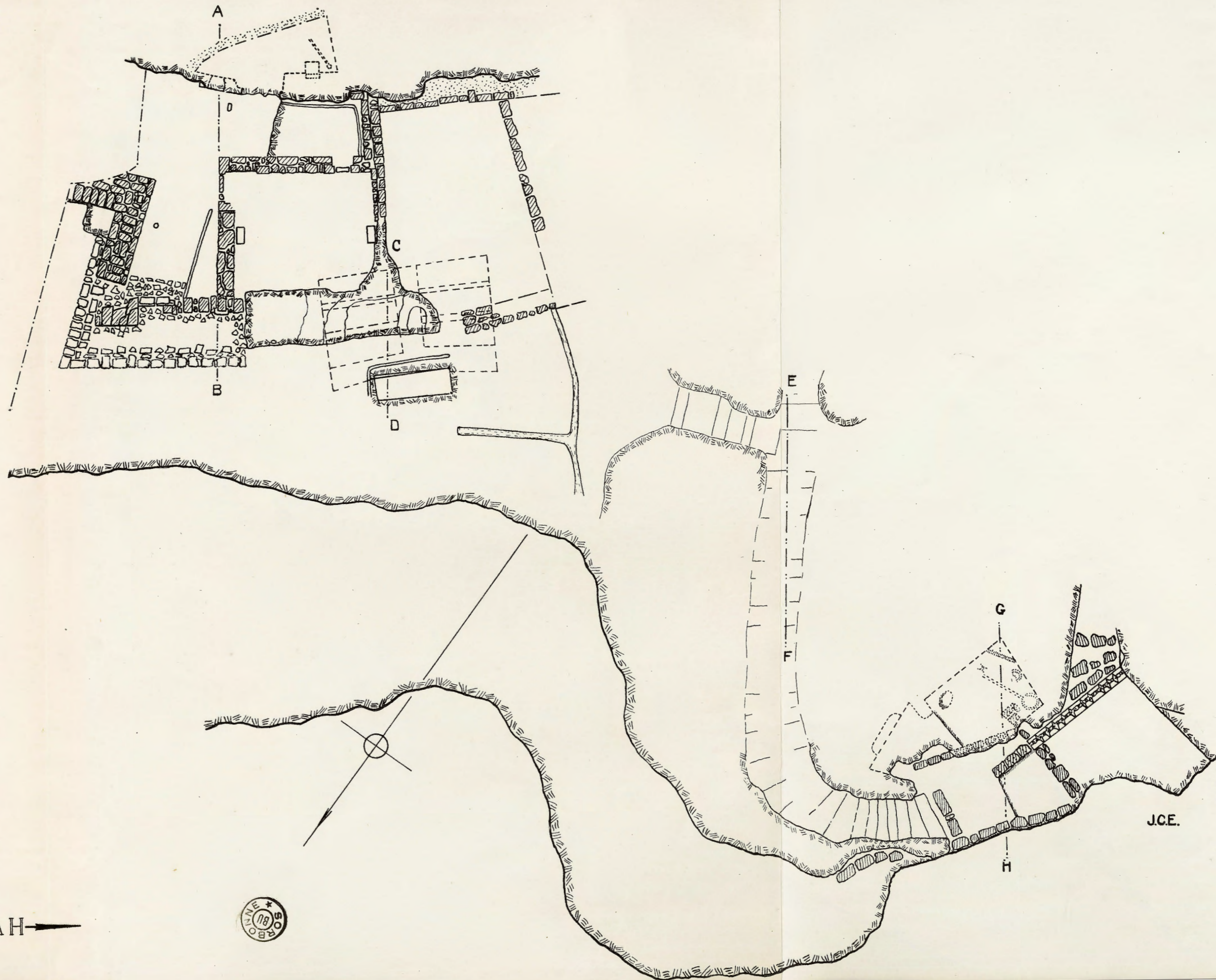
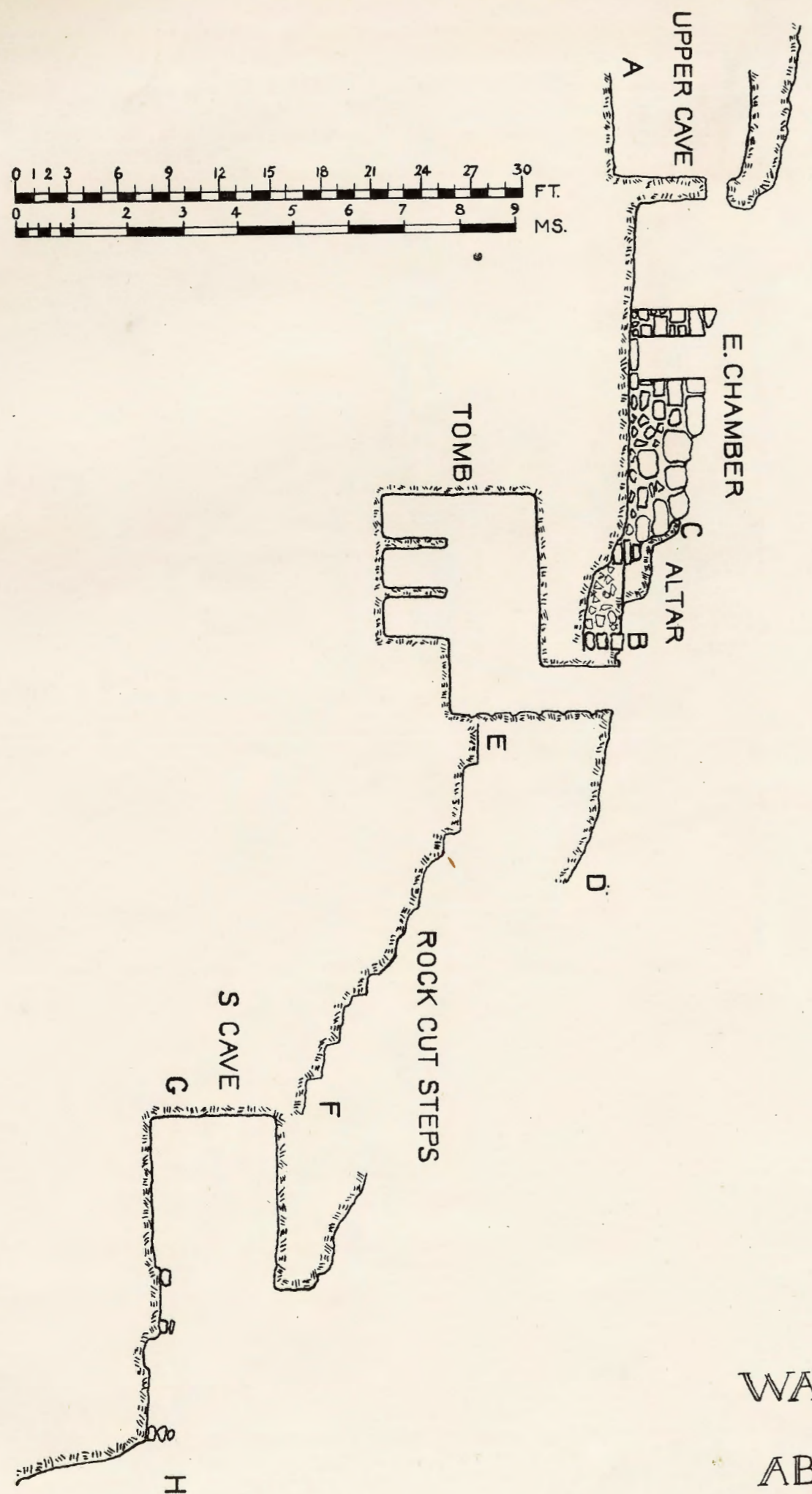
1. CAVE DOORWAY, BLOCKED.  
 2. CAVE DOORWAY, OPENED UP.  
 3. VIEW FROM CAVE DOORWAY.  
 4. DETAIL OF LATE SANDSTONE WALL.

5. CAVE DOORWAY, SHOWING REBATING.  
 6. E. CHAMBER, E. DOOR DETAIL.  
 7. EARLY SANDSTONE PILLAR, DETAIL.  
 8. EARLY LIMESTONE WALL, DETAIL.






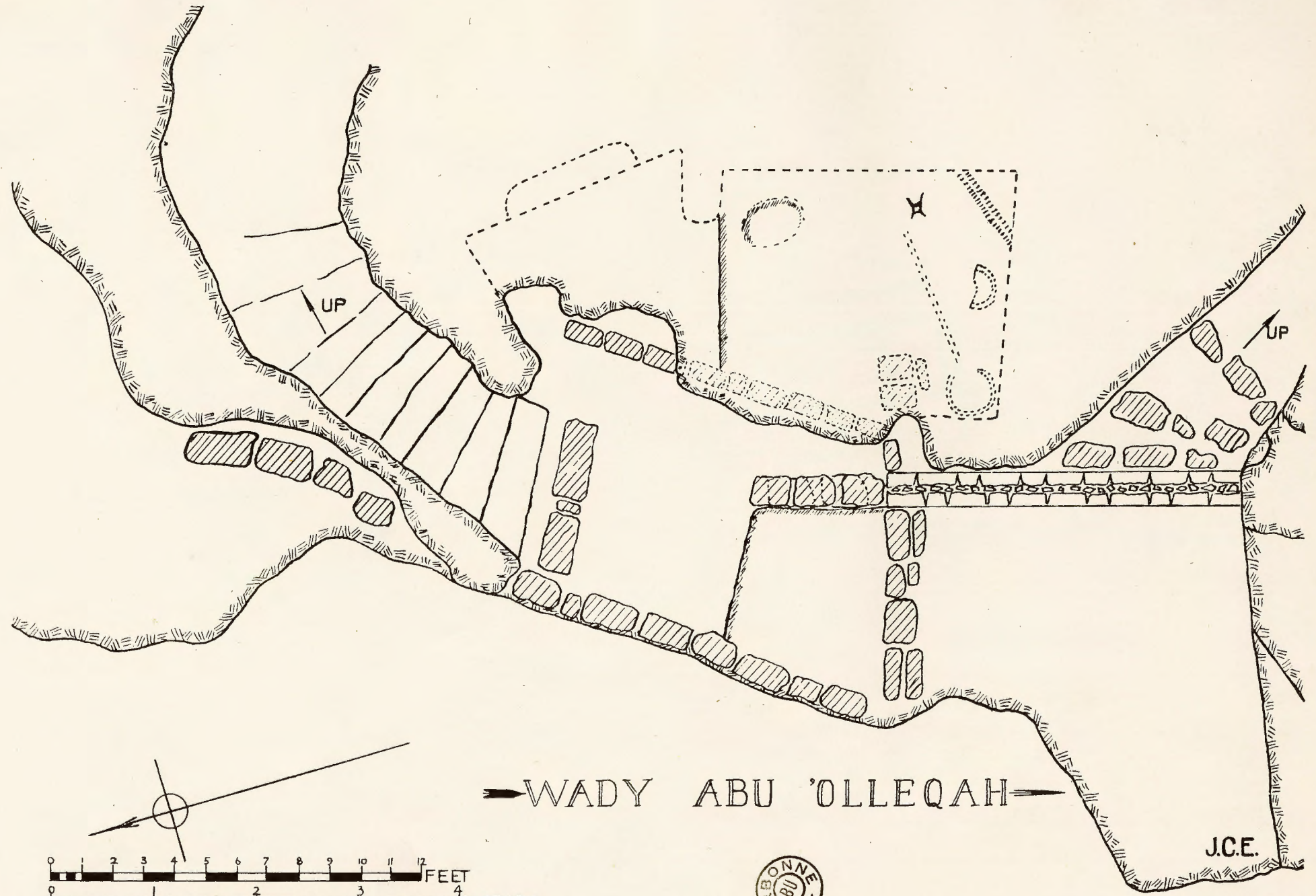






TO TOMB SHAFT  
THIRTY EIGHT FEET

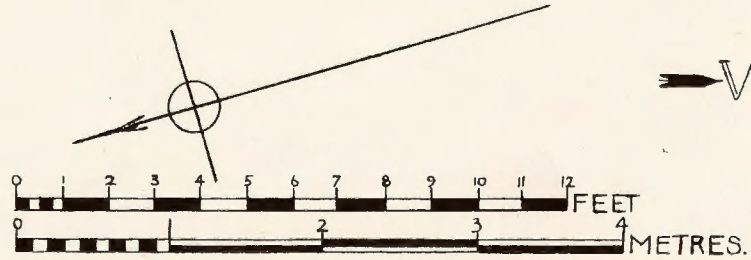
SANDSTONE	
LIMESTONE	
ROCK	

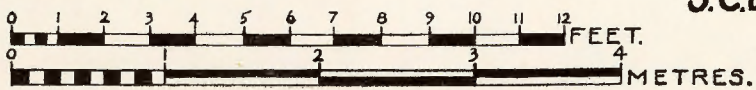
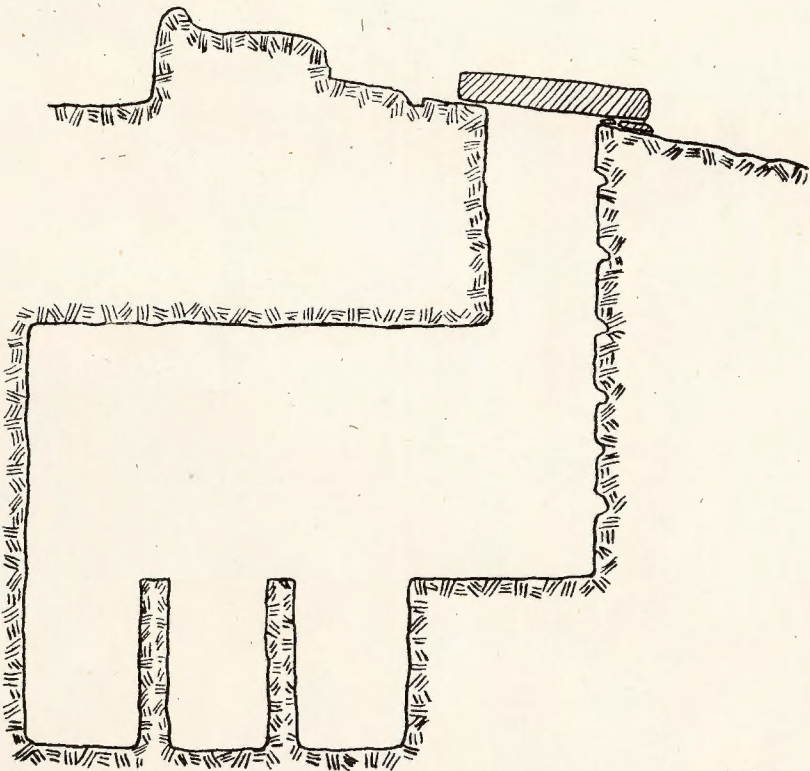
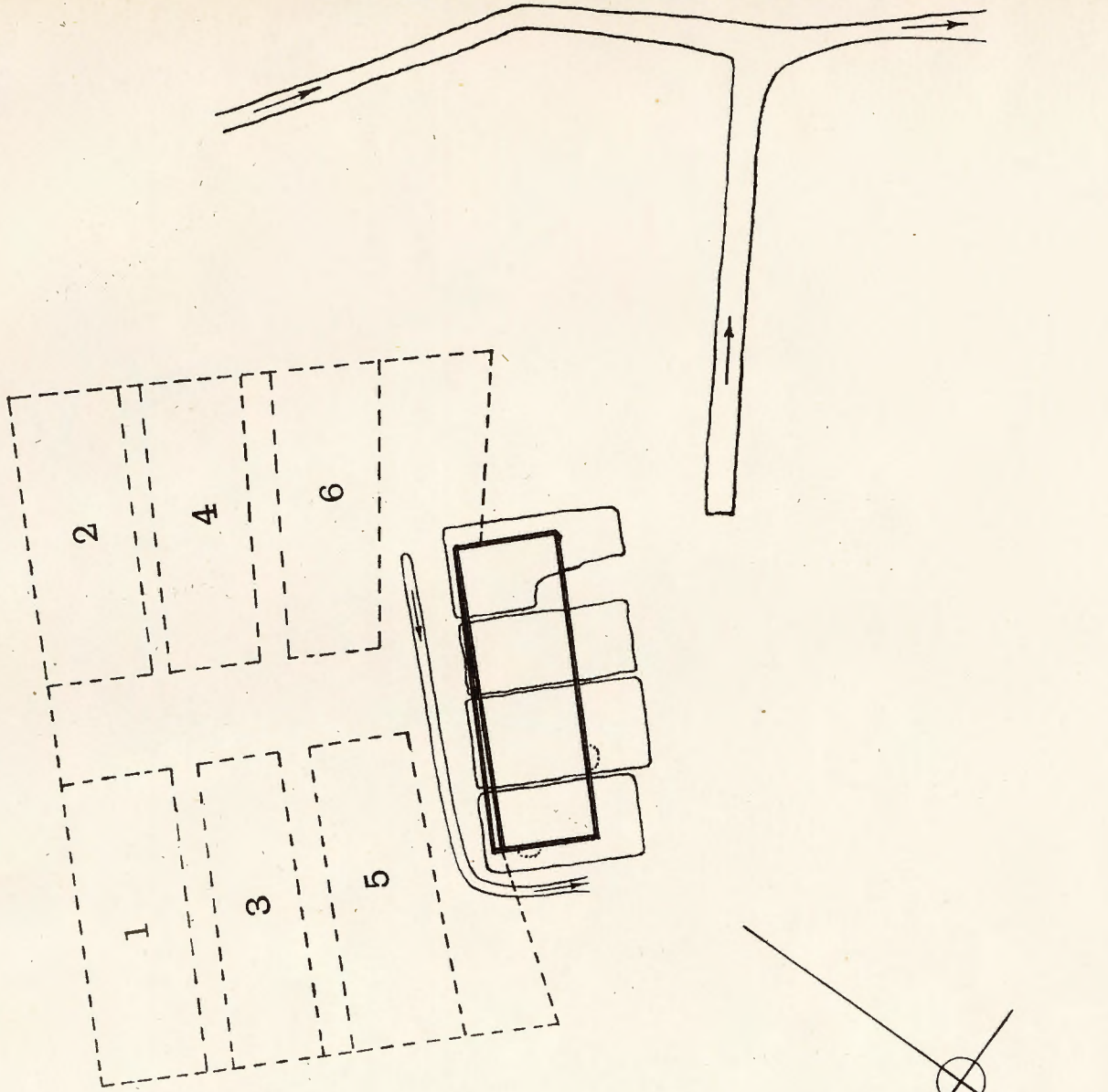


SOUTH CAVE. PLAN

WADY ABU 'OLLEQAH

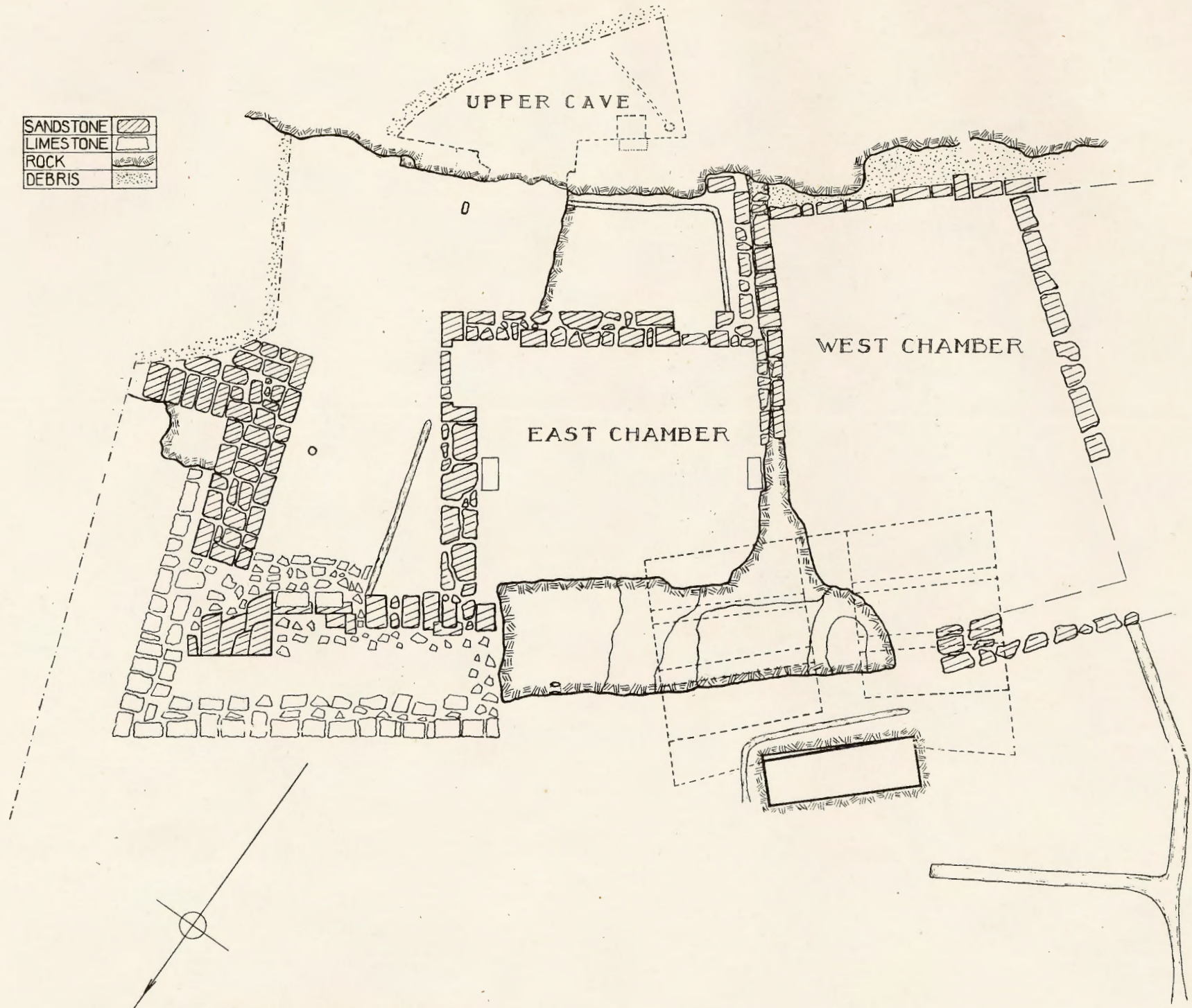
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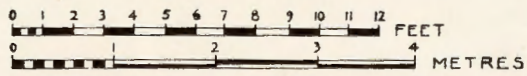


J.C.E.

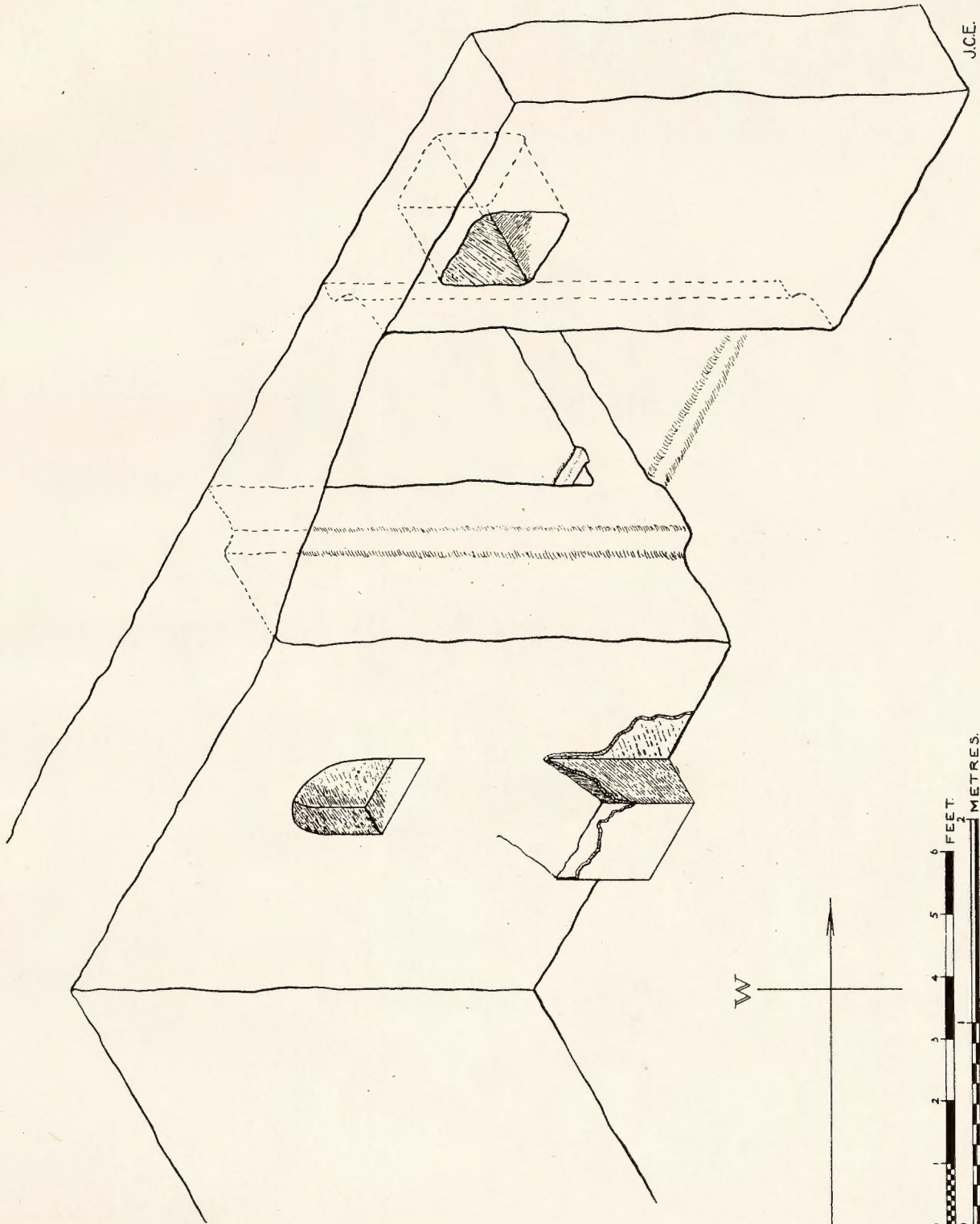
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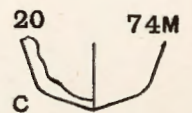
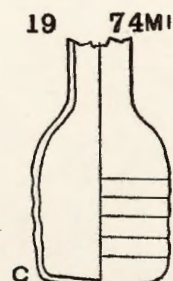
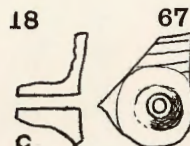
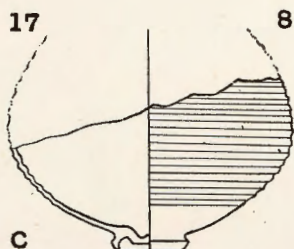
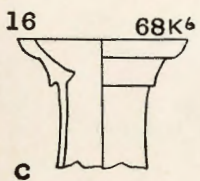
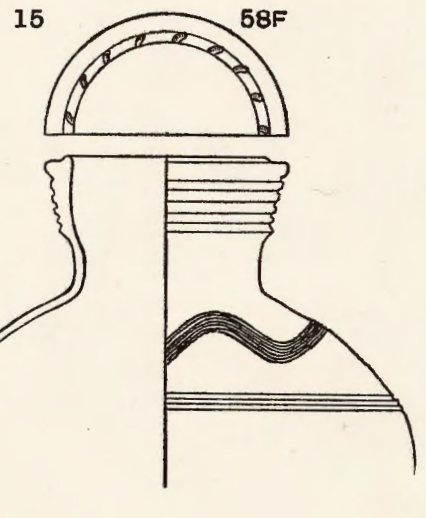
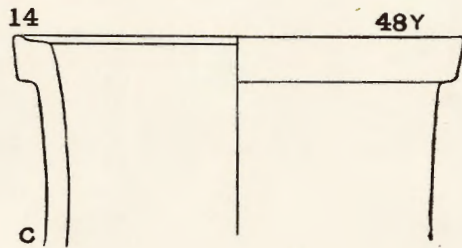
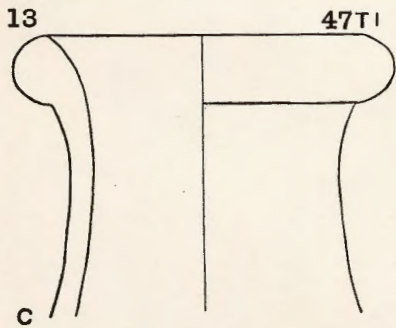
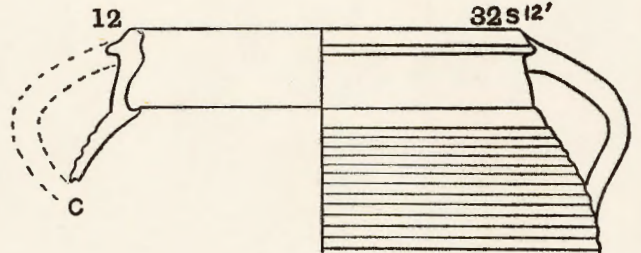
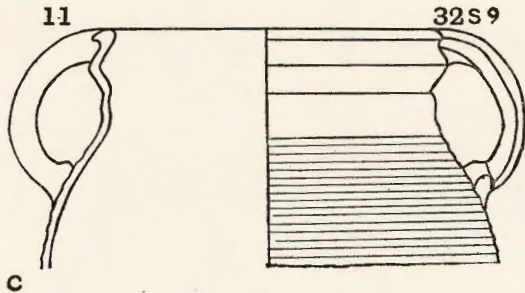
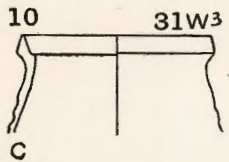
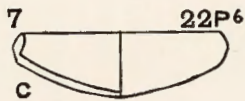
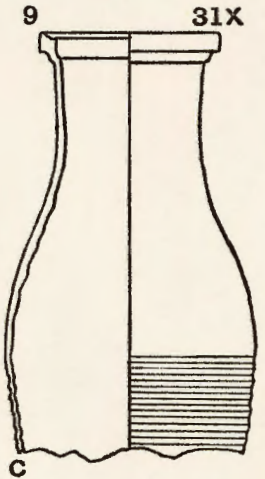
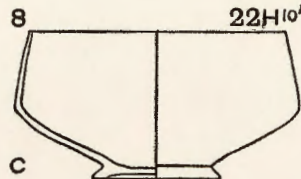
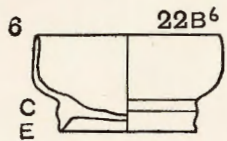
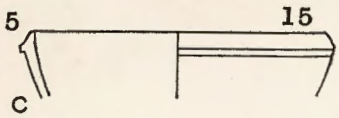
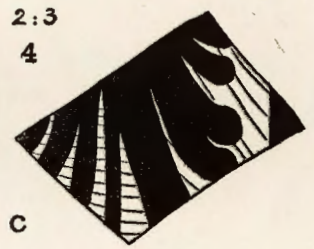
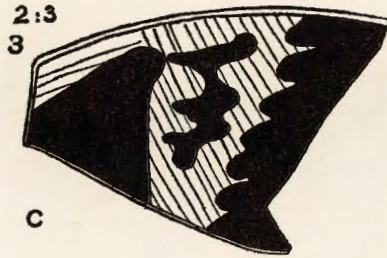
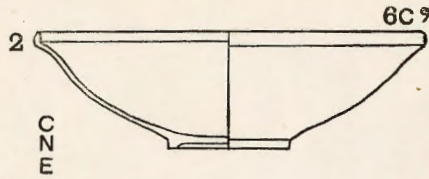
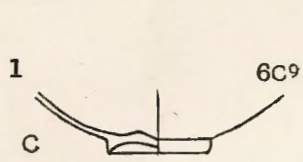


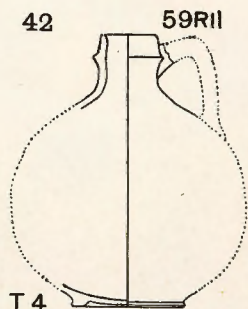
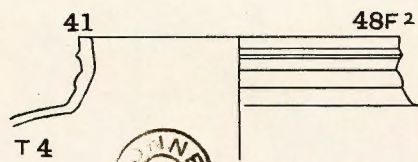
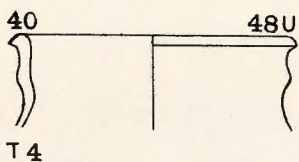
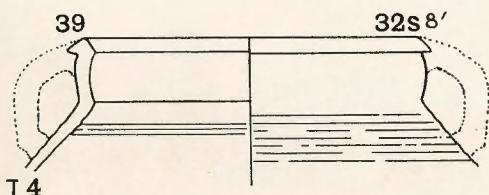
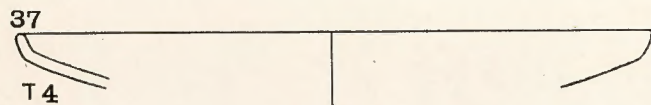
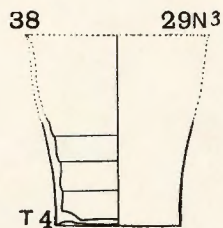
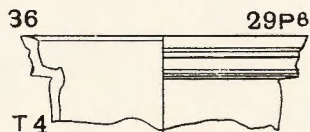
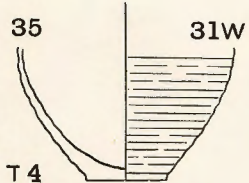
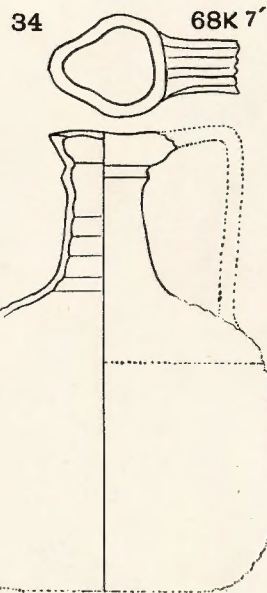
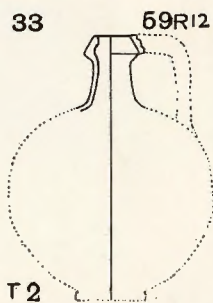
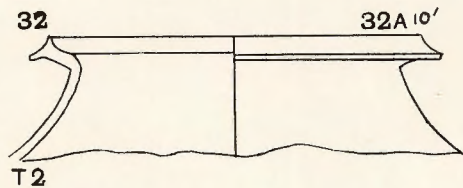
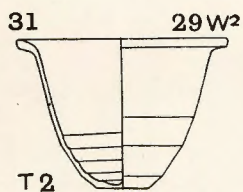
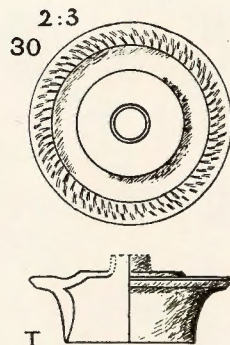
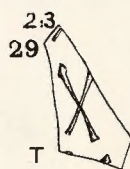
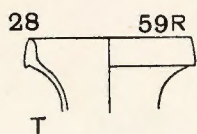
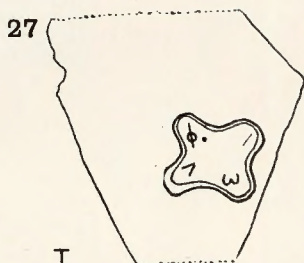
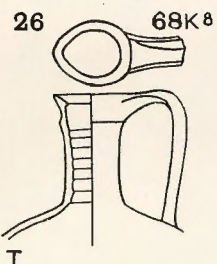
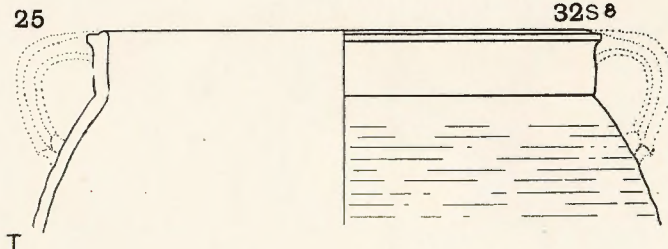
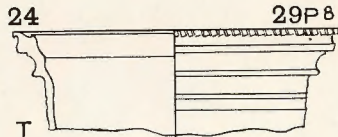
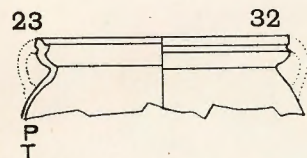
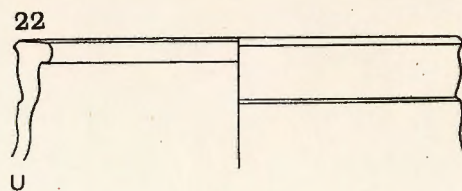
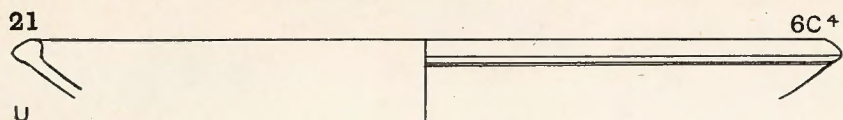
EAST AND WEST CHAMBERS. PLAN



J.C.E.



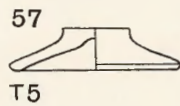
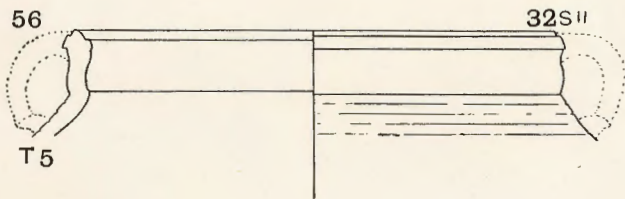
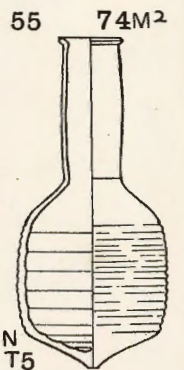
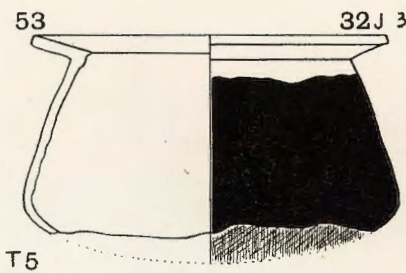
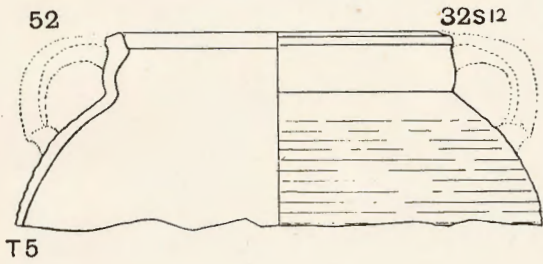
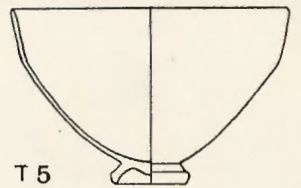
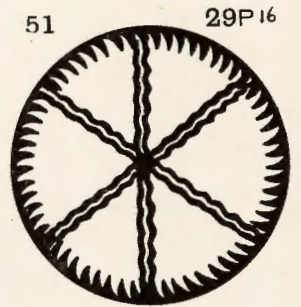
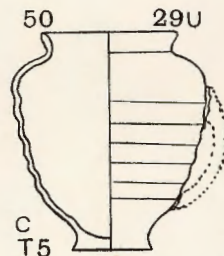
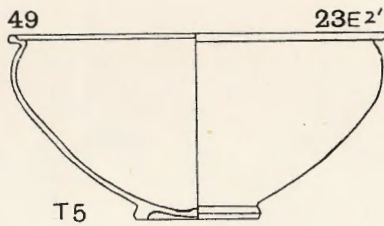
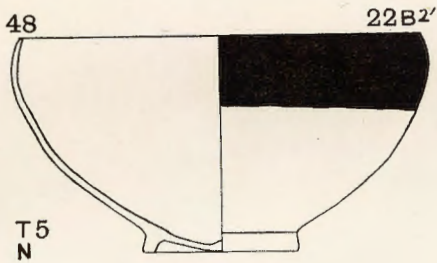
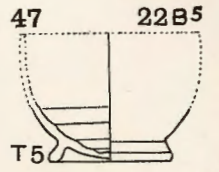
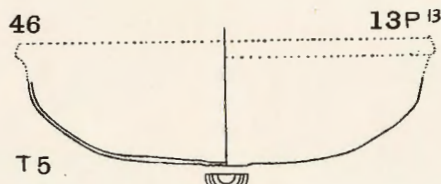
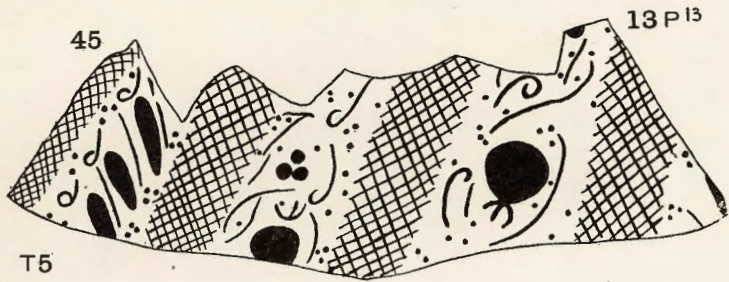
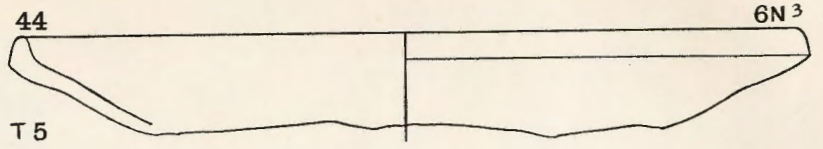
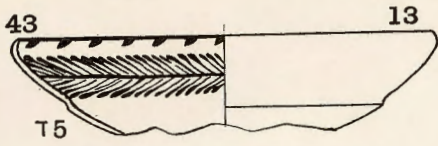




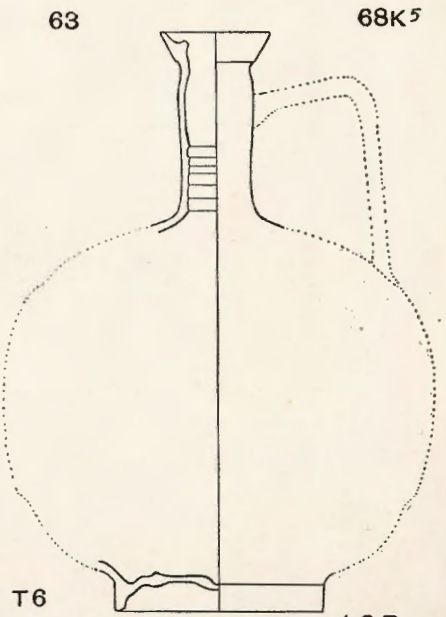
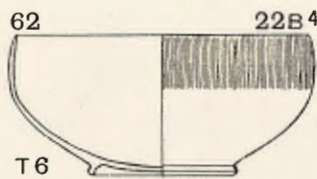
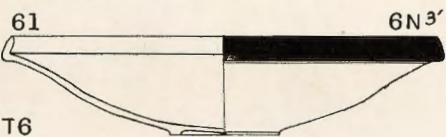
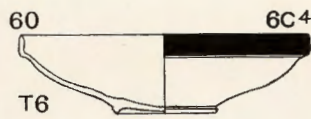
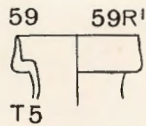
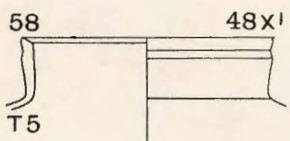


1:3

TOMB (POTTERY)



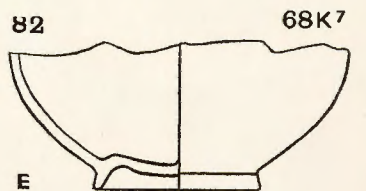
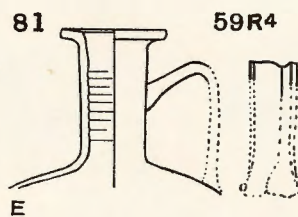
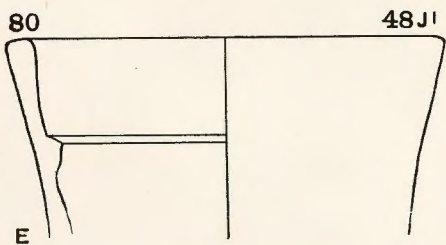
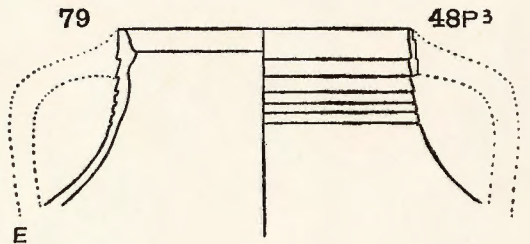
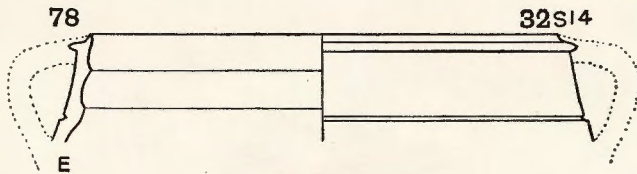
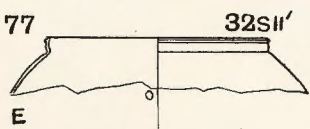
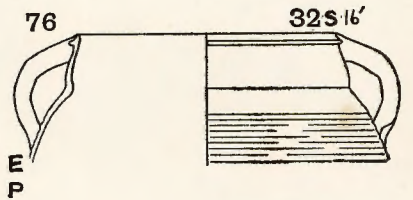
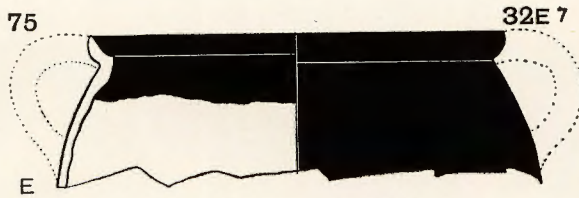
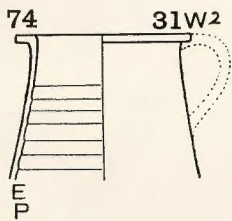
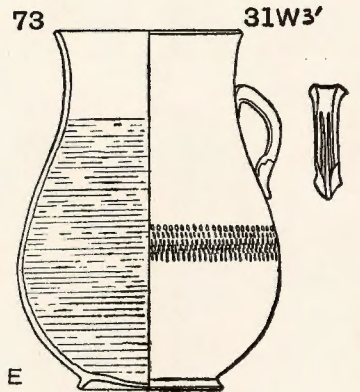
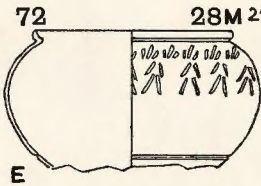
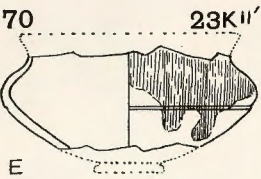
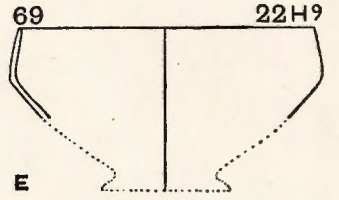
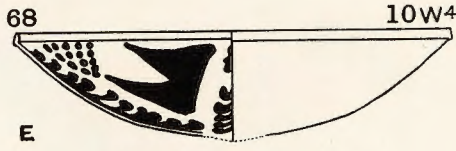
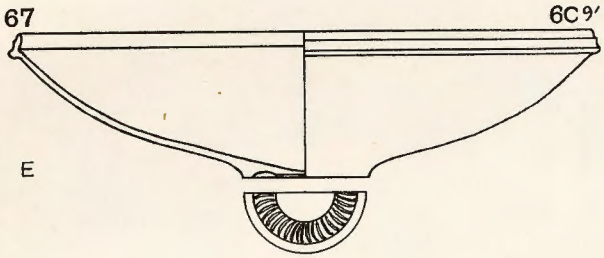
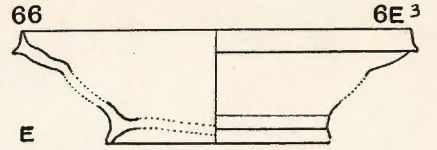
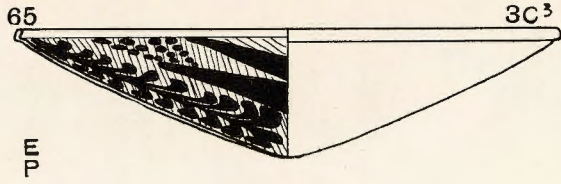
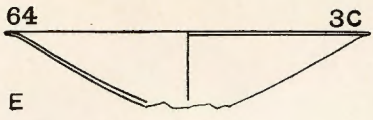
63



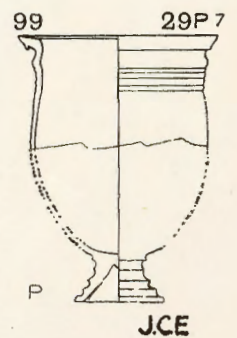
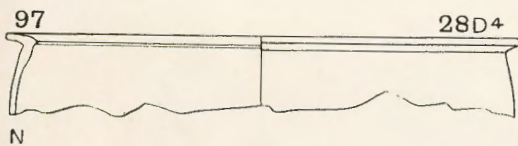
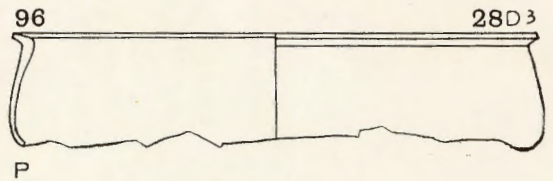
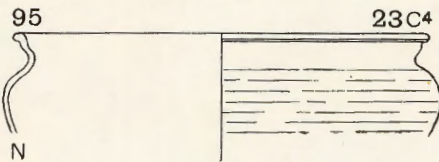
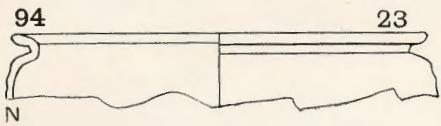
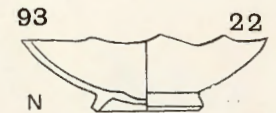
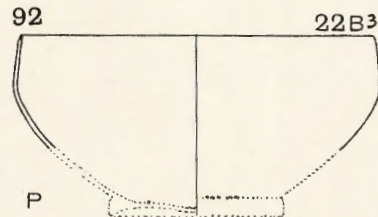
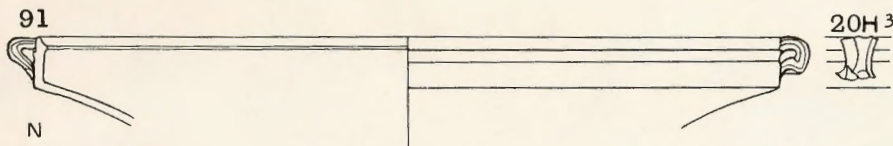
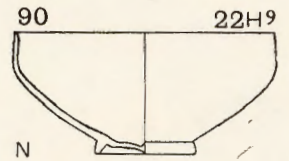
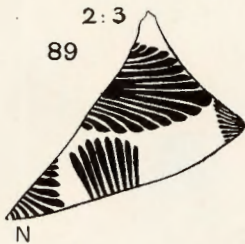
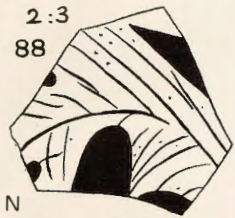
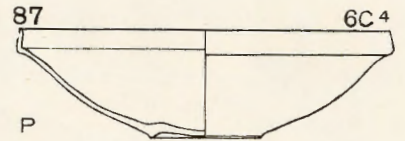
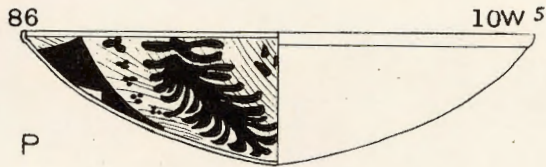
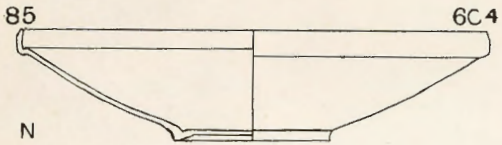
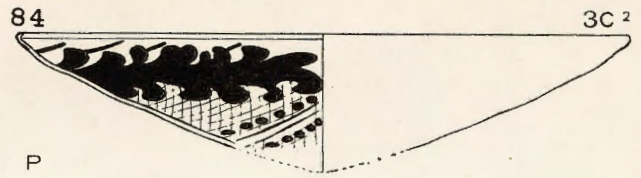
J.C.E.

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E. CHAMBER (POTTERY)



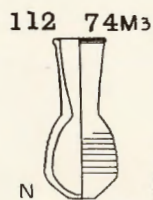
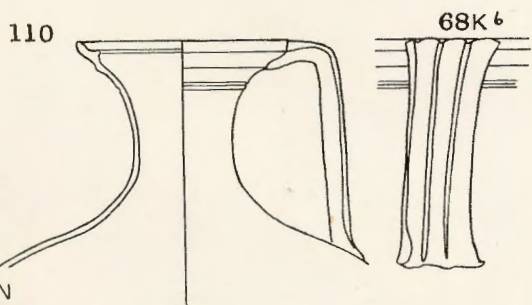
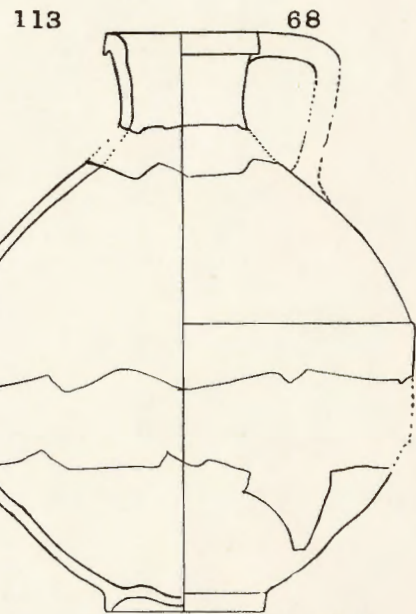
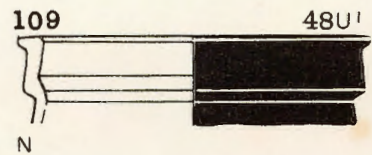
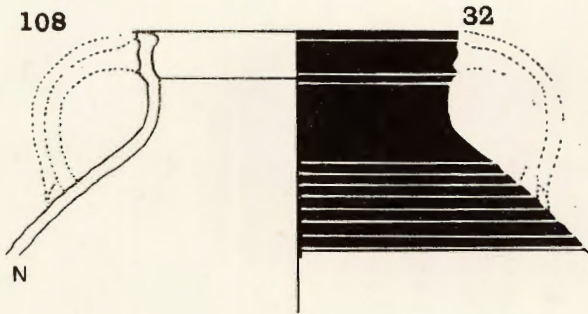
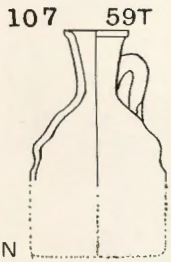
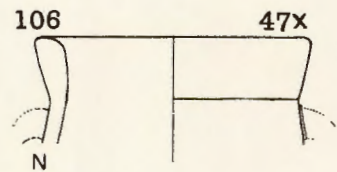
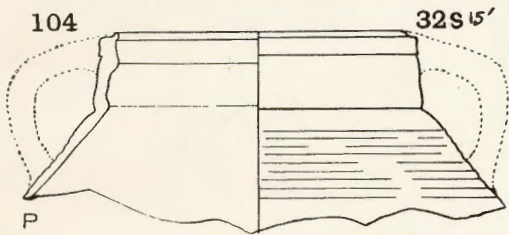
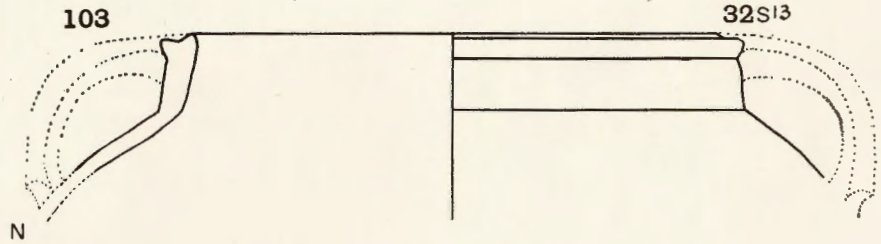
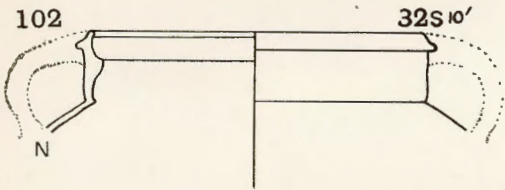
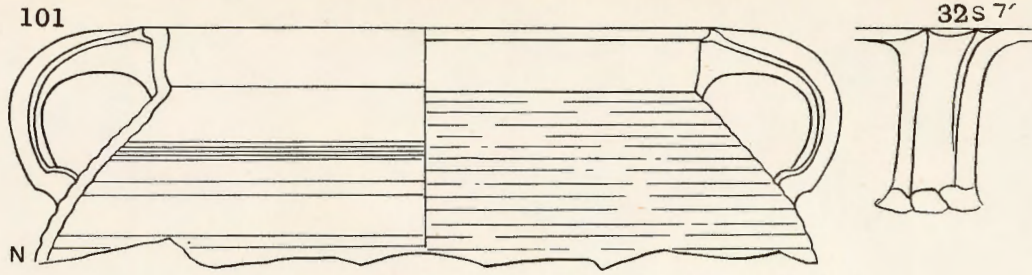
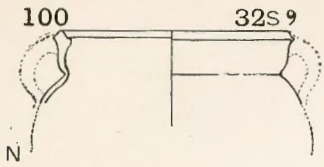
J.C.E.



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AREA N.E. OF EAST CHAMBER (POTTERY)

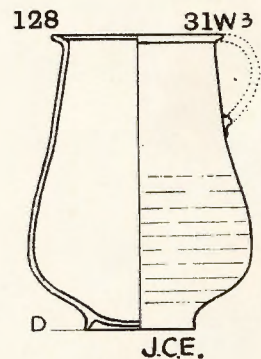
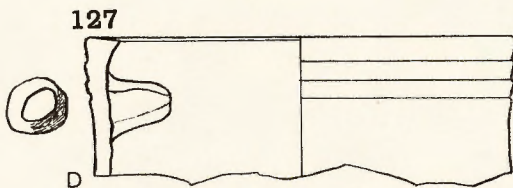
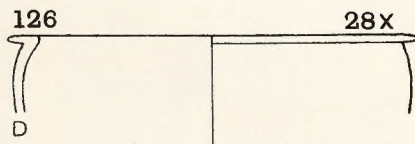
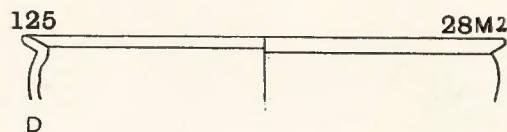
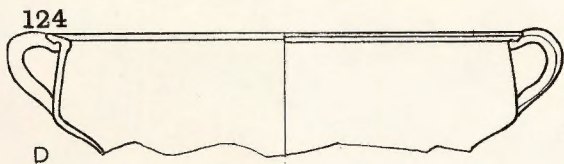
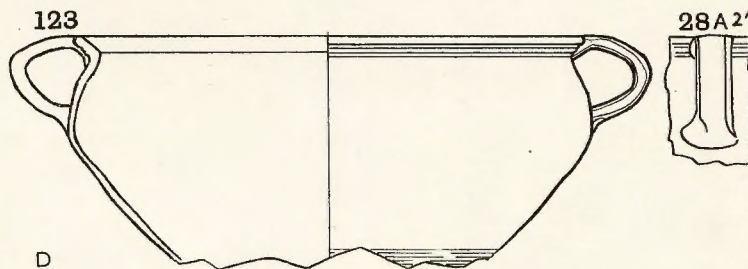
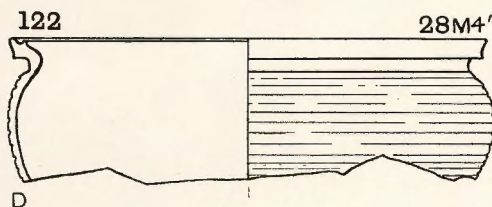
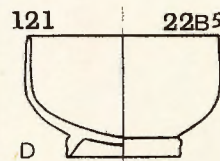
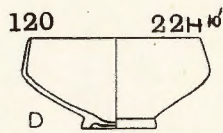
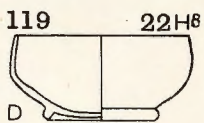
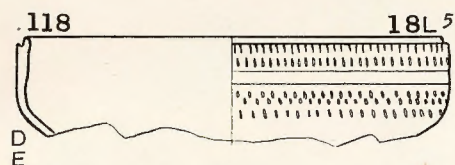
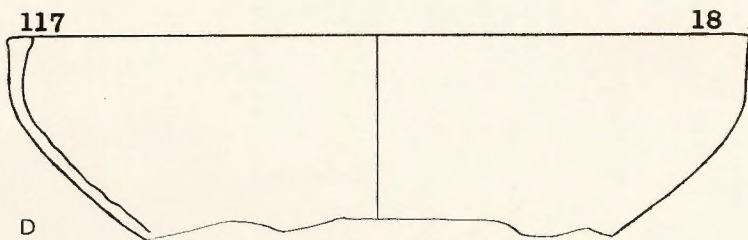
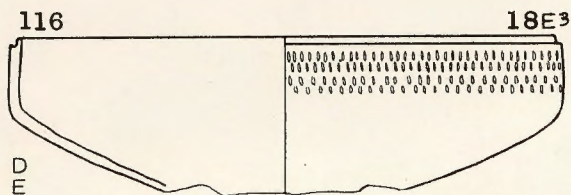
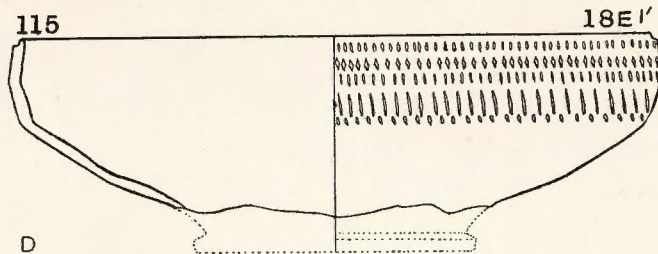
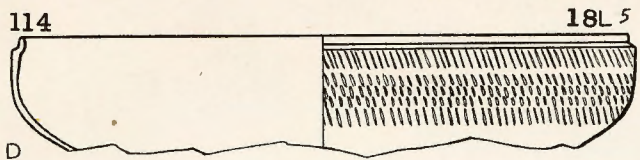
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J.C.E

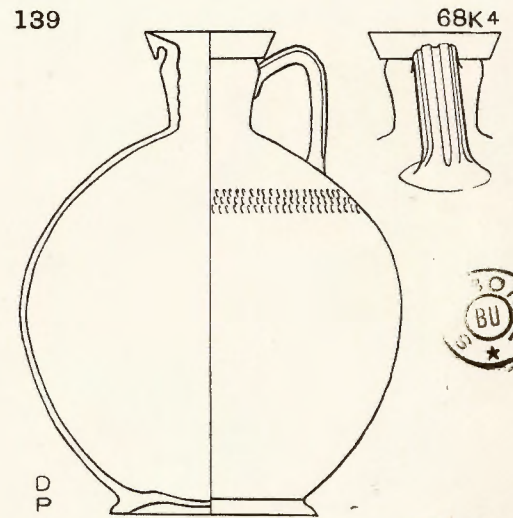
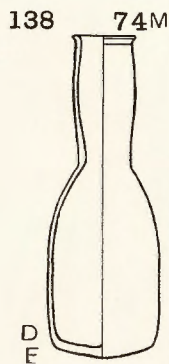
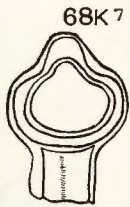
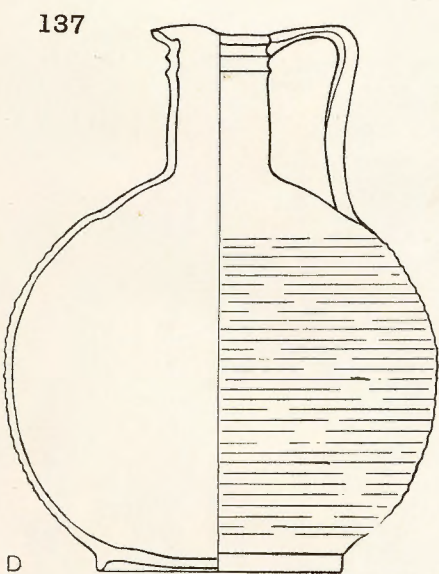
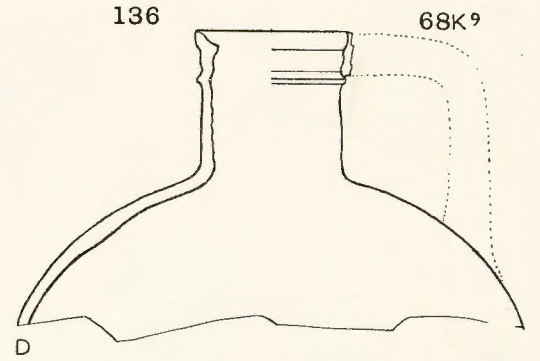
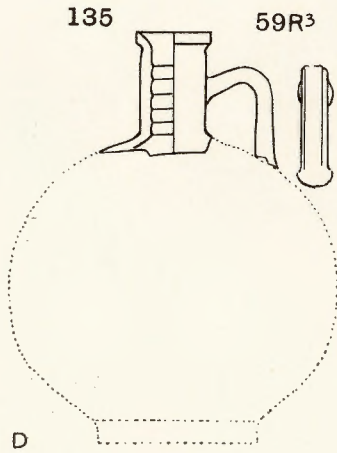
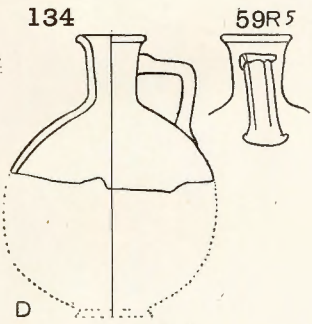
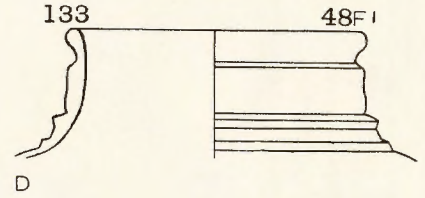
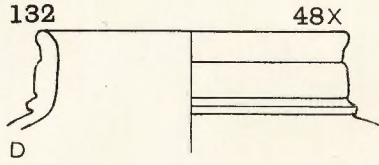
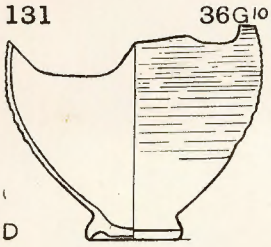
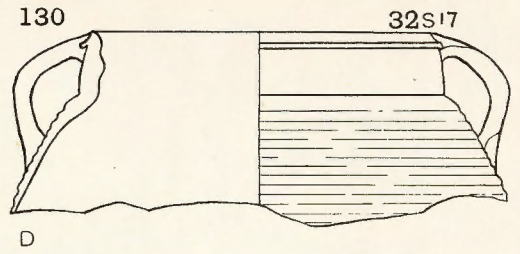
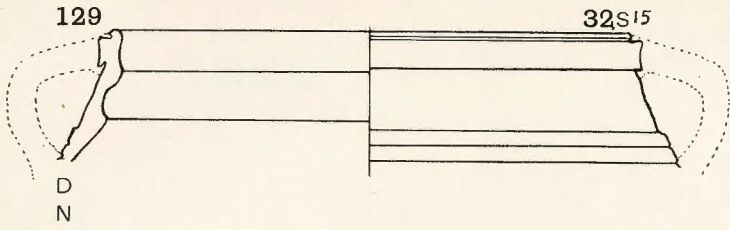
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WEST CHAMBER DUMP (POTTERY)

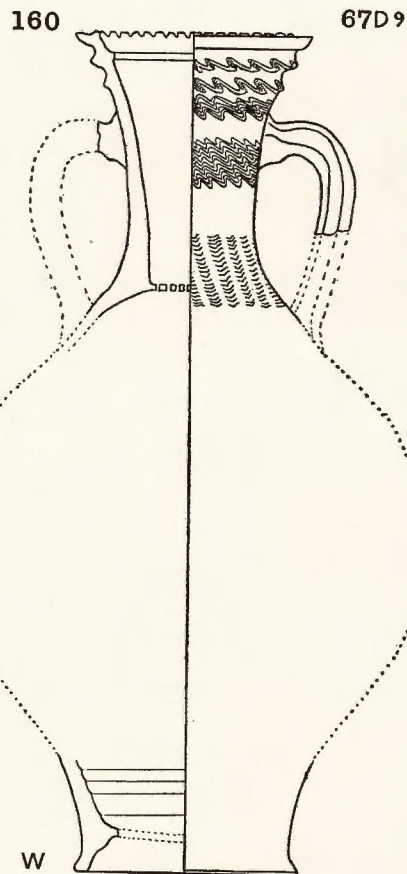
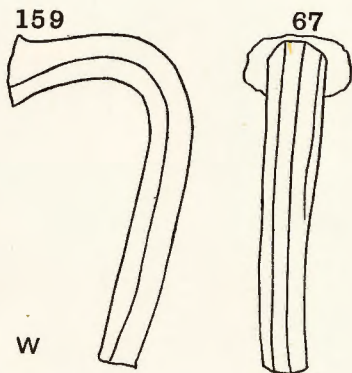
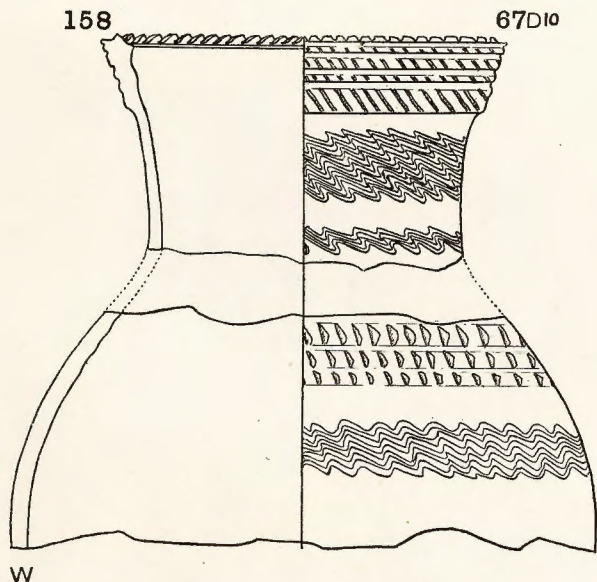
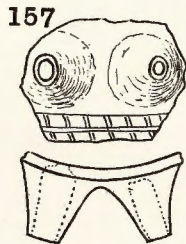
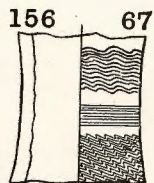
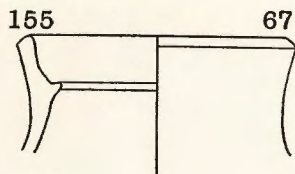
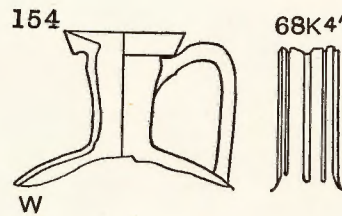
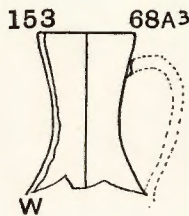
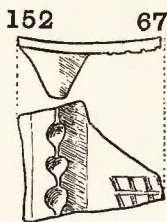
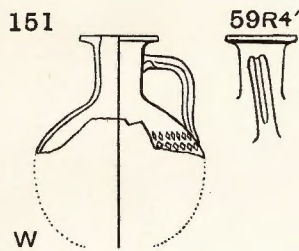
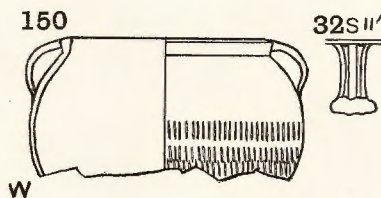
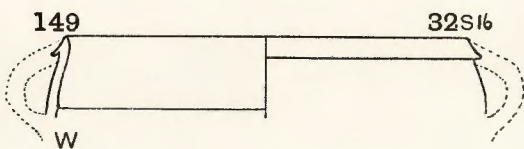
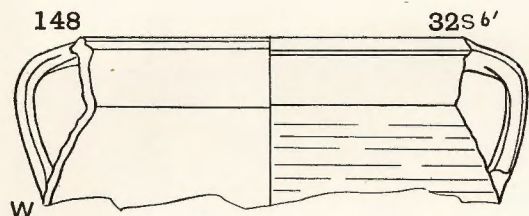
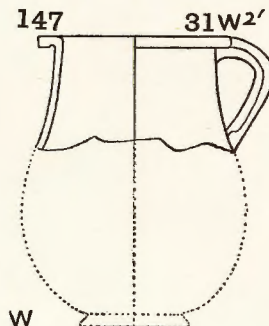
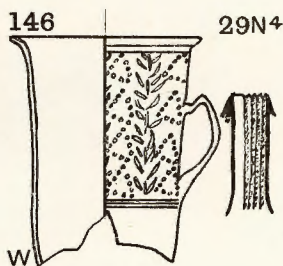
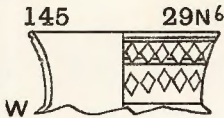
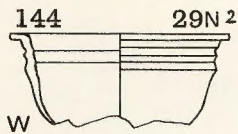
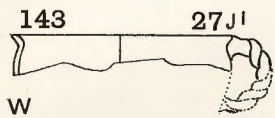
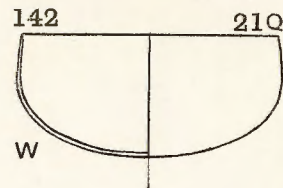
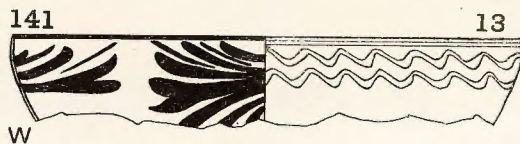
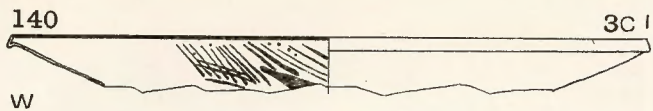


WEST CHAMBER DUMP (POTTERY)

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J.C.E.

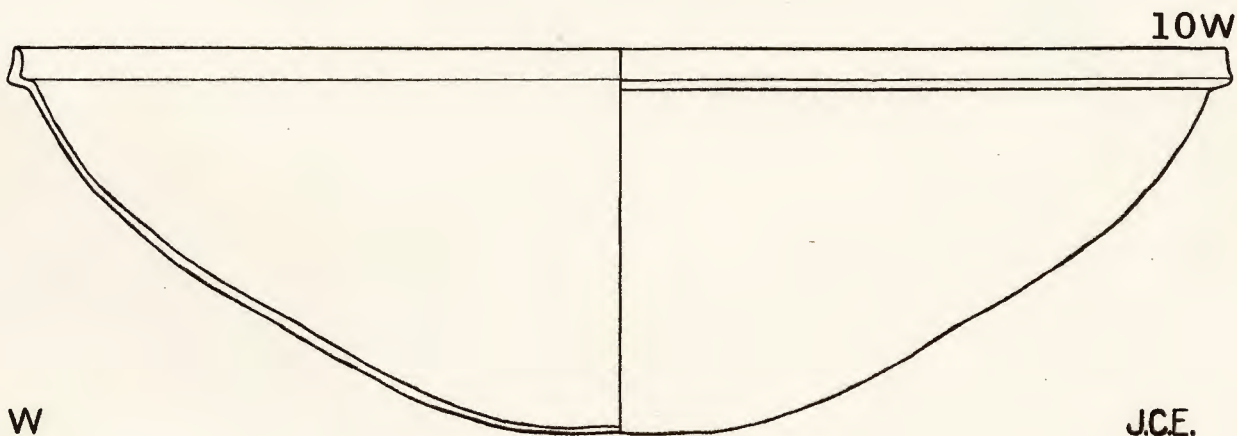
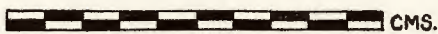


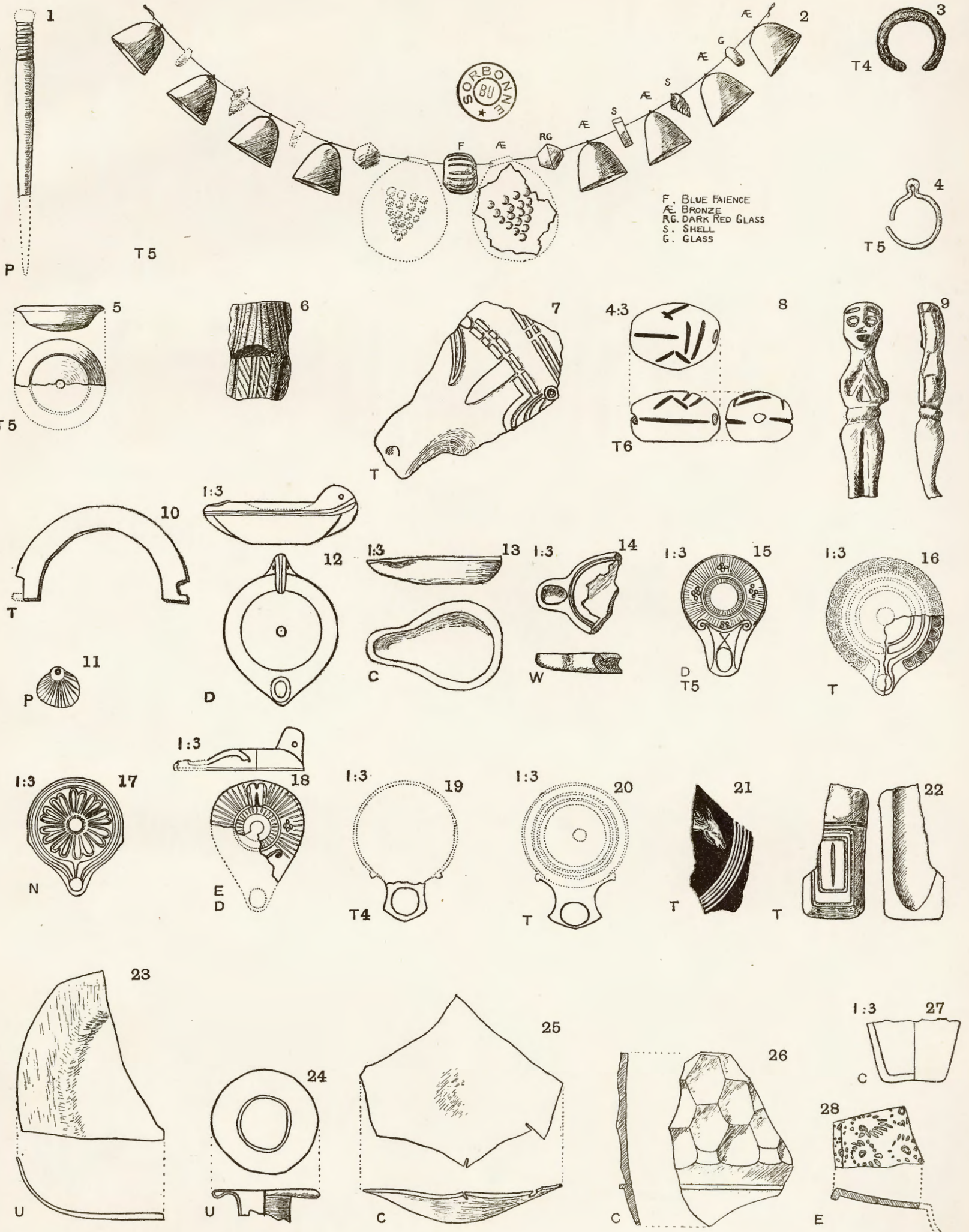


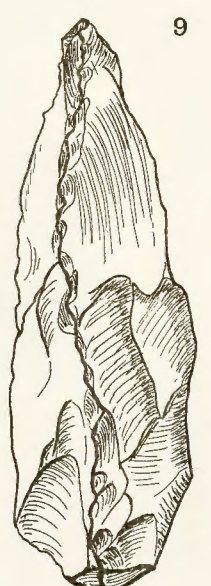
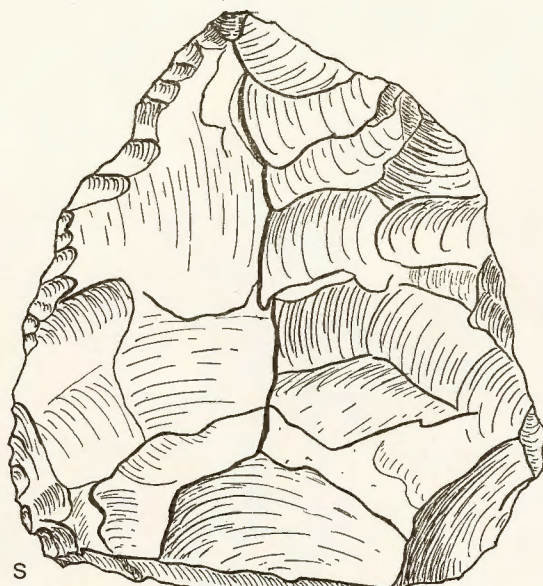
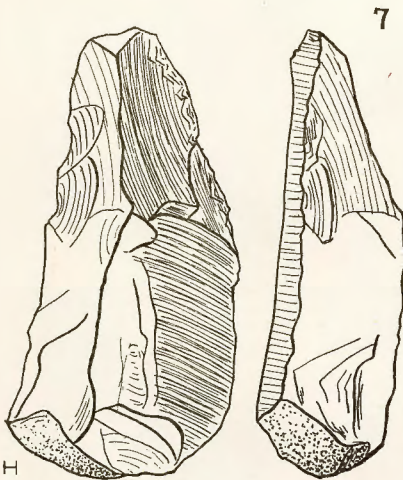
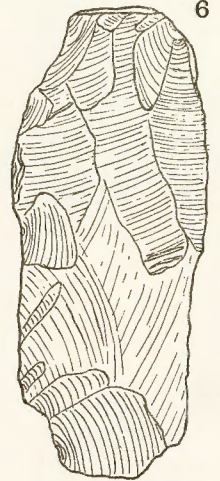
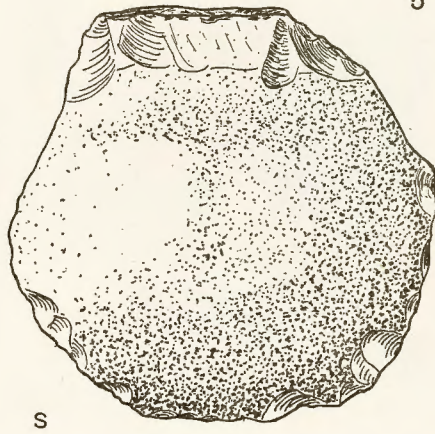
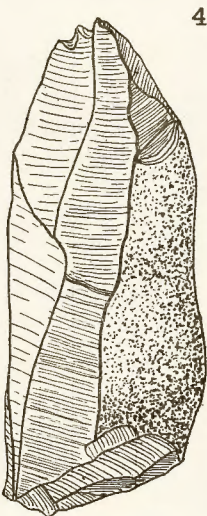
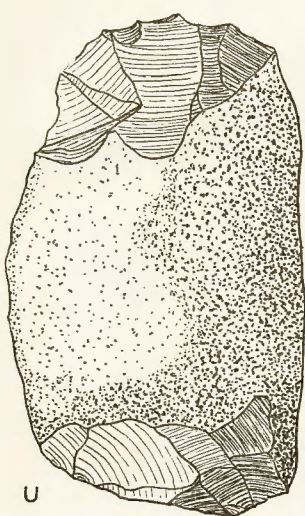
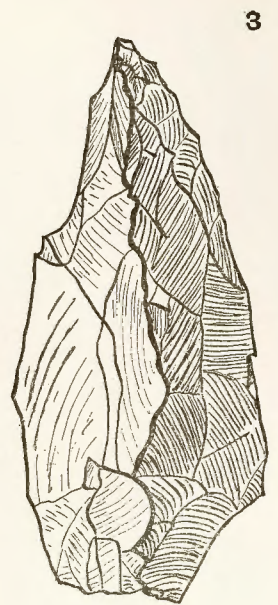
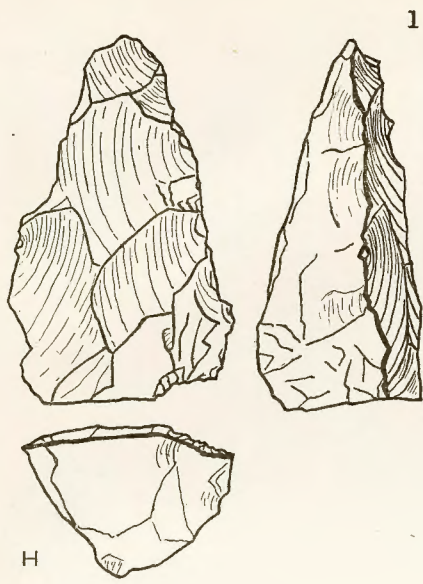
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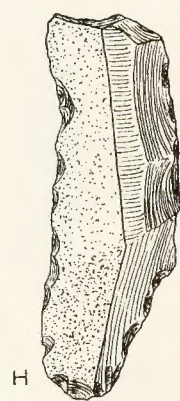
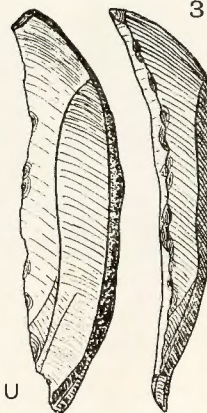
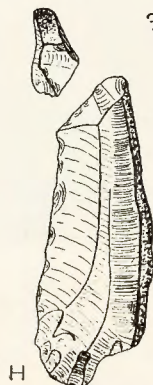
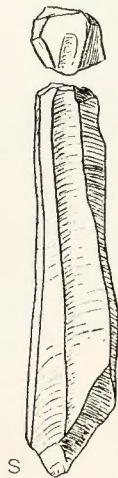
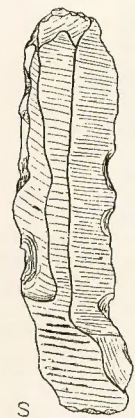
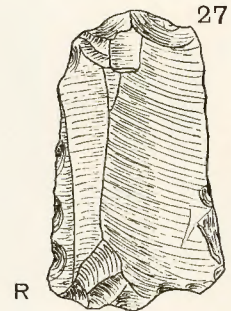
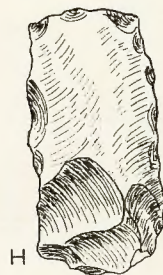
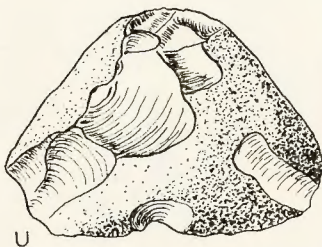
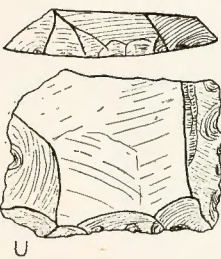
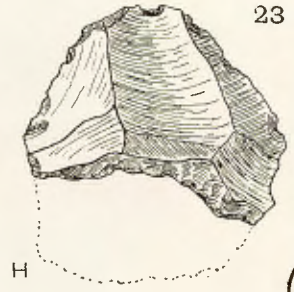
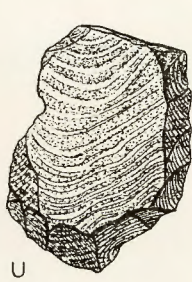
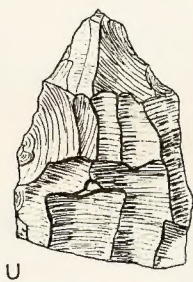
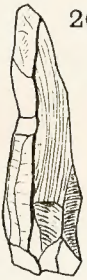
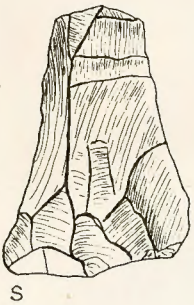
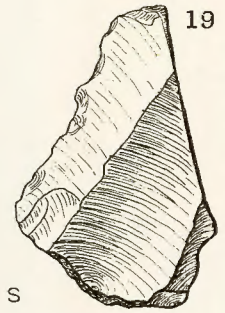
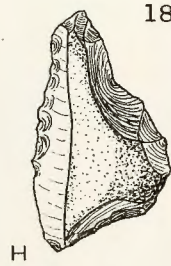
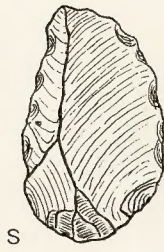
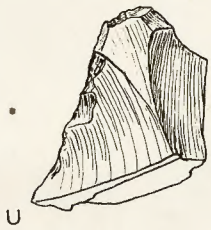
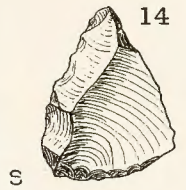
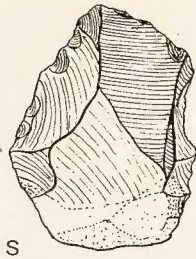
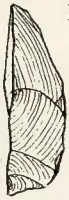
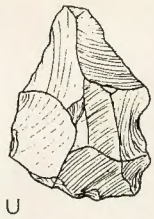
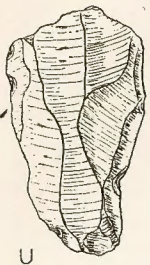
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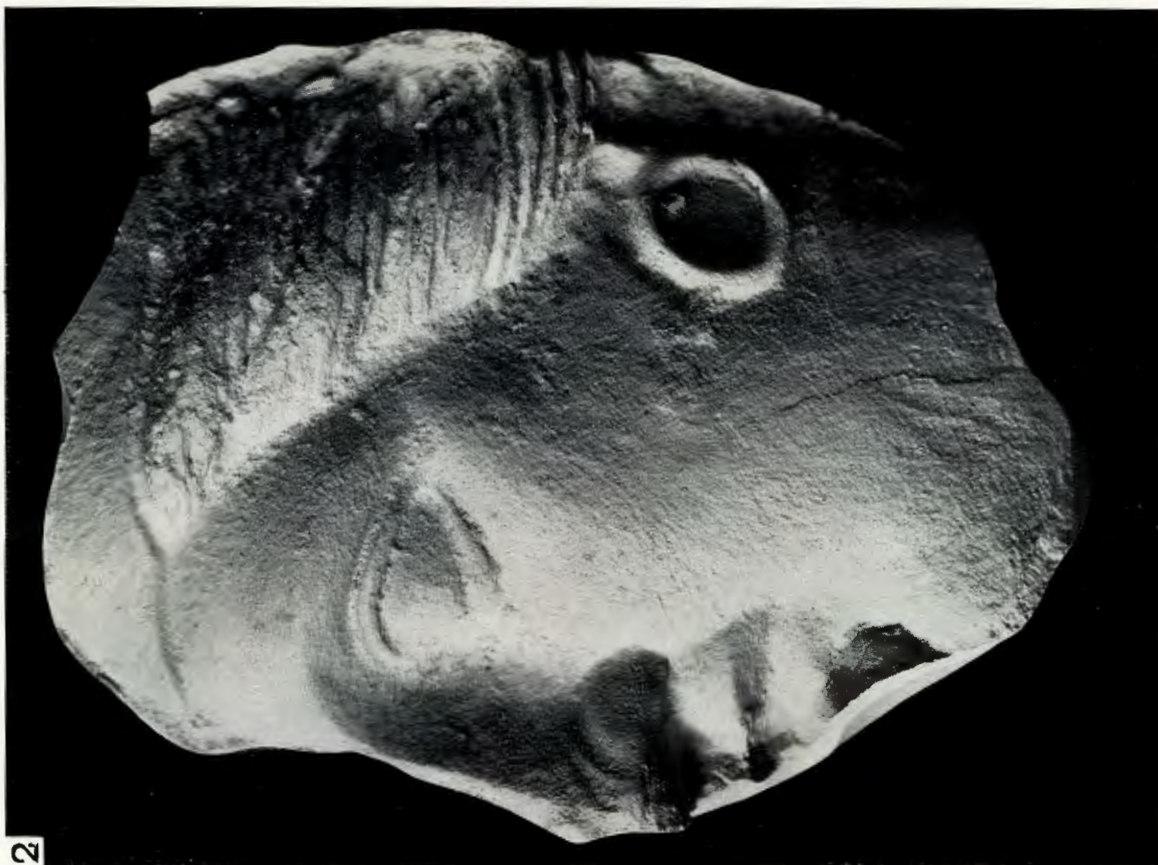












CAST FROM MOULD OF FEMALE HEAD





1. MOULD, SOUTH CAVE.  
2. CAST FROM MOULD.

3. NABATAEAN KING.  
4. COIN OF MALCHUS.  
5. COIN OF OBODAS.



BRONZE HEAD OF NABATAEAN KING



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