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ANTHROPOLOGY MEMOIRS

VOLUME I

FIELD MUSEUM-OXFORD UNIVERSITY JOINT EXPEDITION

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FIELD MUSEUM OF NATURAL HISTORY

ANTHROPOLOGY, MEMOIRS VOLUME I, NO. 1

REPORT ON THE EXCAVATION OF THE "A" CEMETERY AT KISH, MESOPOTAMIA

PART I

BY

ERNEST MACKAY

WITH PREFACE BY STEPHEN LANGDON

20 Plates

FIELD MUSEUM-OXFORD UNIVERSITY JOINT EXPEDITION

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PREFACE

The technical description of the pottery, metal and stone implements and other details of the more material side of the archæological discoveries, found at Kish by the Field Museum-Oxford University joint expedition, has been assigned to the competent hands of Mr. Ernest Mackay, our excavator. Architectural plans of all buildings and technical discussion thereof are also entrusted to the excavator, who will furnish a volume on this subject as soon as the more important buildings are completed. It is proposed that Field Museum will undertake to publish all volumes on this aspect of the expedition. The decipherment of inscriptions and inscribed tablets and their publication will be undertaken by the Department of Assyriology in the University of Oxford. A volume on the history of the famous city of Kish written by myself has already appeared, under the title "Excavations at Kish in 1922–24" (Paris, Paul Geuthner, 1925). To this volume the reader is referred for the historical, religious, and cultural importance of the discoveries up to April, 1924. The cuneiform texts will be published in future volumes of the "Oxford Editions of Cuneiform Texts."

In the present volume, Mr. Mackay deals almost exclusively with the pottery and implements found at the Sumerian palace. The very extensive collection of pottery found in the tablet hill, chiefly by me, and still more numerous groups of the same kind found this season, will be published and described in a succeeding volume. This pottery is all from the late period, seventh to fourth centuries B.C. A general description of most of the objects found in connection with the rooms stored with inscribed tablets will be found in the volume referred to above.

When the complete description of the archæological discoveries and architectural plans of the great Sumerian palace at Mound "A" shall have been made public, the importance of this part of our excavations will be found to be unique and unexpectedly great. This building furnishes a perfect example of early Sumerian architectural design upon a grand scale. We have unquestionably found the palace from which the oldest and the mightiest dynasties of Sumer ruled within the changing limits of their ancient kingdoms, from the most remote period of human history to the founding of the empire of Agade in the twenty-eighth century B.C. The great outer court of this palace, with its wide sweep of alcoved walls, fine flight of stairs and imposing row of pillars, was exposed at the end of last season. This year a great hall of pillars has been excavated north of the court, and a very rich collection of copper, silver and gold objects has been recovered. The remarkable inlaid frescoes of the palace found last season are described in my volume. We have, however, at present to deplore the failure to find royal inscriptions of the long line of kings who lived here. At the present writing, we have no historical inscriptions of a Mesilim or a Kug-Bau to chronicle, but they are certainly to be

expected somewhere in the recesses of this vast building. The material in this volume is confined entirely to the pre-Sargonic period, and in itself illustrates some of the most important aspects of early Sumerian and Semitic civilizations. The task of dealing technically with each group of objects and each period is one which imposes upon the direction of the expedition more lingering over details and tardiness in publication than the public will be disposed to condone. The field catalogue, carefully prepared for every object at the end of each day's work, now contains more than 4000 cards, which cannot be placed at the disposal of scholars until each mound is completed. From many considerations, a more satisfactory series of volumes could be published by withholding our results for many years, but such procedure, although adopted by some expeditions, cannot encourage excavations nor stimulate the interests of scholarship. I know the gratitude with which the scholars and the public of Europe and America at large have read of the remarkable discoveries at Kish. For these discoveries we are chiefly indebted to the loyal generosity of Field Museum of Chicago and to Mr. Herbert Weld, of Queen's College, Oxford. Many volumes will be required to publish our results, the two volumes published this year by Mr. Mackay and myself will, we trust, fully testify to the importance of the excavations. In 1923–24, the staff consisted of Mr. Mackay, Col. W. H. Lane, and myself. For the present season, Father Eric Burrows of Oxford has gone out as Assyriologist in place of the director of the expedition, and Mr. Talbot Rice of Christ Church, Oxford, has joined the staff. Mrs. Mackay, a trained anthropologist, has been with her husband since October, 1923, and has contributed all of the line-drawings in this volume.

STEPHEN LANGDON,
Professor of Assyriology.

Jesus College, Oxford, February 22, 1925.

REPORT ON THE EXCAVATION OF THE "A" CEMETERY AT KISH, MESOPOTAMIA

PART I

I. THE "A" CEMETERY AT INGHARRA, KISH

The cemetery lettered "A" is situated south of and close to the very prominent series of mounds known to the local Arabs as Ingharra (Plate VII). In shape it is a low and irregular mound, the highest portion of which is not unlike the letter S. The top of the mound, a large area of which is nearly flat, is four metres above the plain beneath it and 4.60 metres above the level of the cultivation which comes fairly close to its eastern and southern sides.

From a distance the mound looks somewhat insignificant. It is only when it is approached from the north or east, where its sides rise somewhat abruptly, that its importance is realized (Plate I, Fig. 1). Col. Lane, when prospecting around this part of Kish, was struck with the great quantity of broken potsherds lying on the mound as compared with the small number on the surrounding plain. He accordingly began a preliminary investigation there with two gangs early in January, 1924, and on the second day uncovered a burial which contained pottery of a type not found before in Mesopotamia.

With results so promising, work was continued on this site with a larger number of men until the middle of March, 1924. Thirty-eight graves were excavated, together with the remains of two important buildings dating from a very early period and lying beneath the burials.

The history of the site, which awaits further excavation, appears to be as follows:—

First, we have the remains of a large building of crude mud bricks of the small "cushion" type, averaging 23 x 15 x 3.5 to 5 cm in size, provided with a fine stairway entrance and strongly fortified. This building was enlarged at a later period by erecting an annex alongside and to the south of it. On the eastern side of this annex was a portico with four large round columns also made of mud brick. The bricks used in the construction of this second building average 20.5 x 13 x 3.5 to 5.5 cm. It is hoped that it will ultimately be possible to determine what interval of time passed between the construction of the first building and the erection of the second annex.[1]

As is always the case with mud buildings, the second also soon fell into decay. It was repaired by the same or another people with both baked and unbaked bricks, averaging 24.5 x 17 x 4 to 5 cm in size and of a flat biscuit-like shape, sometimes impressed with one or two thumb-marks, and sometimes with none. That a considerable interval of time elapsed between the erection

[1] These two buildings will be described more fully in a later publication.

of the second building and its restoration is proved by a flight of steps, which originally lead up to it, being covered over, and a long ramp substituted owing to the changed level of the ground.

Once more the site became derelict and was used as a rubbish heap, a cemetery, and a play-ground for children. Evidence of the latter is afforded by a number of broken clay toys being found scattered about. Later, this ground was used for some unimportant buildings just prior to the period of Hammurabi (2067-24 B.C.). Then it was again abandoned until the Græco-Parthian period, to which a tomb containing multiple burials belonged.

In our present state of knowledge, the small "cushion" type of plano-convex brick is said to date from an indefinite period before 3100 B.C., meaning that though this style of brick ceased to be used at about the latter date, we know nothing of the period at which it was first used in Mesopotamia. The "biscuit" type of brick, so called from its much flatter shape, is thought to date from 3100 B.C. to about 2900 B.C. It is to this period that we have to assign the burials found in the "A" mound.

Two graves (Nos. 13 and 15) were found upon platforms of the biscuit type of brick, which averaged 23 x 14.5 x 3 to 4.5 cm and 24 x 16 x 4 to 5 cm in size, respectively. These burials, therefore, belong either to the same period as the brick platforms, or to a somewhat later time. The graves cannot date from so early as 3500 B.C., because they were made when the building on which they rested was in an advanced state of decay. Nor can their date very well be later than 2900 B.C., because one of the bodies was lying on a specially constructed, burnt-brick platform whose sides were coated with bitumen. The archaic character of some of the objects found in this cemetery, especially of the weapons, would also militate against their belonging to a late period. Col. Lane and I would, therefore, date the burials about to be described at about 3000 B.C., a date which allows time for the decay of the "cushion" and "biscuit" type of plano-convex brick buildings which lie beneath them.[1]

As stated above, thirty-eight graves were excavated in the "A" cemetery, and it is probable that during next season's work many more will come to light. In view, however, of the importance of the burials cleared this year, containing, as they do, entirely new types of pottery and other articles, it has been thought advisable to publish an account of them as soon as possible, so that the material may be available to those who want it. At the time of writing, except for the discoveries at Fara in Lower Mesopotamia, which was partially cleared by the Germans in 1902, and the excavations by the British Museum and Philadelphia at Tell'Obeid in the season 1923-24, we know practically nothing of the burial customs and of the objects placed with the dead in the early periods of Mesopotamian history.

[1] Allowance has to be made for the destruction of buildings by enemy action. Large and important buildings such as those in the "A" mound would probably be badly wrecked in a raid; and there were many raids against Kish.

DIMENSIONS AND SHAPE OF GRAVES

All the graves were simple holes of just sufficient size to take the body and funeral furniture. Owing to the very compact nature of the soil, due to damp and salt, it was found impossible to distinguish between the filling of a grave and its surrounding walls. For this reason, the exact dimensions of the graves could not be ascertained, except in four cases to be described below.

Grave 5 was cut down through a plano-convex pavement of the biscuit type of brick, and its dimensions were as follows: 160-180 cm long, 110 cm wide and 65 cm deep (Plate V).

In grave 10, which contained the skeleton of a small child, a rough paving, one brick thick, had been made of plano-convex bricks of both cushion and biscuit type.[1] To further protect the remains, this grave was also roughly lined with bricks laid on their edges.

An even more elaborate flooring was constructed for grave 13. It was made of biscuit bricks, averaging 23 x 14.5 x 3 to 4.5 cm in size. It measured 1.50 metres in length by one metre in width, and was one brick thick. Whole bricks were used for the outer portion and broken ones in the middle, the whole being bound together by mud mortar.

In another grave (No. 15), there was a similar floor, 2 metres long by 1.17 metres wide and one brick thick, but it was much better finished off with a coating of bitumen 1 cm thick. The biscuit bricks employed were of two sizes, measuring 22 x 14.5 x 4 to 5 cm and 24 x 16 x 4 to 5 cm, respectively. There is no doubt that the floors of graves 10, 13, and 15 were especially constructed and that they were not remains of early buildings.

Grave 23 was found on the top of a burnt-brick wall made of the biscuit type of plano-convex brick. But the people who dug the grave must have come upon this wall by accident and utilized it as a floor.

These paved graves in conjunction with burial 5 justify us in concluding that all the graves in the "A" cemetery were simple rectangular holes. No sort of coffin was provided for the additional protection of the body, except the rush or reed covering found in burials 21 and 27.

It would seem that graves were dug to no particular depth. The average depth was about 1.50 metres. The deepest grave (No. 28) was 2.93 metres below the surface of the ground, but that this unusual depth was not intended for the protection of the objects buried is proved by the burial being but poorly equipped. Without further data we have no means of estimating the exact amount of denudation that has taken place above each grave. It is, however, hardly likely to have been excessive owing to the consolidation of the soil.

As none of the workmen could tell when they were coming to a grave, the rule was made that when pottery was met with, they were to clear to the

[1] The cushion bricks were borrowed from other parts of the site and were, of course, of earlier date than the biscuit bricks.

same level some distance around. Col. Lane or myself then completed the excavation of the burial with a small knife. After a little training, we were able to allow one tribesman, by the name of Omran Mazuk, to clear graves as far down as the bones, leaving us the task of removing the objects and recording them. The fact that the large handled and brazier types of pottery were in most cases found in an upright position greatly assisted the location of graves without damage to their contents.

POSITION OF THE BODY

Of the thirty-eight graves recorded, twenty-four contained skeletons sufficiently preserved for their exact position to be noted (graves 5, 7-10, 12, 13, 15, 17-21, 23-28, 30-33, 35). Six of these skeletons were found with their heads to the south, or as close to it as possible (graves 9, 13, 20, 21, 23, 26). In four cases, the head was to the north or N.N.E. (graves 12, 17, 30, 35), and in six, to the west or W.S.W. (graves 15, 18, 19, 24, 25, 33). Three of the remaining burials were orientated to the N.W. (graves 10, 27, 28), and five to the S.W. (graves 5, 7, 8, 31, 32). It is, therefore, evident that no particular care was taken as to the direction in which the head lay.

The same disregard was paid to the side on which the body was placed; fifteen skeletons lay on the left side and nine on the right.[1] This absence of any rule as to the orientation and position of the body implies that the relatives of the deceased had no idea in their minds of any particular direction in which the soul of the dead man was going. This is quite at variance with the general practice and beliefs of early civilizations.

The position of the head in burial 33 was most unusual. The skull was found upright and looking directly to the east, though the body itself was on its left side facing to the north. This peculiar position is quite possible without severance of the head; it was probably due to the body being placed too far along in the grave so that the head was propped up against the end.

The suggestion has been made in more than one quarter that the people who founded the first Egyptian dynasty originally came from Mesopotamia and that they introduced the change that took place at that period in the orientation of the dead. The variation in position found in the graves of the "A" cemetery would tend to disprove this theory. Although the first dynasty of Egypt is of considerably earlier date than this cemetery, yet the rigid customs of that dynasty with regard to the orientation of the body persisted down to the twelfth dynasty, or even later; that is, to a period later than the date of the "A" cemetery at Kish.[2]

The lower limbs in most of the graves were in a semi-contracted position, the knees rarely being above the level of the pelvis. The legs in most cases were in a straggling attitude; no attempt was made to arrange them after

[1] Right side: graves 7, 8, 15, 18, 25, 27, 28, 32 and 35. In the oldest burials at Shuruppak, the bodies were laid on their right sides.

[2] It might, of course, be argued that the people who entered Egypt were not of the same race as the people who were buried in the "A" cemetery, but this is improbable.

the body was placed in the grave. The body in grave 15 was almost completely extended, the arms alone being contracted. Not a single body was found in the crouched position so common in the earliest graves of Egypt.

The hands were generally placed in front of the face with a copper bowl or small pottery jar or dish between them as if for the dead man to drink.[1] In graves 27, 32, and 33, the right or the left hand was used as a pillow, for which purpose a brazier was used in grave 19 (Plate V).[2] In burial 21 the head was placed upon the mouth of an upright jar with the result that the under portion of the skull was crushed for want of adequate support.

No remains of clothing were found, although careful search was made. The dampness of the soil would speedily have destroyed linen and leather. We know, however, that clothing did once cover the bodies in the graves from the fact that the round silver ornaments found in five of the burials were perforated with small holes to facilitate sewing them on to a garment of some kind (graves 10, 16, 21, 23, 32. Plate IV, 18, 20-23).

In two burials (Nos. 21 and 27), a few small fragments of coarse reed or rush matting were found which looked as if the bodies had been covered by or wrapped in this material. They were in a very poor state of preservation.

One burial only was found in a pottery urn (grave 36), that of a small child in a very crouched position, necessitated by the comparatively small size of the vessel. From the three pieces of pottery placed beside the urn, we must conclude that this burial is of the same period as the others under discussion.

PROPORTION OF SEXES

Out of the thirty-eight graves excavated, four were those of children (Nos. 3, 10, 18, 36). In graves 16 and 34, there were double burials,—a man and a woman in each case, as proved by the objects buried with them. In every burial found, the pelvis was in too bad a state of preservation to give any indication of the sex.

Nine graves (Nos. 2, 5, 11, 14, 16, 20, 28, 33, 34) contained bodies which must have been of the male sex, for they were accompanied by such masculine equipment as battle-axes, daggers and adzes. Articles for feminine use, such as spindles, needles, toilet cases, hair-pins, bracelets, etc., were found in sixteen graves (Nos. 4, 8, 9, 12, 13, 15, 16, 19, 21, 23, 24, 25, 27, 30, 32, 34). In fact, the only indication that the occupant of grave 15 was a woman was that no less than three hair-pins were found with the body.

In eleven graves it was impossible to determine the sex of the occupants owing to the lack of funeral equipment in addition to the decayed state of the pelvis (Nos. 1, 6, 7, 17, 22, 26, 29, 31, 35, 37, 38). It will thus be seen that out of a total of thirty-four graves, the four child-burials being excluded, there were nine definitely of the male sex and sixteen female. This proportion

[1] Graves 5, 21, 23, 25, 30, etc. (Plates V and VIII). The same thing was observed in the graves at Fara.

[2] The use of a hand as a pillow was also observed in the Shuruppak (Fara) cemetery.

of male to female is about the same as in the country districts of Iraq at the present day.

PRESERVATION OF BONES

We were fortunate in finding five skulls in a sufficiently good state of preservation to permit of their being embedded in wax and sent to Oxford for proper examination. As might be expected, but few skulls had withstood the heavy pressure of the earth with which they were covered. Even whole specimens could not be lifted without their crumbling, and Col. Lane and I found the only procedure possible was to bare the skull a few inches at a time, treating each successive portion with hot wax. As all the bones were very damp, the wax had to be heated to a high temperature to make it penetrate the substance of the bone. The skulls sent to Oxford came from graves 20, 21, 23, 28, and 31.

We were not so successful in preserving the other bones. They were always in a most deplorable condition and broke up even if they were blown upon. On this account, it was sometimes difficult even to determine the position of the body. In some cases it could only be done by tracing the lines of gray in the soil which were all that was left of the bones. Occasionally it was only possible to determine the direction in which the head was looking by the position of the teeth; and even these were sometimes in a very crumbled condition. This work had all to be done by ourselves, as we had no trained diggers on whom we could depend.

PIGMENT SHELLS

In most of the graves there were one or more small shells containing pigment. These shells were invariably a species of *Cardium*, averaging about 48 mm from the hinge to the edge. The two valves were usually found together. As a general rule, they were found with female bodies, but occasionally they were found with male bodies (Nos. 5, 11, 20, 33, etc., cf. Plate III, No. 8).

The pigments in these shells are white, light-green, blue, red, and black, of which the last color is the most common. From the appearance of the pigment in some of the shells, it must be concluded that it was smeared on the face with the finger, but sometimes a brush seems to have been used. Some of these pigment shells were evidently prepared solely for funeral equipment, as the small quantity of color in each shows no signs of ever having been disturbed. This is particularly noticeable in the case of a shell found in grave 15, which contains an untouched dab of green paint placed on the remains of some black paint already there.

In graves 8, 11, and 24, there were clean shells in addition to those containing pigment. The colors found, arranged in order of frequency, are: black 17 times, red 5, green 5, white 3, and blue 1. In none of the burials was

a complete set of pigments found; there were never more than two in the same grave.[1]

The black paint is probably kohl, sulphide of antimony. The red is an oxide of iron. The green, which is of an apple-green shade, suggests malachite; but, whatever material it is, it appears to have been mixed with a white substance.[2]

These three colors are very similar to those found in predynastic graves in Egypt. They were probably used for the same purpose. The black pigment, which is in the form of a fine powder, was used for the eyes; the green, possibly for the same purpose.[3] The red pigment may possibly have been employed for face ornamentation as at the present day.[4] It seems to have been prepared with some kind of grease.[5] The blue pigment is turquois in color, but its composition is uncertain. The shells themselves probably came from the Persian Gulf or Indian Ocean. Nearly a third of the known species of Cardiadae, in number nearly 200, come from Indian waters. Most of the species are edible, and these shell-fish were doubtless a favorite diet with the people buried in the "A" cemetery. Numbers of shells of fresh-water mussels also have been found scattered about on the site of Kish. The position in which these pigment shells lie in a grave varies considerably. They have been found by the feet, near the middle of the body and close to the head, and they were very often put inside the pottery.

RUBBING STONES

Small pieces of sandstone, which owing to the action of salt are now always in an extremely friable state and even powdery, were often placed in the graves. They are always irregular in form and range from the size of a walnut to pieces measuring 30 x 15 cm. They are found in burials of both sexes and were probably used for rubbing. It is quite common in the East at the present day to see people of the poorer classes, of both sexes, and even children, rubbing the soles of their feet with pumice or sandstone to remove the hard skin, which if left is apt to crack and become sore. These rubbers were placed just anywhere in the graves (5, 9, 11, 15, 17, 18, 21, 33, etc.).

AMULETS

Only one amulet has been found in the "A" cemetery up to the present; in grave 8 which contained the skeleton of a young female. It is 69 mm long, 27 mm wide, 21 mm thick, and is rectangular in shape with rounded edges. A hole for a cord had been bored through it near the top, both sides of the

---

[1] Excepting grave 24, in which there were no less than four shells, two containing a black powder, one a white paste, and the fourth nothing.

[2] In graves 20, 24, and 32 shells were found containing a pasty white substance. This substance has a barely noticeable tinge of green in some places, which suggests that the original color has disappeared.

[3] It has been suggested that green was used in ancient Egypt to protect the eyes from the glare of the sun in the same way that Eskimos apply it beneath the eyes to prevent snow-blindness.

[4] Similar pigments were found in the Fara cemetery, but usually in small stone dishes.

[5] It was found in burials 13, 23, 30, and 32, all of which were female.

stone being roughly flattened in this region to facilitate the operation. At first it was thought that the amulet was a hone, but the brown limestone of which it is made is far too soft for such a purpose. Similar objects have been found in other parts of Kish, principally on the site of the plano-convex building about half a mile N.N.W. of the "A" cemetery.[1] As this amulet was found close to the neck, it was probably worn on a string of beads (Plate I, No. 6).

One of the beads on a string around the neck in burial 16 is carved in the shape of a frog (Plate IV, No. 26). It is of lapis lazuli, and is of quite good workmanship. As it is the only bead of its kind on the necklace, it is possible that it also was worn as an amulet.

The suggested use as amulets of the silver medallions with raised central bosses which are described in the section on the jewellery is doubtful. They were probably intended simply for ornamentation, and have no other significance.

GLAZE

The use of glaze for cylinder-seals, beads, and other small objects was known in the period of the "A" cemetery. It was applied to pottery, as shown in Plate XVIII, No. 20, or to beads and other objects made of a white porous paste, a very similar composition to that used in ancient Egypt (Plate XVIII, No. 21).

It is usually in a fair state of preservation, but its original color, probably a deep blue, has been destroyed by the action of salt. All the glaze that has been found so far is quite white, or else tinged in places with a faint apple-green. The composition of which the glazed articles were made is now practically only held together by the glaze, so that all these objects are extremely fragile.

The technique of this work was very good. The glazes are even and well fired, and they have penetrated well into the material to which they were applied. Their surfaces, moreover, show very little pitting or porosity due to over-firing.

In our present state of knowledge, it is impossible to say at what period the art of glazing was introduced into Sumer. Some of the glazed cylindrical beads very closely resemble those of Egypt. They may have been introduced from that country *via* Syria in very early times.[2] But the fact that the number of examples of glazed work found in the "A" cemetery is comparatively small shows that the art was not yet extensively practised at that period. In graves 4, 12, 20, and 32, glazed beads were found which have turned quite brown. They must originally have been some other color than the usual deep blue (Plate IV, Nos. 31, 33).

METALS

The "A" cemetery was very rich in *copper* implements and tools, some of which are quite new to us. They are in an excellent state of preservation,

[1] See site marked as N on sketch-map in Plate VII.

[2] The glazed beads were either cylindrical or of the shape shown in Plate VII, No. 12.

especially those from the graves that had not been disturbed. That this should be so despite the fact that the soil is very salty implies that the metallurgy of the period was of a high order and that the copper used was very pure.

The fact that copper was well known to the Sumerians in very ancient times is proved by its being found in great quantities in the earliest sites. The region from which it was brought is still a matter of surmise. The question cannot be settled until exhaustive examination has been made of samples of tools and implements of the various Sumerian and Babylonian periods and also from the various mines which may have been used in those days. Sinai was the principal source from which the ancient Egyptians obtained copper, and the early inhabitants of Mesopotamia may also have obtained it from there. Copper was worked in Sinai as early as the first dynasty of Egypt and still earlier by the Semites dwelling there.

A place called Kimash, which has been located in the Zagros range, is mentioned by a priest-king of Lagash in an inscription as early as 2600 B.C.: "From Kimash I got copper, and from the mountains of Meluhha I got iron and gold."

Besides these sources, there are other probable places near to Kish. In the upper parts of the Tigris valley near Pontus there are said to be several old copper mines, and another ancient mine exists near Arghana-Maden in Kurdistan. This last mine was exceptionally rich. It was worked by the Germans during the war. The earlier workings have now been destroyed, but that it was known to the ancients is proved by a stele of Naram-Sin being found in the vicinity. Lt.-Col. Sykes mentions a copper mine behind Sabzawar in Persia which is being worked at the present day.[1] Cyprus also gave copper to the ancient world; these mines date back to an early period.

That *lead* was also known in Sumerian times is evident from two vessels of that metal being found in the cemetery (Plate XX, No. 2). Melted fragments were found in several parts of Kish in buildings of the earlier type of plano-convex brick.

This metal is mined in Persia at the present day, where it occurs in the form of galena, a compound of lead and sulphur. The process of extracting the pure metal from galena is a very simple one; the galena is roasted until the sulphur is burned away. Another source from which the Sumerians may possibly have obtained their lead is the mines between the Red Sea and the Nile; but that it came from Persia is much more probable.

Comparatively few *silver* objects were found in the "A" cemetery. They include the thin silver handle of a dagger and various objects of jewellery (Plates III, No. 4 and XVII, No. 9). Silver was always a rare metal in the ancient world; in some countries it was even regarded as equal to gold in value. The reason for its being rare in the past was that it is so seldom found in its native state.[2] In Persia, as far as is known at present, it only occurs in

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[1] P. M. Sykes, History of Persia, Vol. I, p. 37.

[2] Del Mar, History of Precious Metals, Chap. XXX.

lead in a small proportion up to not more than one per cent.[1] The process of extracting silver from lead is far simpler than its extraction from its ores; it consists merely in burning away the lead and recovering the silver from the residue. We have proof that silver was thus manufactured in Elam from a letter to a certain Enetarzi, a ruler after the first dynasty of Lagash (about 2800 B.C.), who says that this metal formed part of some booty taken from that country. Whether this booty was in the form of bullion or of silver vessels is not mentioned (cf. *Revue d'Assyriologie*, Vol. VI, p. 142).

Not a single *gold* article, nor any trace of gold, was found in any of the graves of the "A" cemetery, though we know it was known in a still earlier period. But, as many of the graves had been disturbed anciently, it is possible that articles of this metal had been stolen. Several fine gold objects were found during the season 1924-25 in the same stratum.

MINERALS

The stones most favored by the Sumerians for beads and other ornaments were lapis lazuli and carnelian.

The *lapis lazuli* was probably brought from Persia, in which country it is plentiful. That recovered from the "A" cemetery is either a dark or medium blue with no pyrites in it.[2]

The source of the *carnelian* is difficult to trace. It could have come either from Arabia, where it is common, or from the stony river beds to the north. Its color is in most cases a clear bright red, which may have been natural or the result of special treatment, such as roasting, which is practised in India at the present day.

The Sumerians seem to have found some difficulty in working lapis lazuli. In most cases it is merely rubbed down and not polished.[3] Very few of the lapis-lazuli beads are perfect in shape, and their surfaces show a certain amount of unintentional facetting. Lapis lazuli is not so hard a stone as carnelian, yet articles made of the latter material are well shaped and beautifully polished. The two kinds of stone do not seem to have been worked by the same people, and it is possible that articles of one or the other stone were not manufactured in Sumer, but were imported ready made. If so, the objects made of lapis lazuli were probably those manufactured at home, while the carnelian beads came from outside, either from Egypt, whose people seem to have been very skillful at this work, or else from a third country that supplied both Egypt and Sumer.

Haematite is rare in the "A" cemetery. Its use is confined to two cylinder seals (Plate VI, Nos. 2 and 9) and one small bead from burial 21. The

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[1] The traveller Tavernier, who visited Persia in the middle of the seventeenth century, mentions the silver mines of Kerven.

[2] De Morgan (Mémoires sur la Délégation en Perse, Vol. VIII, p. 53) states that lapis lazuli was originally worked near Kashan, but that the site of the mine is unknown. Mount Bilki, which according to an Assyrian record was a mountain of lapis lazuli, may perhaps be identified with Mount Demavand which is not far distant from Kashan. P. M. Sykes, History of Persia, Vol. I, p. 36.

[3] Lapis lazuli is, of course, capable of taking a high degree of polish.

scarcity of this substance in the graves is probably due to the difficulty of obtaining the ore, and not to any difficulty in working it, as it is not particularly hard.

Two stones very rarely found are *jasper* and *rock-crystal*. They only occurred in two graves (Nos. 27 and 23, respectively) in the form of beads. *Calcite* was much used in making cylinder seals (Plate VI, No. 4) and beads and to ornament hairpins, for it is soft enough to be very easily worked. It was found in the country itself, there being a plentiful supply in the western desert. *Limestone* was used to make four cylinder seals (Plate VI, Nos. 1, 16) and a few beads. The kind of stone employed was fairly hard, either gray or dark brown in color, and capable of taking a dull polish. It does not seem from its rarity to have been a popular stone for personal ornaments. It could have been brought from any of the countries bordering Sumer.

A bituminous limestone was used in making a cylinder seal found in grave 12 (Plate VI, No. 19). This material, as is also shown by the remains of a carved bowl found at a lower level than the graves, withstands the action of salt and time very well. One wishes that it had been more extensively employed.

The frequent use of *bitumen*, especially in building, shows that this material was as easily obtained in the period to which this cemetery belongs as in later times. It must have been brought down the Euphrates from Hit, where it is still collected in a small way from the bitumen pools.

A bead made of *serpentine* was found in grave 15. It was the only object made of this kind that has been discovered in the cemetery.

STONE VESSELS

No stone vessels were found in the graves of the "A" cemetery, though broken fragments occurred on the same site at various levels, which will be dealt with in a later publication. A possible reason for the absence of objects of this nature is that they were perhaps considered too valuable to be placed with the dead.

UNUSUAL OBJECTS

A rare object found in grave 2 was a cup which had been made from an ostrich shell by cutting about one-third of the top of the shell away and roughly smoothing the edge. It was the only one of its kind found in the cemetery, and it was in such a very bad condition with so many pieces missing that it could neither be restored nor drawn. The remains of a similar cup were found in one of the chambers of a large building of plano-convex bricks, about half a mile from the "A" cemetery, which appears to be of the same date. The ostrich is still found in the Arabian desert, and was doubtless plentiful in early times. Its feathers as well as its eggs were utilized by the ancients.

The model pottery brazier, No. 23 in Plate VII, ought perhaps to have been included with the pottery, but its very small size prohibited this. Though it does not actually come from a recorded grave, but from some rubbish near

the surface on the north slope of the mound, it was, nevertheless, probably washed out of a burial. It is hand-made, and must have been a child's toy.

Two toy clay animals were found with the remains of a child in an urn-burial in grave 36. It is difficult to say what these animals were supposed to be,—goats, most probably. There was a hole through the head just below the eyes in one of the animals for it to be pulled along with a string.

In burial 11 an object of burnt clay was found which is obviously a model battle-axe (Plate VII, No. 24). It is 81 mm long by 78 mm wide at the head and 16 mm thick at the same place. It is somewhat roughly made and provided with two holes for tying it to its handle. The lower portion has a fairly good edge. This, as well as the axes represented in Plate XVII (Nos. 1, 4, and 8), is especially valuable as showing a type of weapon in use at the period. The burial in which it was found had been disturbed anciently, so that the exact position of the battle-axe in relation to the body could not be ascertained.

The appended table of the various objects found in the "A" cemetery has been drawn up for purposes of reference. Against the number of each grave is placed the sex, except where it is uncertain. The numbers of the various objects found in each grave are given. In the case of the beads, the cross merely indicates that beads were found in that particular grave, ranging in number from one to a whole string. The various objects are dealt with in detail in the text, the pottery having a separate tabulation.

		CHAPTER III			ER V			CHAPTER VI			CHAPTER I	
No. of Grave	Sex	Battle-axes	Curved Blades	Daggers	Bracelets	Finger-rings	Beads	Cylinder Seals	Amulets	Rubbers	Pigment Shells	Toys
* 1	?						X	1				
* 2	M.	1	2				X					
* 3	C.											
* 4	F.			1				1				
5	M.						X			1	2	
* 6	?											
7	?											
8	F.			1			X	1	1		1	
9	F.							1		1	2	
10	C.				2		X					
*11	M.							1		1	2	
12	F.						X	1			1	
13	F.						X				2	
*14	M.			2			X					
15	F.						X	1		1	2	
*16	M. and F.	1	2	1	1		X	3	1		2	
17	?									1		
18	C.						X			1	2	
19	F.						X	1			2	
20	M.	1		1			X				2	
21	F.				1		X	1		1	2	
*22	?											
23	F.				1	1	X	3			2	
*24	F.						X	1			4	
25	F.						X					
26	?							1				
27	F.						X					
28	M.			1			X					
*29	?											
30	F.				3						2	
31	?											
32	F.						X	3			2	
33	M.			1			X			1	2	
*34	M. and F.	1		1	1		X	1			2	
35	?											
36	C.						X					2
*37	?											
*38	?											

TABULATION OF OBJECTS FOUND IN GRAVES

Asterisk denotes disturbed burial

		CHAPTER III							CHAPTER IV											CHAPTER V					CHAPTER VI		CHAPTER I		
No. of Grave	Sex	Battle-axes	Curved Blades	Daggers	Knives	Chisels	Adzes?	Model Tools	Spindles	Spindle-whorls	Toilet Cases	Bent Hair-pins	Coiled Hair-pins	Animal-headed Pins	Straight Pins	Needles or Bodkins	Copper Bowls	Lead Bowls	Handled Bowls	Medallions	Fillets	Ear-rings	Bracelets	Finger-rings	Beads	Cylinder Seals	Amulets	Rubbers	Figurant Shells	Toys
* 1	?															X									X	1				
* 2	M.	1	2														2								X					
* 3	C.																													
* 4	F.			1	1		1						1			1										1				
5	M.				1	1	1								1							2			X			1	2	
* 6	?																													
7	?						1																							
8	F.			1			1								2							2			X	1	1		1	
9	F.											1			1			1				2				1		1	2	
10	C.																			1		2	2		X					
*11	M.							1									2									1		1	2	
12	F.											1		1	1			1							X	1			1	
13	F.													1	1										X				2	
*14	M.			2									2												X					
15	F.											1	1		1		1								X	1		1	2	
*16	M. and F.	1	2	1							1	1			1		1			1		1	1		X	3	1		2	
17	?																											1		
18	C.														1							1			X			1	2	
19	F.						1								1							3			X	1			2	
20	M.	1		1																					X				2	
21	F.								1						2		2		1	1	1	3	1		X	1		1	2	
*22	?																													
23	F.				1		1			1		1			1		1		1	1		1	1	1	X	3			2	
*24	F.														1				1						X	1			4	
25	F.													1											X					
26	?																									1				
27	F.											1													X					
28	M.			1																					X					
*29	?																													
30	F.																					1	3						2	
31	?												1									1								
32	F.														1					1					X	3			2	
33	M.			1			1						1												X			1	2	
*34	M. and F.	1		1	1	1					2	1			1		3		1				1		X	1			2	
35	?																													
36	C.																								X					2
*37	?																													
*38	?																													

II. POTTERY

HANDLED POTTERY TYPE A Plates I, No. 5, IX and X

A specimen of the handled pottery shown in Plates I, IX and X was found in practically every grave in the "A" cemetery at Ingharra. In three graves two jars of this type were found, one large and the other small.[1] This handled pottery is peculiar and quite unlike any that has been found up to the present in Mesopotamia or elsewhere. It is possible that this pottery is either a local type or that it was confined to the northern part of Sumer. Only more extended excavations in various parts of Mesopotamia will decide this point. The pottery is wheel-made of a well-kneaded clay and under medium magnification shows but little porosity and little or no foreign matter. In color it ranges from a light salmon-pink to a deep red. The surfaces of a few jars are coated with a substance which is yellow-drab in color. This may be a slip, but it is more probably a salt incrustation, as there is a certain amount of sparkle.[2]

The ware is thick, in some cases as much as 1 cm, but not unduly so when the size and purpose of the jars are considered. The baking is good; though most of the jars were found broken through earth pressure, it was possible to repair them, despite many of the pieces being heavily saturated with salt. A few only—jars which were found in graves close to the surface of the ground—were in a bad state. Every example of this handled pottery was made in three pieces, joined together at the shoulder and between body and base. The joining was on the whole skillfully done, and is difficult to detect in the unbroken examples. Sometimes, however, the parts were not equally damp when they were put together and therefore failed to adhere properly. This fault was more frequent in joining on the bases, which were always hand-made.

It will be seen in the two plates in which this type of pottery is shown that the general design is the same. The sole departure from the general rule is No. 21 (Plate X), which has an unusually high base.[3] The chief peculiarity about this ware is the handle which is ornamented in high relief with the features and breasts of a woman, the nose especially being very prominent. In every jar of this type which has been found up to the present, it is a female figure that is represented on the handle, never that of a male. The handles were made of tubular pieces of clay which were sometimes left hollow and sometimes flattened. Three of the jars are especially interesting because the hollow handle communicates with the interior of the jar, though

[1] Graves 1, 18 and 23. The contents of graves 1 and 18 had been disturbed. The first contained no bones, and the second those of a child. It is possible that each of these burials was a double one, as, for instance, mother and child, and that the smaller jar was provided for the child.

[2] Jars 9, 16, and 17 are certainly washed over with a thin cream slip.

[3] Compare this base with type E pottery (Plate XIV, Nos. 8-18).

the extreme upper portion of the handle has been squeezed so flat as to allow only a minute drop of water to pass through (Burials 2, 23, 33; Plate X, Nos. 17, 22, 24). Most of the handles were secured to the shoulder of the jar by cutting a hole in the latter and passing the end of the handle through. This made a strong joint. In nearly all cases the joint is rough, as seen from the inside of the jar, though care was taken to conceal it on the outside. In some examples, the end of the handle was pared or thinned, so that a flange rested against the surface of the jar; this was afterwards carefully pressed down all round to ensure as close adherence as possible.

The feminine features on the handles were formed with the addition of pellets of clay. In some rare cases the nose was squeezed up out of the handle, but in general it was added and the joint carefully smoothed over. The two breasts were always added and range in shape from rough nodules to full, rounded forms.

As a rule, the eyes are placed on either side of the nose itself or as close to it as possible. They are in some cases simply rough clay pellets, in others cut disks of clay. Occasionally, further refinement was effected by impressing a circular mark in the centre of each eye to represent the pupil (Plates IX, No. 7; X, Nos. 1, 7, 9). Jar No. 9 has no eyes; the handle is very roughly made (see also Plate II, Nos. 1-9). In one case (Plate II, No. 7 and Plate IX, No. 6), the pupil of the eye is represented by the addition of a second and smaller pellet in the middle of the first.

Ears are not very common. If present, they are mere projections on the corners of the squared top of the handle (Plates IX and X, Nos. 22, 24; II, Nos. 4, 5). Eyebrows are also rare; they are represented by thin strips of clay placed above nose and eyes (Plates II, Nos. 6-9; IX and X, Nos. 1, 4, 6, 21). They are very prominent in Plate II, Nos. 7 and 8, giving the face a pronounced owl-like appearance. It is possible in Nos. 6, 8, and 9 (Plate II), especially in No. 6, that these strips of clay represent hair as well.

Most of the handles are further ornamented with incised markings made with a pointed stick. In the majority of cases, these are either rough and irregular scratches or a series of oblique parallel lines running from left to right and right to left alternately. In rare cases, there are rough imitations of necklaces of three or more strings of beads (Plates II, No. 8; IX and X, Nos. 2, 6, 19, 21, 22). A feature on some of the handles is a roughly hatched triangle just below the breasts, which represents the Mons Veneris (Plates II, Nos. 7, 8; IX and X, Nos. 6, 21). In some jars, however, this portion of the body is shown below the handle on the body of the jar, immediately below the notched beading of the shoulder (Plate X, Nos. 22, 23).

There can be little doubt that the origin of these handles was a spout through which to pour the contents of the jar. This is borne out by the facts that they were all made from tubular pieces of clay, that some retain this shape and that the cavity of the handle in some cases communicates with the interior of the jar. Another important point is that none of the handles is

actually secured to the rim of the jar, though most rest against it, or are separated from it by a distance of a few millimetres only. In fact, some of the handles look so insecure that one hesitates to lift the jars by them. It is probable that if this type of jar had lasted over a longer period, we should have seen the gradual disappearance of the figure and the eventual joining up of the top of the handle to the rim of the jar for added strength. The spouted jar is very common in early Mesopotamian pottery, but it was, of course, only suitable for vessels used for liquids.

It is uncertain at present whether these handled jars were made for ceremonial purposes. One was found in every burial of importance, and it would seem likely, therefore, that they were in everyday use. This suggestion is borne out by the fact that a few of the jars were slightly broken when placed in the graves; the missing pieces were not to be found, though each grave was carefully cleared either by Col. Lane or myself. The figures on the handles suggest that the contents of the jars were under the protection of a goddess; in all probability, a water-goddess. Who this deity was, it is impossible to say with any certainty, as the cult or cults of the temples that lie under the mounds known as Ingharra are not yet known.[1] The fact that these jars were generally found in an upright position suggests that they contained water for drinking or for ablutions in the owner's next existence.

In every one of thirteen graves a handled jar was found; behind the head in five cases, in front of the head in three, and in three behind the back near the pelvis. In one grave, the jar was placed behind the shoulder, in another behind the feet. The usual position, therefore, of these jars is behind the body. It will already have been noticed that each jar is decorated on the shoulder as well as on the handle. In Nos. 2-5 (Plate IX), this decoration is very poor and consists solely of rough hatching done with a sharp point. The most usual design is a series of large triangles, apex upwards, the interiors of which are filled in with lines crossing one another to form a series of rough lozenges. Another common motive is two interlacing zig-zag lines evidently made with a comb-like implement, for they are in groups of parallel lines, three, four, and sometimes five in number. A flint with a serrated edge could hardly have been used for these lines, as they are on the whole too regular. Some of them begin or end in awkward places, which seems to suggest that they were made by a comb fixed at the end of a stick. The decoration as a whole is fairly well done, and in some examples an attempt was made to achieve regularity.

A simple decoration consisting of a single zig-zag line, also made with a comb, is shown in Nos. 16 and 17 (Plate X). Decoration in two registers is somewhat rare, but four examples were found (Plate X, Nos. 21-24). In No. 21, the design is the same in both registers, but the other numbers show more variety. A striking peculiarity of this pottery is the presence of a projecting

[1] Prof. Langdon suggests that the figure represents either Nintud, the mother goddess, or Nina, the water goddess, an early form of Ishtar.

beading around the jars at the junction of neck and body. In most cases, this beading projects very considerably from the shoulder of the jar. The probable origin of this form of decoration was the inability of the potter to make this type of jar in a single piece. It would seem that in the course of manufacture the upper edge of the body of the jar was splayed slightly outward, in order that the lower edge of the neck might fit into it, forming a kind of plumber's joint. When this junction had been properly effected, the edge of the lower part of the jar was turned over against the shoulder, and any irregularity caused by the join, whether inside or out, was then rectified by smearing the joint over with clay. This method of building a jar had its defects owing to the union not always being true with the result that complete adherence all round did not always take place.

In all the larger jars, this rim was then heavily notched all round by a piece of wood or bone with a rounded surface. Generally each notch is slightly oblique, running either to left or right, but there are examples where the markings are vertical. Besides being an ornament, the notching must have assisted in pressing the two parts of the jar together.[1] To complete the decoration most of the jars have a simple series of points pricked around the junction of the neck and sloping shoulder. This was done with a pointed instrument held almost vertically, each stroke being directed downward.

These jars are on the whole well made, especially their upper portions which are invariably better finished than the bodies. The latter show undulations and finger-grooving in some of the less skilfully finished examples. The surfaces are smooth and unpolished. The interiors of the jars, as a rule, show no very noticeable finger-grooving, the surprising absence of this being doubtless due to the making of the jars in separate pieces. Any roughness in a jar was to be found in its hand-made portions, namely the handle or the ring forming its base. Such defects were probably caused in making these two portions adhere properly to the body of the jar.

In the style of decoration, but not in form, this pottery resembles early Hittite pottery, though it is, of course, of considerably earlier date. Its simple geometric decoration may not have been borrowed; it might as easily have originated in the country in which it is found as elsewhere.[2] These jars range in size from 10.5 to 39 cm in height (Plate IX, Nos. 10 and 12).

POTTERY BRAZIERS TYPE B Plate I, No. 4; Plates XI and XII

Only the very poorest graves or those in a badly disturbed state lacked a brazier which was evidently considered an essential part of the funeral equipment. These braziers were always of heavy ware, and not so well finished off as were the handled jars. The stems seem unnecessarily clumsy,

[1] It should be noticed that the jar shown as No. 21 (Plate X) has a plain beading around its shoulder. It is the only jar of this type in which the notching was omitted.

[2] The notched beading at the junction of the shoulder and body in this pottery in a superficial way resembles the beading in a similar position on some of the Palestine pottery dated to the "First Semitic Period." The use of the combed ornament was also common in Palestine in the same period, which is dated to 2000-1800 B. C.

ranging, as they do, from 1 to 1.5 cm in thickness. The fine example numbered 18 on Plate XII is 44.5 cm high, and the smallest size (Plate XI, No. 5) 12 cm high. It will be noticed that these braziers exhibit a considerable diversity both in shape and size. This is perhaps due to the complex nature of this type of pottery, each specimen of which must have taken a considerable time to make.

Like the handled ware, these braziers were made in two pieces which were joined together before the clay was dry. The upper portion or dish was always better finished off than the stem and base; the latter portion always has very pronounced finger-grooving inside caused by the effort required to pull up such a heavy mass of clay while on the wheel.[1]

When the bases are decorated, their roughness is usually accentuated by the dragging of the surface of the pottery by the point or comb with which the designs were scratched. In the specimens found up to the present no attempt was made to remove this blemish.[2] The same clay was used as for the handled ware, and the color of the two types of pottery was very similar, but in many cases the braziers were imperfectly baked. It would appear from this that not sufficient allowance was made for the thickness of the material, with the result that many of the vessels show the characteristic gray tinge in the thickness of the clay which is the mark of imperfect firing. Unfortunately salt has played havoc with much of this ware, owing to its shape and its defective baking, with the result that only one specimen was recovered whole and the remainder in many pieces, most of which were badly scaled. The very form of the braziers was ill adapted to stand the pressure of the grave filling, which broke off their dishes and basal portions.

With two exceptions, these braziers were all found in an upright position. In burial 19, the brazier was placed as a pillow for the dead man (Plate V). It lay on the body in burial 8, where it had perhaps fallen when the grave was filled in. Its usual position in the grave was behind the body. Of fourteen graves which were in a tolerable state of preservation, the brazier was found in seven, standing behind the head or shoulders; in four, it was behind the pelvis or the feet. In three instances only, it was placed in front of the head, but at some distance from it. The vessels of this type have been called "braziers" owing to their peculiar construction. It was, first of all, thought that they were used for food. The presence, however, of what are evidently ventilation holes in many of the specimens (Nos. 4, 6, 12-14, 17), proves that they were made for heating purposes, the holes serving to cool the stem so that the utensil could be readily moved from place to place. Food, however hot, could never sufficiently heat the stem for ventilation to be necessary, but in the case of a fuel-like charcoal, especially if constantly replenished, such holes would be required. It must be admitted, however, that not a single brazier was

[1] In the case of No. 4 in Plate I, also No. 9 in Plate XI, the two portions were apparently fitted together and then placed on the wheel once more for a final trimming-up.

[2] In No. 14 the ventilation holes were even bored after the decoration was finished, with the result that a heavy burr has been left around the edges of the holes.

found to contain any vestiges of fuel, nor even to show the marks of burning. But such traces would be readily removed by time and the action of salt; and if charcoal were used, it must be remembered that it is a very clean fuel. The ventilation holes were bored with a stick varying from 1 to 1½ cm in diameter. In the vessels numbered 4, 6, 12, 14, and 17, these holes are in the base, two close together on either side. In No. 13, there is a single hole on either side of the stem, close under the dish.

On examining the two plates on which this pottery is shown, it will be seen that the simplest form of brazier is unornamented in any way. It has a plain wide base and dish, the latter with a deep groove around its edge. In Nos. 2, 3, 4, and 5, the base is still plain with the exception of a simple grooving on No. 2. The rims of the dishes, however, are heavily grooved, the ridges above and below being coarsely notched with a stick. In No. 6, however, only the upper ridge is treated in this way. No. 7 is interesting, because the heavy grooving of its base is spiral in form. Up to the present, it is the only brazier that has been found to show this feature. In Nos. 9, 10, and 11, the base of the brazier is roughly decorated with criss-cross lines, made with a fine point in the first two and with a heavier one in the third. No. 11 is also distinguished by the upper edge of the base being notched,—a unique feature up to the present.

Brazier No. 12 has several interesting points. There is a notched beading just above the middle of the stem and another above the base, which is ornamented with a chevron design of three lines made separately. In Nos. 13 and 14 we have a more elaborate form of decoration, especially in the latter, in which there is a double notched beading just above the base which is roughly hatched with a single point. No. 13 has two forms of decoration on its base, the upper one made with a single point in groups of three lines, arranged chevron-wise. The fine linework of the lower register is also made with a single point. No. 15 is an exceptionally neat brazier and graceful in form. A broad, notched beading, below which is a row of chevrons made with a four-toothed comb, decorates the base of the stem. This piece of pottery has been washed with a light cream slip, and through over-baking its dish has become slightly twisted.

No. 16 is rather clumsy. On the base and the lower part of the stem, a simple design was drawn with a seven-toothed comb. The outer edges of the dishes of Nos. 16, 18, and 20 are scored heavily with three horizontal lines instead of the grooving made on the wheel. This scoring is done with a stick, and further ornamentation is afforded by a series of vertical lines (set slightly obliquely, especially in the case of No. 18), which break up the surface of the rim into a number of small squares. The bases of Nos. 18 and 20 are decorated with lines made with combs of three and five teeth, respectively.

No. 19 is a curious object. Both the top and base are broken off, and its surface is decorated with a roughly hatched pattern incised in the clay with a point, and moreover there are six horizontal ribs which are notched.

There can be no doubt that we have here part of the stem of an unusually decorated brazier. It was found in the cemetery mound, lying by itself in loose débris. The unusually small brazier (Plate XI, No. 5) was found with the small handled jar (Plate IX, No. 9). This set of pottery probably belonged to a child's grave. The bones of the burial could not be found and had doubtless perished because of their extreme fragility. The only other pottery found with these two pieces was a number of small dishes.

As has already been mentioned, these braziers, like the handled ware, ranged in color from salmon-pink to a dark red. There were, however, three exceptions, Nos. 3, 5, and 15, which were washed over with a thin cream slip. The handled jars from the same burials had been similarly treated. Our knowledge is at present insufficient to determine the sequence of the graves in which handled ware and braziers were found, but the manner of their decoration helps us a little. I would put down the undecorated ware as being necessarily earlier than those pieces which were decorated with a single point, as Nos. 11, 12, and 14. These three braziers were accompanied by handled jars that were also decorated with a single point. There are a few cases, however, in which the brazier has been decorated with a single point and the handled jar accompanying it with combed lines; and the reverse also occurs.

Most of the braziers and handled jars have combed lines made with an instrument with from three to seven teeth, and these are probably of slightly later date. The flat rim of practically every brazier was ornamented with a simple, wavy line. This seems to have been considered an essential part of the decoration, and is only missing in Nos. 11, 13, 16, 18, and 20, and in those braziers which are entirely undecorated. Unfortunately, we cannot compare this ware with any other of the same kind elsewhere, as nothing quite like it has as yet been found.[1] It has a remote resemblance to the Hittite pottery, named "champagne cups," that have been found in cist burials in Central and North Syria. These belong to the bronze age (early Hittite), approximately 1100 B.C., but our examples are of a much earlier date.

A very similar form of vessel, undecorated and made of a black and red ware like the predynastic and pan-grave pottery of Egypt, has been found in the pre-historic burials (dolmens and cairns) in southern India. These vessels are about one-third the size of our braziers. This Indian pottery has been conjecturally dated to about 2500 B.C., and is supposed to have been used for burning incense.

It has been noted that a specimen or sometimes two of the handled ware already discussed accompanied these braziers in the burials in which they were found. In some cases the decoration on the two vessels is practically the same, suggesting that both were made by the same potter. This is an interesting point, for most potters in the Orient at the present day specialize in certain

[1] Since the above was written, some results of the Fara excavations have been published by WALTER ANDRAE, Die archaischen Ischtar-Tempel in Assur, Plates XVIII, XIX, XX. In the cemetery at Fara similar braziers were found to those discovered at Kish. They were, however, of a more degraded type. Andrae has dated them in a period named G, or before 3000 B.C.

shapes, and one or two, and sometimes more, makers may have to be visited to obtain the particular type of jar desired.

STRAIGHT-SHOULDERED WARE TYPE C Plate XIII

This type of ware is very frequently found in the Ingharra burials, two, three, and sometimes five specimens being found in a grave.[1] But no special position in relation to the body was allotted to them. The shape is very characteristic, each jar having a well-defined neck and shoulder, the latter forming a sharp angle with the body. The general shape is not dissimilar to some of the twelfth dynasty ware of Egypt, except that the latter ware has an almost flat base. This pottery is not particularly thin for its size, and in most cases has a dragged, uneven surface, especially on the lower portion of the jar. The clay is light red, well kneaded, and in the majority of cases well baked. Three specimens have apparently been coated with a thin cream slip, but a more minute examination than could be given in the field is necessary to prove this (Nos. 1, 6, and 18; graves 1, 2, and 6). In a great many cases the clay was worked in too dry a condition, with the result that, besides being uneven, the surface of the pottery is striated. On the whole, however, the ware is of creditable workmanship. All examples found up to the present have been made on a wheel.

The ring-like base with which each specimen is provided was added later. In most instances it was trimmed up on the wheel after being added. The joining was not always perfectly done, and the base has sometimes parted company with its jar, owing principally to the action of salt. It is suspected, but not at present proved, that the neck and shoulder of the jar were added to the body, the join being very skillfully made and very difficult to detect. No. 23 was found to have parted into two in this region, the break being too even and regular not to have been other than the result of a join giving way. The simpler type of jar has a plain neck as in Nos. 1-4. Numbers 5-7 have thick necks with the rim formed by turning over the top. In Nos. 8-12, the necks are more complex, definite form being afforded by a scored line at the junction of neck and shoulder. No. 12 is most unusual owing to its great height as compared with its breadth. The examples that follow are squatter in form. Their rims and necks are more shapely, being improved either by a single fluting in Nos. 15-19 and by a double one in No. 20. The angle between the shoulder and body is also more pronounced, especially in jars 16, 18-20.

Nos. 21-25 all have fairly simple necks and rims, but they are especially interesting in that their shoulders are ornamented with scored lines. In the first two, this scoring is spiral and made with a toothed instrument. Nos. 24 and 25 have been similarly ornamented, but the groups of lines run straight, not spirally, round the shoulders of the vessels. The latter is also noticeable

[1] Burials 16 and 34 each contained three specimens; in burial 2 there were four; burial 5 contained five.

on account of the beading around it, which, though unnotched, is similar to that on the handled jars.

As in the case of the other types of ware, it is not at present possible to assign proper sequence dating owing to the small number of graves as yet excavated. Nor is it always the case that the jars of the same type found in the same grave were exactly similar. For instance, Nos. 1 and 16 which were found together in grave 2 are of the same general type, yet differ considerably in detail from one another. Jar No. 23 is of especial interest. Its base is formed by working the lower part of the body downward and outward with the fingers to form a ring. The junction of the shoulder and body is ornamented with short lines running obliquely, and the shoulder itself is roughly decorated with two wavy lines scratched with a point. It is of light red ware with a yellowish face, which seems to be the result of a salty deposit.

SPOUTED VESSELS TYPE D Plate XIV

The spouted jar, though frequently found at an earlier period,[1] is a rare feature in the cemetery, only two examples being found (Burials 23 and 24; Nos. 4 and 5). The other examples illustrated in the plate are included for comparison only; but, as they come from the same site and were found approximately at the same levels, there is reason to think that they are of the same date as the burials.

Jars Nos. 4 and 5 are very similar, except for their bases. The base of No. 4 has a number of focused grooves scored upon it (Plate XV, A). This is a peculiarity which is very frequently found in the simpler types of pottery in this cemetery (Plate XV, Nos. 16-46). The scoring seems to have been produced by the surface of the wheel upon which the pottery was turned, being lightly covered with loose sand. The jar when finished was removed from the wheel by a sliding motion before the latter had ceased revolving, as is shown by the scoring, which is always well pronounced, taking the form of loops passing through a single point situated somewhere near the edge of the base. When scoring is present, the base of the jar is always rough and uneven, and it appears that a considerable amount of force was needed to remove it from the wheel.

Nos. 4 and 5 are both somewhat roughly made with irregular surfaces; they appear to have been made on a slow wheel. In each the spout, which is large as compared with the sizes of the vessels, is hand-made, and is skillfully joined on. No. 1 has a slightly convex and uneven base. The spout is hand-made, and the junction between it and the jar well finished, both inside and out. A spongy material, brown in color, which was found at the bottom of this jar is being analyzed. The grooves scratched with a point at the base of the neck and immediately below are a very unusual ornamentation in this type of jar.

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[1] In a plano-convex building below the cemetery and in other parts of the site of Kish. These sites will be dealt with in a later publication.

No. 2 is unusual in shape. It has a small flat, unsteady base and a thick rim. The spout is rudimentary. No. 3 has a spout out of all proportion to the size of the jar. It has been joined on very unskillfully, and the result is ugly. This type of ware is made of an entirely different clay from that used in other pottery found in the cemetery. It is straw-colored or light yellow, and is hard baked. The clay is granular in appearance, and contains very little foreign matter. The baking is not responsible for the color of this ware, as will be explained below. It bears a certain resemblance to the clay used in some Hammurabi and Neo-Babylonian pottery found at Kish, though most of the pottery of these periods is soft baked. It very closely resembles alluvial clays found on the surface of the ground in most parts of Mesopotamia, as distinct from the river clays which are considerably darker in color. Practically all the pottery found in the "A" cemetery was made from the latter material.

Spouted vessels are a very early type of Sumerian pottery, and they have survived down to the present day in Iraq. The type is apparently not now found in Asia Minor, but it is in every-day use in Syria, and I have come across a few examples in Egypt, which, however, may have been imported. It has been found in Palestine and dated there to the first Semitic period (2000-1800 B.C.) and again to the fourth Semitic period (1000-550 B.C.). And the same kind of pottery will doubtless be found in Syria when the archæology of that country has been properly studied. This type of jar was used for drinking. The vessel was held above the level of the mouth, into which the water was poured without contact with the lips. This requires a certain amount of practice, as those who essay the feat with the modern spouted jars find out.

CUP-BASED POTTERY TYPE E Plate XIV

A very striking form of pottery is the ware shown in Plate XIV (Nos. 6-18). It is not at all common in the "A" cemetery, many graves being without a specimen, whereas others contain two (Nos. 10-12, 14-17; graves 1, 9, 12-14, 24, 29, 32, 34). Owing to their shape and to the thinness of the ware, few of the examples that were found have survived the pressure of the earth, to which the bases especially have succumbed. They have also suffered badly from the action of salt. This ware is made of fine, well-kneaded, dark-red clay. But though the shapes and proportions of the vases are so good, most of the examples found are somewhat roughly finished, frequently with striated and irregular surfaces.[1]

The jars were always in an upright position and placed near the head of the burial,—usually in front of the face. When two jars were present, they were close together. The base was always added to the vessel in the course of construction. In the majority of cases, this was so skillfully done that it is probable that after the base was affixed the jar was returned to the wheel for a final trimming-up. As in most of the better pottery in the graves, the upper part of these vessels was better finished than the lower. It will be seen

[1] Nos. 10, 11, and 12 appear to have been washed over with a thin cream slip.

that the rims are all alike, flat and ledge-like in form. In Nos. 17 and 18, the base is very considerably shortened. No. 14 is peculiar in that a small spiral button has been left at the bottom inside,—another proof that no particular care was taken in the finish of these vessels.

It has been stated that this pottery was made of a dark-red clay. There are, however, three exceptions,—Nos. 6-8, in which the material used is ash-colored, probably owing to dung[1] or some similar substance being kneaded with the clay. Unfortunately, none of these three pieces of pottery was found in a recorded grave. Nos. 6 and 8 come from the cemetery mound, and No. 7 from a large plano-convex building about half a mile away. They are, however, so allied by shape with the type under discussion that it has appeared advisable to include them in it (see also Plate I, Nos. 2 and 3).

No. 6 is dark-gray in color. Its neck is decorated by deeply pricked lines crossing one another obliquely, thus forming a series of lozenges. The shoulder is ornamented by a double line of small circles, 7½ mm in diameter, which were deeply incised in the clay with a round instrument. Each circle has a smaller circle inside it, and both circles and pricked lines were probably filled in with a white paste as in jar No. 7. The jar had a cup-like base, which is now missing, but the mark of the join still remains.

No. 7 is light-gray, thin for its size and well made. Three rows of hollows, which were filled in with a white paste resembling gypsum, decorate the shoulder. The hollows are about 2 mm in diameter, and though not undercut in any way, a slight ridge or burr around the edge of each serves to hold the paste, which forms a kind of small white boss.

The two lower rows of bosses are separated by an incised line which is also filled in with white. The surface of the jar is smooth, but unpolished. Its base is small and only just sufficient to allow it to stand steadily. Both these jars have traces of some black material, which to the casual eye resembles bitumen, adhering to the inner and outer surfaces. This is probably the remains of some scented fat or ointment. No indications of similar contents were found in any other jars of this type, which means that they were placed in the grave empty or that their contents have entirely disappeared. The squat shape and wide mouth of these vessels in themselves suggest that their contents were other than a liquid.

The finding of these two vessels with black and white incised decoration indicates, I think, that this method of ornamentation was practised in Sumer; it perhaps originated there. That these two jars were not imported is strongly indicated by their being similar in shape and form to the undecorated vessels of the ordinary red ware. It is, of course, possible to argue that the whole of the pottery of this type was imported, but I venture to think that the particularly fragile nature of these jars itself precludes this possibility.

No. 8 is of dark-colored clay and entirely undecorated; but it is noteworthy on account of its being unusually tall for its width. It is a very graceful jar.

[1] This substance is still used in Palestine and Syria to make a dark-colored clay. An almost black effect can sometimes be produced, especially if the surface is rubbed to close the pores.

BOWLS TYPE F Plate XIV

The two bowls illustrated at the foot of this plate and numbered 19 and 20 are of a type uncommon in the "A" cemetery, for they are the only two that have been found as yet. The first is from burial 12, and is made of somewhat coarse light-red clay. It has a ring base and banded rim. No. 20 is from burial 29. It differs radically from No. 19 in form, but not in color or make. The surfaces of both are rough and striated inside and out, the clay having probably been worked in too dry a condition. Both utensils have very wide mouths, and were probably used for corn or meal.[1]

PANS TYPE G Plate XV

Of the three pans figured in this plate, only the first was found in a grave (grave 11). The remaining two, however, resemble the first so closely that they have been included as probably being of the same period. No. 1 was found broken, and only some of the pieces could be recovered. It is impossible to say whether it was originally round or oval in shape. It is roughly made and baked and of a light-red color. The base is flat and uneven, the sides slightly concave. No. 2 is of the same ware. Its rim is produced upwards to form three projections, or lugs, placed at irregular intervals.[2] No. 3 is of very inferior ware, its surface being irregular both inside and out. In color and texture, however, it resembles the other two. All three pans are hand-made and appear to be of home manufacture. In shape and form they resemble the pans used in Iraq and Syria at the present day to hold flour and dough. Our specimens were probably used for this purpose.

BEAKERS TYPE H Plate XV

This is a rare type of pottery; it was found in only two graves in the cemetery. From their wide mouths and rounded bases, it would appear that these vessels were used for dipping water from a larger jar. No. 4 was found in grave 13 with much other pottery. Nos. 5 and 6 come from grave 28; they were placed together with some other pottery just behind the head. The remaining jar of the group (No. 7) did not come from a burial, but it has been figured, as it is obviously of the same type, though considerably shorter. It was found close to grave 30 and about 2 metres below the surface of the ground. Two small holes for suspension are provided near its rim. The ware is of a light-red color, except in No. 5, which is greenish-gray. This jar is also badly out of shape through over-firing. All the examples are wheel-made, and have rough striated surfaces, both inside and out. The clay is fine and well kneaded. The pottery of this group is thin for its size.

JARS WITH HOLES FOR SUSPENSION TYPE J Plate XV

This type of jar also is uncommon in the "A" cemetery. The close similarity of form of all the examples found would date them to the same period, despite their being found at several different levels.

[1] In grave 36 an infant burial was found buried in a bowl exactly similar to No. 20.

[2] The Arabs of to-day habitually make the edges of their larger pans irregular. On being asked the reason, their invariable answer is, "It is the custom."

No. 14 is mentioned first, as it can be more closely dated than the others. It is of light-red ware with a small, rough, flat base showing the shallow focussed grooving illustrated in Plate XV, A. There are two holes just below the rim of the vessel through which a cord could be passed to hang it up. This jar is one of a group of pottery found with burial 33.

No. 8 is hand-made and of very crude workmanship. It has two irregular small holes for suspension. It is a dingy-white, which seems to be the natural color of the clay, and it has been very well baked. Traces of a dark-colored substance were found at the bottom of the jar, but in too small a quantity for analysis. This vessel has a pronounced cup-like base, in which respect it resembles No. 9. No. 9 is very roughly made of dark-red clay. No. 10 is on the whole well made, and, like No. 11, has a well-defined rim around it at the junction of the shoulder and body. The latter example is, however, very irregular in form. No. 12 is also of a light-red clay. It would appear to have been treated in some way to make it non-porous. Its base is slightly concave. No. 13 was so hard baked as to become almost vitrified. It is roughly made, and on a slow wheel as its base shows focussed scoring. Possibly it is a throw-out owing to bad firing.

Fig. 15 illustrates a quaint jar of a light-yellow color and very roughly made. The base is flat, oval in shape, and shows focussed grooving. The mouth also was oval, but the opposite sides of the rim were pressed together in the middle so as to form two mouths. A hole has been bored through the pressed-in portion of the rim to take a cord.[1]

The traces of a black substance in jar 8 perhaps give us a clue to the purpose of these suspended jars. They possibly served to hold a fat or ointment which was sufficiently expensive to cause the jars containing it to be hung up out of the way. All these jars are small enough to permit of a finger being inserted down to the bottom, except No. 15, which, owing to the shape and size of its two mouths, could hardly have been used for anything very viscous. The small size of these jars, and especially of Nos. 10-12, coupled with the roughness of their make and very obvious finger-markings, at first led to the belief that they were made by children to play with. The holes, however, we think, preclude this theory.

All these jars, with the exception of Nos. 13-15, are hand-made.

FLAT-BASED POTTERY TYPE K Plate XV

The pottery included under this title is the type most commonly found in the cemetery. On reference to the plate, it will be seen that it is heavy ware for its size. The base is thick and clumsy, flat, and marked with the scoring illustrated in the plate (A). A specimen of this type of pottery was found in practically every grave, even the poorest. No especial position was allotted to it. In many cases, two examples were found together, as Nos. 27 and 40, 16 and 29. In burial 23 three specimens were found (Nos. 19, 26, and 36). Most

[1] This vessel must have been worked into an oval shape after it had been removed from the wheel.

of these vases are simple in form with plain rims. Nos. 34-36 have more complex rims, especially the last. The squatter examples (Nos. 37 and 38) seem to be stages in degeneration, by which a more dish-like form was reached (Nos. 39 and 40).

It should be noted that the thickness of the lower portion and base in these jars is excessive. From this it would seem that they were in common use, and were made thus to avoid their easily upsetting. In the majority of cases these jars are roughly made, especially outside. No. 17 is exceptionally well finished. They vary from a light straw color to dark red. Some of this pottery was washed over with a thin cream-colored slip, noticeably Nos. 21, 38, 39, and 40. The last three, it will be noted, are the dish-like forms. The pottery figured in the bottom row of the plate is of very much the same type, but in these specimens spouts were made by pulling part of the rim outward. In reality we have here a distinct type; but in other respects these jars so closely resemble the pottery described above that they have not been put in a class by themselves.

No. 41 is yellow in color and very roughly made. Its base shows the usual scoring. Nos. 42 and 46 were found together in burial 23, but they differ considerably, the first being exceedingly roughly made and the second of the usual type. If it were not for the wheel striations and the focussed grooves on its base, No. 42 might be thought to be hand-made. No. 43, like 41, is yellow and roughly made. No. 44 is light red in color; it is badly out of shape through overfiring. It is impossible to say with any certainty for what these jars were used. A spout would hardly have been provided for a water-vessel of this size, and the only alternative is that they were used for milk. A spout of this description would be useful in pouring out the milk after the cream had formed. If heat also was employed to make the cream rise, the thick bases would serve to prevent over-heating.

ROUND AND POINTED BASE POTTERY TYPE L Plate XVI

Although these jars are of many different forms, they fall into one class inasmuch as all their bases are rounded or slightly pointed. Nos. 1-5 are very similar, and of these three come from graves, whereas Nos. 3 and 4, which are obviously of the same date, were found in the debris in the vicinity of the cemetery. These five jars are wheel-made and thin for their size. They are light red in color, but Nos. 2-4 are coated with a thin whitish slip through which the color of the pottery shows in places. The ware is good and on the whole well made, though all the examples show striated surfaces with traces of drag here and there.

Nos. 6-10 are very small jars, thick for their size, of light-red ware and wheel-made. No. 8 alone comes from a grave; the remainder were found lying in the neighborhood of the graves. No. 10 is most interesting, as well as being the best finished vessel of the group. Jar 11 was found in burial 31. It is of light-red ware with a slightly irregular surface coated with a thin cream slip.

Nos. 12-18 are somewhat similar to type E without a base. They all come from recorded graves, except Nos. 14, 15, and 17, but they had no definite position in those graves. Not one of these examples is coated with a slip, and their surfaces are rough and striated, especially No. 18, whose lower portion is marked by shallow finger-grooves.

Both Nos. 14 and 15 are hand-made. They were found together, but removed by the digger before their exact levels were recorded. Of the ornamented examples, Nos. 13 and 19, the former comes from burial 14, and is of unusual pattern, its rim and shoulder being decorated with five lines scored with a point. No. 19 comes from burial 11; unfortunately its rim is missing. It is light red in color, and has been twisted in firing. The shoulder is incised with a number of fine lines in groups of three and four. Both these examples are slightly pointed at the base.

CUPS WITH HOLED BASES TYPE M Plate XVI

The jars numbered 20 to 25 inclusive are of a very unusual pattern. Nos. 22-25 come from burial 2; each has a small hole at the edge of body and base, which was bored with a stick when the clay was still wet. The holes range from 5 to 10 mm in diameter. This ware is rough, dragged, and striated. No. 23, from burial 18, is also roughly made. The hole near its base is 8½ mm in diameter. Jars 20 and 21 are of the same type as the foregoing, but have no drainage holes. It is difficult to understand the exact purpose of these jars. They may possibly have served as strainers, being filled with some porous material through which the liquid was filtered. The fact that all the drainage holes were placed between the junction of the base and body is curious. It should be noted that the rounded bases of all these vessels would permit of their being placed in the necks of larger jars.

NARROW-MOUTHED WARE TYPE N Plate XVI

This type of jar differs considerably in form as well as in finish from the rest of the pottery found in the "A" cemetery. Of the six specimens found, only two were in graves, the remainder being scattered about at the eastern end of the cemetery at various levels. No. 26 is of thick, heavy, red ware, the surface of which at one time had been so carefully smoothed that it was almost polished. Unfortunately, it was too badly broken and weathered to be worth keeping. No. 27 came from burial 4, and is of a light-red ware and rather softly baked. No. 28, from burial 5, is light red, and thick and heavy for its size. Its surface also is very smoothly finished.

No. 29 is light yellow with an exceptionally smooth surface, almost polished in places, though it shows slight wheel-striations here and there. It closely resembles No. 30 which is red and coated with a red slip which was polished. This polishing appears to have been done with a smooth instrument, possibly a piece of bone, after the jar had been removed from the wheel. The markings resulting from the polishing are irregular and in short strokes of various widths. The coloring-matter appears to be haematite.

No. 31 is of slightly different form. It is straw-colored, and even now looks almost new. It is wheel-made, with a very smooth face marked only here and there with fine striations.

In Nos. 28-30, we have a most interesting series, which is dated to the period of the "A" cemetery by the finding of No. 28 in burial 5. These jars, though heavy for their size, are exceptionally well finished, and there is no doubt that examples Nos. 26, 27, and 31 belong to the same period, because they also are so well finished. It is impossible to say for what these jars were intended. From the narrowness of their necks it is probable that they held a powder or some other easily-extracted substance. As they are comparatively rare, it is possible that they were imported; in that case their apparently useless weight would certainly protect them from breakage in the event of their having to travel a long distance.

SIMPLE DISHES TYPE O Plate XVI

The pottery dishes shown at the base of this plate are not particularly common in the burials,[1] though they were found in embarrassing quantities on the site itself and in other parts of Kish. They appear to have been the most common form of pottery used, and evidently served to hold food. They vary very little, though some are better made than others; all have a very rough base with characteristic wheel-scoring. The color of the clay varies from light yellow to dark red, according to the degree to which they were fired.

The table given below shows the number of pieces of pottery of the given types that were placed in each grave. Graves 1, 18, and 23, it will be seen, each contained two jars of the handled type, one large and the other small. Why it was thought necessary to put two of these jars in a grave, it is difficult to understand, though it is possible that each grave contained the burial of a small child as well as that of an adult.[2] In practically every case, both a handled jar and a brazier were found. Wherever only one or the other was found, that is, in burials 1, 8, and 16, the bones had been disturbed, and it is possible that the brazier in the first case and the handled jars in the second and third were removed anciently.

Next to types A and B, type C is that most frequently found. It has occurred in varying numbers in twenty-one burials. In seventeen graves, however, not a single example was found. Type C is closely followed by type K which was found in twenty-one graves. The largest number of jars of this type found in one grave was 3, but they nearly always occur singly or, more rarely, in pairs. Type O was only found in eleven graves, no less than four examples coming from each of burials 3 and 32 and three from burial 27. It is curious that a cup of so simple a form should be comparatively rarely placed in the graves, whereas it is frequently found outside them.

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[1] They were found in graves 3, 7, 11, 13, 16, 21, 23, 27, 31, 32, and 36.

[2] Unless the body of an infant was placed in an urn, it is practically impossible to find traces of its bones owing to their extreme fragility.

TABULATION OF POTTERY TYPES

Asterisk denotes disturbed burial

Number of Grave	Sex	A	B	C	D	E	F	G	H	J	K	L	M	N	O
* 1	?	2		2		2					2				
* 2	M.	1	1	4							1	1	3		
* 3	C.	1	1												4
* 4	F.	1	1	2										1	
5	M.	1	1	5							1	1		1	
* 6	?			1							1	1			
7	?										2				1
8	F.		1												
9	F.	1	1			2					1				
10	C.														
*11	M.			2				1			2	2			1
12	F.	1	1	1		1	1				3				
13	F.	1	1			2			1						1
*14	M.	1	1	2		1						2			
15	F.	1	1	1							1				
*16	M. and F.		1	3							1				1
17	?			1											
18	C.	2	1										1		
19	F.	1	1								1				
20	M.	1	1	2							2				
21	F.	1	1	1							1	2			1
*22	?														
23	F.	2	1		1						3				1
*24	F.			2	1	2					1				
25	F.										2				
26	?			2											
27	F.			1							1				3
28	M.			2					2		1				
*29	?	1	1	2		1	1								
30	F.			1							1	1			
31	?											1			1
32	F.	1	1			2					1	1			4
33	M.	1	1							1	1				
*34	M. and F.	1	1	3		1									
35	?														
36	C.						1					1			2
*37	?														
*38	?			1											

The hand-made jar (type J) is the most uncommon. Only one specimen has as yet been discovered in a grave (burial 33). As examples of this type of jar, all of which are illustrated in the plate, have been found outside the graves, it is possible that this particular specimen was accidentally included in the filling of the grave, though it certainly appeared to belong to the burial.

Two rare types (M and N) have each occurred in two graves. They were probably used for some special purpose, hence the infrequency of their occurrence.

III. TOOLS AND WEAPONS

The copper weapons found in the "A" cemetery are mostly rather fragile. In many cases they were beaten out of thin sheet metal, and it seems likely that some were manufactured expressly for funeral equipment, as they are much too thin for actual use. Daggers and knives are a common feature in the cemetery. All the daggers are provided with short tangs, to which handles were fastened by from one to three rivets. It would seem that the majority of these handles were of wood or some other perishable material, as only four have been found, one silver, one wood, and the third calcite (Plate XVII, Nos. 9, 12, 16).[1] Some of the handles were fastened on with bitumen without the aid of rivets (Plates XVII, No. 10; XVIII, Nos. 1-3, 5, 6, 8), and this substance was also used to secure the blade more firmly in the handle in many of the rivetted specimens. As in many cases fragments of fine matting were found adhering to the blades, it apears that the weapons were carefully wrapped up before being placed in the grave. These fragments were preserved only because they were impregnated with copper salts and therefore resisted decay. It is possible that they may once have formed part of the sheath of the weapon. But whether this were so or not, it is certain that the matting around the weapons was not part of the matting in which some of the bodies appear to have been wrapped.

BATTLE-AXES Plates III and XVII

The two battle-axes numbered 1 and 4 in Plate XVII came from graves 20 and 2. A similar axe to No. 4 was found in burial 16, but it was too much damaged to be drawn. No. 1 is made from sheet copper (see also Plate III, No. 3). It was first cut to shape, and then the upper portion was bent over to form a socket for a handle. The end of the loop forming this socket was merely bent against the top of the blade and is still free. Doubtless it was formerly tied down to the blade and handle by a thong. Some rush-like material was found adhering inside the socket, which must have been employed as packing between metal and wood. The striking end of the weapon has a curved edge. Though the axe is so small, it was doubtless a very effective weapon. The metal from which it is cut is 3 mm thick.

No. 4 was found in pieces, but it was possible to restore it sufficiently to draw it (see also Plate III, No. 3). It was cut from sheet metal about 2 mm thick. This weapon could hardly have been intended for actual use, as even the slightest blow would double it up. As in No. 1, the loop for the handle is formed by bending over the upper end of the blade. In its present corroded state, it is not possible to determine whether any attempt was made to weld or solder the turned-over end. The weapon will have to be suitably treated to remove the thick patina before this point can be settled. The striking portion

[1] The design on the handle of No. 16 is illustrated in Plate XVIII, No. 4.

has been beaten to an edge. An axe exactly similar to this one was found in burial 16, but it is in very bad condition.

The position of the axe could be recorded only in burial 20, as this grave alone was undisturbed. It was found with a copper dagger under the pelvis of the skeleton, which suggests that the weapons were carried in a belt.[1] The weapon numbered 8 in the plate came from burial 34, which was disturbed anciently. Like the other weapons, it was cut from sheet metal, which was in this case 1 mm thick. It is crescent-shaped with a projecting tang in the middle and at either end. This blade was originally backed with wood, which projected to form a long handle. It exactly resembles the axe held in the left hand of the Sumerian king in an inlaid plaque, which was found at a lower level (Plate III, No. 7). On comparing the two, it will be seen that the blade was lashed to the handle in three places.[2]

The curious implements shown in Plate XVII (Nos. 2, 3, 5, and 6) were found in burials 2 and 16. Their purpose is difficult to explain. Nos. 2 and 3 were found together, and evidently form a pair. They were in a disturbed grave, from which all the bones had disappeared except those of the feet, close to which they were lying together with other objects; but whether this was their original position it is impossible to say. Each is cut from a flat piece of copper. In neither is there any trace of an edge (see also Plate III, No. 1). Nos. 5 and 6, found in grave 16, are not quite so curved (see also Plate III, No. 2). This burial also was disturbed, the bones of two, if not three, bodies being mingled together in great confusion.[3] The articles in question were found near one of the skulls, and No. 6 was wrapped round the mouth of a jar in such a way that it must have been in a soft or springy state when placed in the grave, so that it was bent by the pressure of the earth.

It will be seen that both have bluntly pointed ends and taper gradually to what must have been the handle. This end is roughly notched as if to take the thong which fastened on the handle. There is no trace of an edge and, like Nos. 2 and 3, these two examples were cut from a flat piece of beaten copper, 2 mm thick. These four copper implements resemble sickle-blades in shape. If used for this purpose, they must have been backed by long pieces of bone or wood. But the absence of any edge, or even teeth, I think, removes this possibility, especially when coupled with the fact that sickles in pairs would hardly have been placed in graves. The two burials from which they came also contained battle-axes, showing that their occupants were of the male sex, though it is possible that in the double burial 16 the second occupant may have been a woman and that these copper implements were her property. Burial 2, however, proves that objects of this nature were also buried with men.[4]

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[1] For the dagger, see Plate XVII, No. 11.

[2] A very similar weapon, but thicker and made of cast metal was used in Egypt in the twelfth dynasty. The specimen from Kish is of very primitive make. See also Plate III, No. 6.

[3] No evidence as to the sex of the bodies found in grave 16 could be obtained owing to the broken condition of the bones.

[4] There is a certain resemblance between these objects and an implement carried by a man on a piece of shell carving in the Louvre, which would imply that we have here some form of battle-axe. If this be so, each blade would have required a very heavy backing which would not have permitted much of the edge to project. See the Louvre Catalogue, p. 389, and HANDCOCK, Mesopotamian Archaeology, p. 310, Fig. 78.

These objects also remotely resemble a curious wand held in the right hand of a female figure carved in mother-of-pearl, which formed part of a series of inlaid figures found in the same mound as the graves, but at a lower level. It is possible that these objects were used in dancing. A third suggestion is that, like the strigil of the Romans, they were used to scrape the body. They are well adapted by their shape for this purpose.

DAGGERS AND KNIVES Plates II, III, XVII-XVIII

The finest dagger found in the cemetery, though not the best preserved, is illustrated in Plate XVII, No. 9. In this weapon we have the very unusual feature of a slightly-curved blade. The handle is of wood covered over with a thin plate of silver which is folded round it and joined down the side. Three copper rivets fasten the handle to the tang. It is probable that a boss once finished off the handle, and that, as no trace of it was found, it was made of wood. The blade and tang are together 210 mm long; the blade alone measures 145 mm. Owing to extreme corrosion, it has not yet been found possible to measure the thickness of the metal accurately, but in its thickest part it appears to be about 3 mm. This dagger was found in burial 16, in which there was more than one skeleton; but, as the grave had been disturbed, its exact position with regard to the body could not be ascertained. This weapon shows a high level of craftsmanship (see also Plate III, No. 4).

No. 10 was cut from a flat piece of copper. There are no signs of rivets, but the flat tang was fixed in the missing handle with bitumen (see also Plate III, No. 6, second weapon down). The metal is in an excellent state of preservation, but is very thin, averaging only 1 mm in thickness. It comes from burial 34, which was in a badly disturbed state. No. 11 is also cut from sheet metal, 3 mm thick, and is in fair condition. It has a short tang with rounded top which was fastened to the handle by means of a single rivet. This object was found lying under the pelvis in burial 20 in company with the axe illustrated in the same plate (No. 1).

No. 12 is more substantially made. It is 3.5 mm thick in the middle and gradually thins out toward its edges. As it has been shaped by hammering, it is in a good state of preservation. The remains of a wooden handle were found adhering to its three rivets. It comes from burial 14, but its exact position could not be determined, as the grave had been disturbed.

No. 13 was found in burial 28 close to the pelvis. It is in excellent condition, and is 2.5 mm thick in the middle. To give additional strength, there is a vein 2 mm wide down the middle of either side of the blade. This is the only specimen from the cemetery which has this feature. The handle could not be found, but it was originally fastened to the tang by two rivets (see also Plate III, No. 5).

No. 14 is well preserved. It was lying on the pelvis in burial 33. Its thickness in the middle is 2.5 mm. The tang shows traces of the bitumen, which was used to fasten on the handle in addition to the two rivets. In No. 15 the

blade is thickened down the middle for additional strength. It is 3.5 mm thick in this region. It comes from a disturbed burial (No. 14) and, moreover, was found broken. The upper part of the tang is missing; it probably held a second rivet.

In burial 4 there were no bones, but a dagger (No. 16) was found beneath a group of badly broken pottery. The weapon is just over 1 mm thick, and was cut from sheet copper. The top of the tang is missing, and may have had another rivet. What appears to have been the handle was found in close vicinity,—a short piece of calcite which at first sight resembles a cylinder seal. Owing to the action of salt, this handle has cracked and become irregular in shape. The design on the handle was a simple one of incised lines in parallel groups of three, crossing one another to form a series of lozenges (Plate XVIII, No. 4). No. 7 in Plate XVII comes from burial 7, where it was found just in front of the face. It seems to be a small knife or razor. The top of the blade is missing. As the blade and tang together are only 40 mm long, it is possible that this article was once contained in a toilet-case similar to those shown in Plate XVIII, Nos. 22 and 23.

No. 1 in Plate XVIII is a dagger of thin metal, less than 2 mm thick. It does not appear to have been rivetted to the handle; but this is not certain, as the upper part of the tang is missing. There are traces of bitumen adhering to the tang. This weapon was found close to the knees in burial 8. In Nos. 2, 3, 5, and 6 we have a different type of article that resembles a knife rather than a dagger. They are peculiar in that they possess long, thin tangs which were inserted into handles without rivetting. Their size precludes them from being weapons of offence or defence and places them in the category of household articles. In some respects they resemble spear-heads, but their extreme thinness would have made them useless for this purpose.

No. 2 was found in burial 5 beneath a jar in front of the face. There is a round tang, and the blade is but a little over 1 mm thick. It was beaten out of a piece of copper wire, of which the tang represents the original diameter. It has been badly bent through pressure. No. 3 was found close to and behind the head in burial 23. From the objects found in this grave it seems to have been that of a woman. The knife blade is beaten from wire of the diameter of the tang (see also Plate II, No. 16). No. 5 comes from burial 34, but its position could not be ascertained. The blade is .5 mm thick (see Plate III, No. 6, third weapon from the top). No. 6 was found in perfect condition beneath a group of pottery in burial 4. It is well made, but thin for its size, being not over 1 mm thick (Plate II, No. 13).

RAZORS (?) AND ADZES Plate XVIII

The objects shown in Plate XVIII (Nos. 7-13) all have a cutting edge at one end, the other end being either turned over at right angles or neatly rounded off. They were probably used as razors or to cut skins or clothing. No. 7 is a thin, flat blade, 2 mm thick at the top, flat in section, and tapering

gently to a cutting edge which shows signs of much use. It came from burial 23, and was lying close to the pelvis of the skeleton (Plate II, No. 21).

No. 8 is 2.5 mm thick with an edge at its wider end. From its thickness, coupled with the fact that its upper end is slightly notched, it is possible that this object is an adze-blade. It is well made and shaped, but has been anciently broken at one corner of the edge. It was found just behind the head in burial 33 (see also Plate II, No. 19). Nos. 9 and 10 are of the same type. The former was found in burial 5 lying with other copper objects under some pottery in front of the face. It is made from a piece of thick, flat wire, which was hammered into shape, leaving a slight ridge down the middle. There is a fine edge at its broader end, and the upper portion has been turned over at right angles. The thickness in the middle of the blade averages 2 mm (see also Plate II, No. 20). No. 10 was found with a knife close to and in front of the right knee of the body in burial 8.

No. 11 is flat in section and 5 mm thick at its upper end. The edge is chisel-shaped, but the butt shows no signs of having been hammered. This again is probably an adze-blade. It was found on the eastern side of the "A" cemetery about one metre below the surface of the ground (see also Plate II, No. 18). No. 12, from burial 4, was found under a group of jars. It is almost rectangular, of thin metal, only just over 1 mm thick, and has a flat tang 16 mm wide. The edge is at the bottom, and is unfortunately badly broken. No. 13 was not found in a burial, but lay beneath a wall provisionally dated to the period of Dungi. It averages 2.5 mm in thickness, and has the usual cutting edge.[1]

CHISELS Plate XVIII

The three chisels numbered 13a, 14, and 15 are well made, in fact Nos. 13a and 15 still look quite serviceable. No. 13a was found in burial 5 under a jar in front of the face. No. 14 was recovered from just below the surface of the ground on the east side of the mound; No. 15 from burial 19, where it was lying close to the right hand of the skeleton. No. 13a is 142 mm long and 4 mm square. Nos. 14 and 15 are respectively 10 x 7 mm and 9 x 4 mm in cross section.

SAW OR SICKLE BLADE Plate XVIII

The object numbered 16 is most interesting and might be either a saw or a portion of a sickle-blade. It is a thin blade, only 1.5 mm thick, the lower end of which looks as if it had been anciently broken away; but until the patina has been removed it is impossible to determine whether this is actually so. One edge of the blade is irregularly serrated. The teeth which average 1 mm in length were cut with a sharp instrument. Though found lying by itself in rough debris near a group of graves, this implement has been included in this report, because it is possible that it came from a disturbed grave.

[1] This tool is, of course, of earlier date than the time of Dungi.

IV. HOUSEHOLD AND TOILET ARTICLES

SPINDLES Plate XVIII

The spindle numbered 17 in this plate is the only one that has been found in the "A" cemetery up to the present. It lay in front of and at some distance from the face of burial 21. The metal portion is a copper rod, now 123 mm long and 3 mm in diameter. Unfortunately, the top of the rod is corroded away. The lower end is square in section immediately below the whorl, and terminates in a simple hook. The whorl is hemispherical in shape and made of a porous, white paste which was formerly glazed. It still shows a faint green tint which may once have been blue. It is 25.5 mm in diameter and 11 mm deep (see also Plate III, No. 5). The two whorls numbered 18 and 19 in the same plate must have come from similar spindles. They were found just below the surface of the south slope of the cemetery mound, and had possibly been washed out of neighboring burials.

No. 18 is made of shell, and is cone-shaped. It is 20 mm in diameter at the base and 14 mm high, and is ornamented with four triangles incised in the shell. A small piece of lapis lazuli was formerly inset in a small round depression in the centre of each triangle. No. 19 is very similar to No. 18, and measures 22 mm in diameter and 9 mm in height. It also is made of shell, but is not so well preserved; it is somewhat powdery owing to the action of salt. The design upon it consists of three triangles, the spaces between which are halved across, and in the middle of each triangle a depression remains in which lapis lazuli was once inlaid. Both these whorls were cut from the apex of a shell; their bases show the arrangement of its convolutions.[1]

The objects numbered 20 and 21 come from grave 34, which was pillaged anciently; its contents were in great confusion. No. 21 is a fragment of a handle made of glazed pottery, formerly blue in color, but now light green. It is possible that it belonged to the knife numbered 5 in the same plate. The long handle (No. 21), however, does not fit any of the copper objects found in grave 34. It is now 127 mm long by 19 mm in diameter at its widest part and 14 mm at its narrowest. It is made of a porous, white paste. The color of the glaze has long since disappeared, but there is a slight trace of green here and there. A shallow spiral groove 5 mm wide has been cut in the paste to take a black substance resembling bitumen, which was smoothed off flush with the surface. This latter must have been run in after the glazing was done, as its melting-point is very much lower. A small hole was pierced at 78 mm from the rounded top of the handle, presumably for a cord. The handle is entirely hand-made, and is slightly irregular in shape (see also Plate III, No. 6). An exactly similar handle was found in minute pieces in the same grave.

[1] A similar whorl to these two was found in burial 23, but in too bad a state to be drawn. It was 19.5 mm in diameter and 10 mm in height. No trace of its spindle could be found.

TOILET CASES Plate III, No. 6; Plate XVIII, Nos. 22 and 23

Nos. 22 and 23 are toilet sets which both came from grave 34. The second and better preserved specimen is a cone-shaped case made of sheet copper with the edges slightly overlapped. It measures 15 mm in diameter at the open mouth and is 72 mm long. The point of the case is ornamented by a thin band of silver 3 mm wide, and a similar band seems to have ornamented the top of the case 8 mm from the edge, as the impression of it still remains, and there is a small rivet hole on either side. The case contains three small copper instruments on a copper ring. But, owing to corrosion, they have stuck to each other and to the case, and proper treatment will be necessary before they can be removed for examination. No. 22 is not at all well preserved, and the point of the case is missing. It is made in exactly the same way as No. 23, but has no silver bands.

A third toilet-case was found in grave 16, but so badly broken that it could not be drawn. It was possible, however, to examine its contents, which were found to be two small, pointed rods and a thin, blade-like piece of metal. It is difficult to avoid concluding that even in those far-off days the belles of Sumer manicured their hands.

HAIR ORNAMENTS Plate XIX

The number of hair-pins worn by the Sumerian women of the period of the "A" cemetery varied between one and three. In graves 8, 9, 13, 16, 21, 23, and 24, two were found; and from each of graves 12 and 15 no less than three were taken. The number of these pins that were worn, in conjunction with their very considerable weight, would indicate that the coiffure of the period was elaborate. It perhaps resembled that of the women of the Far East at the present day. Only the pins with coiled heads (Plate XIX, Nos. 5-8) were found in male as well as in female burials (graves 4, 14, 31, and 33), and it is probable that this type of pin was used as a tool rather than as a hair-pin. One pin of this type, however, came from grave 15, which also contained pins that were obviously intended for the hair. It would seem that hair-pins were worn as such only by women.

The four pins (Nos. 1-4 in Plate XIX) are made of copper. They are flattened in the middle, and the top is bent over at right angles. They appear to be hair ornaments, for they were all found close to the head. No. 2, however, is of some weight and length, and must have been a cumbersome object to wear in the hair. The flattened central portion of the pin was possibly contrived to prevent the pin from twisting round in the hair. This portion is ornamented in two of the pins, and when the remainder of the pins have been properly cleaned, it is possible that they also will be found to be similarly ornamented. In Nos. 3 and 4 a small hole was bored through this portion of the pin. There is a similar hole in most of the other types of pins, intended, it would seem, to take a small metal ring, as shown in the broken pin numbered 26. This ring, however, seems to have been easily lost, as only the

one example has been found. It was probably intended that a strand of hair should be passed through the ring to prevent the pin from slipping from the head. In all, seven pins of this type were found in the "A" cemetery.

No. 1 was found with No. 14 lying in front of the neck in burial 12. It is 180 mm long. The curved head was ornamented with a disk-shaped carnelian bead, the tip of the pin being filed to receive the head and burred over slightly to hold it in place. There is a simple design incised on the flattened portion of the pin (see also Plate II, No. 10).

No. 2 is by far the biggest specimen found so far; it is 267 mm long. Its head is hemispherical and made of white paste with fluted sides (probably at one time glazed). A thin silver plate partially covers the top of the head, and the whole effect is that of a conventional flower. The pin itself is square in section immediately behind its head, then flattens out lozenge-shape in the middle, below which it rounds off toward the point. The design, if any, on the flattened portion is until treatment entirely concealed by patina. This pin was found in burial 23 lying close to and at the back of the head.

No. 3 lay in front of the face in burial 9. It measures 184 mm in length. It is of the same shape as the other pins, except that it has a more pronounced bend at the top, which may, however, be accidental. There is an incised design on one side of the middle portion. The bead is missing from the head of the pin; and, as it could not be found, it is to be surmised that it was of wood and has decayed (see also Plate II, No. 12). A very similar pin to this one was found in grave 15.

No. 4 has no point. The head is ornamented with a lapis-lazuli bead capped by a thin, dome-shaped piece of silver. It was taken from burial 16; but, owing to the disturbed condition of the grave, its exact position could not be noted. A very similar type of pin to No. 3 was found in burial 27. It was unfortunately removed by a digger before its exact position could be recorded. It measured 132 mm in length, and the head was ornamented with a large, white bead which crumbled to powder directly it was lifted. The middle portion appears to have a pattern incised upon it, but it is at present hidden by the patina. Grave 34 also contained a pin of this type, but in fragments owing to the burial having been disturbed. It appears to have been cut out of a piece of sheet metal, and a round paste bead was found in a powdery condition close to its tip.

PINS WITH COILED HEADS Plates IV and XIX

A very simple form of hair ornament was made by slightly flattening one end of a copper rod and coiling it to form a head. Only six specimens of this type have been found, four of which are shown as Nos. 5, 6, 7 and 8 in Plate XIX. Not one of these pins is perforated with the hole so common in the other types, but perhaps no ring was needed owing to the small size of the pin. The position of the two first specimens illustrated could not be noted, as they were found in graves in which but few vestiges of bones remained. The

third was lying close to and in front of the pelvis, where it may have fallen when the body was placed in the grave. The fourth lay in front of the head.

No. 5 was taken from grave 4. It is 93 mm long, and was made from a copper rod 3.5 mm in diameter. The head of this pin is very slightly coiled so that it forms a small eye. No. 6 from burial 14 is 145 mm long and 6 mm in diameter. Its head has been but slightly flattened, but it is tightly coiled. Two pins of this type were found in this grave. No. 7, found in grave 31, is 100 mm long. Its flattened head is rolled over several times to form a whorl (see also Plate IV, No. 7). No. 8, from burial 15, is made from copper wire 4.5 mm in diameter. The head has been beaten into ribbon form and twisted up into a large tight coil (see also Plate IV, No. 8). A pin of this type from grave 33 measures 147.5 mm in length by 6.5 mm in diameter at the thickest part. Its upper end is slightly flattened and rolled over once. The pins in graves 14 and 33 were both found in what are presumed to have been male burials. They may not, therefore, have been intended for use as hair-pins, but rather as some kind of borer. It must, however, be admitted that the pin in grave 33 lay behind the head. The position of the pin in burial 14 unfortunately could not be determined owing to the bones being disturbed. Serviceable daggers were found in both these graves, which could hardly have belonged to the funeral equipment of a woman.

ANIMAL-HEADED PINS Plates II, IV and XIX

The four pins illustrated by Nos. 12, 13, and 14 are the only ones that were found of their type. Nos. 13 and 14 appear to have been cast, and the design, as far as can be seen until the incrustation has been removed, is a bull's-head. No. 12 is 113 mm long, and the shank is 4.5 mm in diameter just below the head. The latter is formed by first flattening out the rod and then fretting out the horns and ears of an ox from the flattened portion. A rough semblance of the actual head of the animal was ingeniously contrived by bending a strip of metal over between the horns. This pin was found in burial 13 lying in front of the face together with a pin identical with No. 27 (see also Plates II, No. 14, and IV, No. 15). No. 13 was discovered in a building some distance from the cemetery, but it has been included for the sake of comparison. The face appears to be human, but, as it is very incrustated with patina, it will have to be cleaned before this point can be determined. No. 14, from burial 12, was found in front of the neck of the body. It is 200 mm long, with a round shaft tapering to a point. The head appears to be that of an ox with short, curved horns, but this again can only be decided after the removal of the crust that covers it (see also Plate IV, No. 14). A similar pin to No. 13, found in burial 25, was in too corroded a condition to be drawn (Plate IV, No. 13).

SIMPLE HAIR-PINS Plate XIX

The commonest form of pin is a straight rod tapering gently to a point with either a plain, rounded head or topped with a bead of lapis lazuli or glazed paste. The majority of the simpler hair-pins are round in section.

Some, however, are either square (Plate XIX, No. 16), from graves 12 and 15; hexagonal (No. 20), from graves 9 and 32, or octagonal (No. 28), in section below the head, gradually becoming round toward the point, from graves 23 and 24. No. 20 is of a simple type with a plain, slightly flattened head. It is 190 mm long by 9.5 mm in diameter at its upper end, which is hexagonal in section. The pin gradually becomes round as it approaches the point. It was found lying across the neck of the body in grave 32 (see also Plate IV, No. 1). No. 21, whose upper portion is square in section, came from a grave which had been disturbed in ancient times.

No. 22 was found together with No. 5, lying under some small jars in grave 4. It is long and narrow, 3.5 mm in diameter below the head, which is a slight knob or boss measuring 5 mm in diameter. No. 23 came from the temple site beside the ziggurat at Tell Ahaimir. It has been included here, as it is obviously of the same type as the others figured. It was probably brought to the site in the earth which was used to fill the foundations of the later temple. No. 25 lay close to the head of the occupant of grave 18. It is 108 mm long and 4 mm in diameter. The head resembles that of a nail, and is 10 mm in diameter (see also Plate IV, No. 3).

The ringed pin (No. 26) was discovered one metre below the surface on the north side of the cemetery. A copper wire was passed through a hole 16 mm from the top of the pin, and its ends coiled on one another to make the ring. Unfortunately, the point of the pin is missing (see also Plate IV, No. 4). Pins with plain tops are not so frequently found as are those which have, or had, a head made of stone or some other material. As the heads of many pins of the latter type are now missing, it must be concluded either that they were missing when the pins were placed in the grave or that they were made of some material that readily decayed. This last supposition is the more probable. It would account for so many pins now being headless, though the point on which the head was fixed still remains. Nos. 16-19 and 24 all had bead-like heads. The last three came from graves; the first two, from the eastern slopes of the cemetery. No. 16 is square in section at the top, and gradually rounds off toward the point.

No. 17 has a square projection to take the head, but is otherwise round in section. No. 19 lay on the shoulder of burial 5. No. 15 lay together with No. 24 in front of the neck in burial 8. A small lapis-lazuli bead is fitted upon the top of the pin which was thinned to receive it. No. 21 measures 221 mm in length. Its upper portion is square in section, and the hole for the ring is bored through this portion of it. This pin was picked up on the surface of the cemetery mound. The fine specimen numbered 27 is in excellent condition, and measures 230 mm in length and 9.5 mm in diameter below the head. The round lapis-lazuli bead which forms the head is 13 mm in diameter. It lay close to the pelvis of burial 21 (see also Plate IV, No. 9).

No. 28 is a small pin from the pillaged burial 34. It is 151 mm long by 6.5 mm in diameter just below the head. The upper portion is octagonal in

section. The head is of lapis lazuli and somewhat out of shape. It was firmly fastened on by burring over the top of the thinned-out portion on which it was fixed (see also Plate IV, No. 10). A pin which lay some distance from the head in burial 21 was so cracked and swollen by corrosion that it could not be drawn. It measured 233 mm in length, and was surmounted by a round bead of lapis lazuli 16 mm in diameter. The bead is capped above and below by thin dome-shaped pieces of silver which leave but little of the bead to be seen (Plate IV, No. 11). A copper pin from burial 19 was round in section tapering to a point. Its head, 9 mm in diameter, was black in color and might once have been glazed. Its composition is unknown. This head was fastened to the pin by means of a small point on the top of the latter, bitumen being used as an adhesive. A beautiful pin, found in grave 9 close to the pelvis of the body, is 217 mm long by 9 mm in width at its head. It is hexagonal at the top, and gradually becomes rounded as it narrows down. Its six sides are not equal in width, two being 6 mm wide and the remaining four averaging 4.5 mm. The head of the pin was of calcite or paste, and was secured to the metal by bitumen, but it was found in a powdered condition (Plate IV, No. 12).

NEEDLES AND BODKINS Plate XIX

Of the needles or bodkins illustrated in Plate XIX (Nos. 10 and 11), No. 10 does not come from a recorded grave. There is, however, every reason to suppose that it has been washed out of a grave that formerly existed on the side of the cemetery mound. It is 150 mm long. The top has been slightly flattened and perforated to form an eye. The metal around the eye has been slightly grooved lengthways, as in modern needles, to facilitate threading. No. 11 from burial 4 is 192 mm long and 2.5 mm in diameter. This is of a more primitive type than No. 10, as its top has simply been bent over for 11 mm to form a rough eye 7 mm in length. These needles were probably used for leather work. Their points are not very sharp, and on this account a hole would have to be bored first before the needle could be inserted.

METAL BOWLS AND DISHES Plate XX

Metal bowls and dishes are fairly frequently found in the "A" cemetery, showing that this type of utensil was well known and in common use in the period to which the graves belong. As will be seen, these bowls and dishes are simple in form and of somewhat primitive make. Their usual position in the grave was either just in front of the face or immediately behind the head. In grave 21, however, where no less than three bowls were found, one was placed near the feet. In burial 15, the one metal dish was laid close to and in front of the pelvis. Usually, more than one metal dish was placed in a grave; there were two in burial 11, three in burial 21, and four in grave 34. The large number in this last grave is accounted for by the fact that it held more than one body. Three of the metal dishes had handles, as shown in Plate XX; another dish found in burial 23 probably once possessed a handle, as did

No. 12 also. In two burials (Nos. 21 and 23), the right hand rested on a copper dish supported on the left hand, as if to suggest that these dishes were greatly valued. Copper, as is well known, is not a suitable metal for food utensils, as it is readily attacked by acids. This must have been recognized even in early times, and for this reason it is supposed that these bowls and dishes were intended solely for drinking.

Nos. 1 and 8 came from burial 11 which was disturbed, and both were found broken. No. 1 is 116 mm in diameter at the rim and 63 mm in height. No. 8 is a little smaller and deeper and has a flat base. Both are well made and carefully shaped. With these two dishes a piece of repoussé copper (No. 13) was found, whose shape suggests that it is part of the handle of a dish which has disappeared.

Nos. 3, 7, and 9 are an interesting group from burial 21. No. 3 was placed immediately behind the head. It is 116 mm in diameter and 60 mm high; formerly round, it is now very much bent and twisted by the weight of the earth upon it. No. 7 was near where the feet would have been, if undisturbed. Its diameter is 112 mm, and it stands 27 mm high. The base is flat and measures 48 mm across. This specimen was unfortunately broken, and fragments of it are missing. No. 9 is of a more elaborate type. As it is bent, it could only be measured approximately; it averages 143 mm in diameter and 40 mm in height. The handle and bowl are of one piece of metal, the former being a plain strip which is coiled over at the end. It was found in front of the face with the right hand resting upon it and the left hand underneath. It is well made, but bent and cracked; small fragments are missing through corrosion.

Nos. 4, 5, and 6 come from burial 34. Altogether four copper vessels were found in this grave, but the fourth was so badly broken that it could not be drawn. It was of the same type as No. 3. The positions of these bowls could not be recorded, as the grave had been anciently disturbed. No. 4 is 87 mm in diameter and 49 mm high. It is in good condition with only a small piece missing. This bowl was made from thicker metal than the others. No. 5 is a good, simple shape, but in a very corroded state; it measures 89 mm in diameter and 36 mm in height. No. 10 is a rather shallow bowl, 93 mm in diameter and 26 mm deep, with a protruding flat base 46 mm in diameter. It is badly broken. The handle is simple, flat, and in one piece with the bowl. It is 14 mm wide near the bowl and 7 mm wide at the tip.

No. 6 was not found in a grave; it lay 250 cm below the surface of the ground in the southern slope of the cemetery. It is 55 mm high and 97 mm in diameter. It is in perfect condition, but it has been pressed into an oval shape by the weight of earth above it. The ornamental, handled dish numbered 11 is the only one of its kind to be found in the cemetery. It was lying on the mouth of a jar just behind the head in burial 24. Its base is, therefore, exceptionally well preserved, though the upper portion has been cracked and distorted by uneven pressure. It measures 136 mm in diameter and 36 mm in height. The base is slightly convex, but this is possibly due to its having

been unsupported. The upper portion of the bowl is ornamented with shallow fluting, whose convexity is inside and not outside, as in modern practice, showing that it was worked from the outside. This dish is well made and shows an advanced stage of craftsmanship.

No. 12 is unique in shape. It was taken from burial 2, which unfortunately had been badly disturbed anciently. Its dimensions are approximately 154 mm in length and 96 mm in width. The base and rim of the dish are rectangular, and the base is practically flat. The sides slope quickly outward, and the corners are rounded. There was at one time a flat handle at one end of the dish, but this could not be found in the grave. Three other bowls were found in different graves, which were in too dilapidated a state to be drawn. The first, from grave 12, lay with some copper hair ornaments in front of the neck. It was of the usual simple shape and very similar to No. 6. The second, in grave 23, had a handle similar to that of No. 10. The third measured 102 mm in diameter and 50 mm in height; it was found in burial 15.

The small bowl numbered 2 is made of lead. It measures roughly 75 mm in diameter at the rim and 52 mm in depth. Its base is flat and projects slightly below the rest of the bowl. The metal is in an excellent state of preservation, though it has been holed in several places anciently. It was found in grave 12 just behind the neck. A very similar lead bowl, but not in such a good condition, was found in burial 9, where it lay behind the head and beneath the cup-shaped base of a jar. Owing to its being very much dented, this dish could not be drawn. It would seem to have measured roughly 40 mm in height and 74 mm in diameter.

The use of lead for cups is somewhat surprising, as it would be thought that this metal would not have stood even gentle usage. Yet the pure metal was used, unmixed with any hardening alloy. This fact is proved by the ease with which a lead cup which was found very much flattened was bent back to its original shape. Both the lead bowls described above were thickly coated with a yellow oxide, which readily scales off, showing the metal beneath.

The usual thickness of these metal bowls was from 1.5 mm to 2 mm at the rim and 0.5 mm at the base. The thickness of the rim is the original thickness of the sheet copper from which the bowl was made. It is usual, even at the present day, to leave the rim of a hammered vessel as far as possible untouched and to beat toward the centre of the plate, so that the rim shall have as much substance as possible to stiffen it.

V. PERSONAL ORNAMENTS

JEWELLERY Plates IV and XX

The most noteworthy piece of jewellery found in the graves in the "A" cemetery was a round piece of silver with a simple embossed design. Specimens were found in five graves out of a total of thirty-eight excavated. This proportion shows that this type of ornament was very frequently worn, especially as many of the graves must have contained male burials, and others had been rifled. All these medallions, as will be seen from Plate IV, resemble one another very closely. The Sumerian silversmith seems to have resembled his colleagues of the present day in the Near East who, conservative to a degree, limit themselves to a very few designs. Another possible reason for this want of originality is that these objects may have been regarded as amulets. The central motive of the design may possibly represent the sun with its rays. The position in which this form of ornament was worn appears to have varied. The position of four of the specimens was recorded; the fifth example was found in a disturbed grave (No. 16). Of the four, two were lying in front of the neck, one close to the breast, and the fourth near the pelvis. We may, therefore, infer that these bosses were generally worn on the breast and in some cases at the waist.

The fact that these medallions were sewn to the clothing is proved by the presence of a row of five or six holes on either side close to the edge. These holes are all roughly pierced, and evidently made with a sharp point and not drilled. From this fact it is evident that the ornament could not be accidentally displaced in carrying the body to the grave or in placing it in position. It must, therefore, have been worn in different positions according to the fancy of the wearer. Only two of these pieces of jewellery were in a fair state of preservation. Silver is attacked by salt more readily than copper, and some of the specimens fell to pieces when being removed from the damp soil. Four were cut from very thin silver plate, averaging 1 mm in thickness. The design is repoussé from the inside, and is made up of a central round boss surrounded by one or more rings in relief. In two of the ornaments the spaces are filled in with radial lines made from the outside with a chisel-edged punch. Owing to the thinness of the metal, the edge was in some cases rolled over slightly to strengthen the medallion. This was somewhat roughly done.

From the objects found in the graves with these medallions, we must conclude that this form of ornament was worn by women only. One specimen (Nos. 18 and 20 are two photographs of the same object) was found in a child's grave (No. 10) in front of the neck. It is 43 mm in diameter and 1 mm thick, and its design is as described above, the outer of the two raised rings forming the edge of the ornament.

No. 21, from burial 23, was originally 55 mm in diameter and very thin with a flat, unrolled edge. It is unfortunately in a deplorable state owing to corrosion. The design is quite simple with a large raised boss in the centre, 23 mm wide, and two rings in relief. It lay close to and in front of the neck.

No. 22 came from the disturbed burial (No. 16). It is very similar to No. 21, except that its boss is larger, and there are three rings around it instead of two. It measures 46 mm in diameter.

A medallion taken from burial 32, where it was found close to and in front of the pelvis, is 48 mm in diameter, and the small boss in the centre measures 14 mm in diameter. Its edge has been turned over to strengthen it.

The best-made specimen (No. 23) came from burial 21, where it was found lying close to the breast. It is 50.5 mm in diameter and 3.5 mm in thickness at the edge. The boss is made of a shallow, dome-shaped piece of silver, 20 mm in diameter and 9 mm in height, including the plate, to which it is apparently soldered. The central boss is surrounded by three circles in relief, and the ornament is chased both back and front with fine lines radiating outward.

FILLETS

A piece of jewellery which was unique in this cemetery is a silver fillet worn by the occupant of grave 21. It is a long, narrow band, still with a certain amount of spring about it; it measures 170 mm in length, 11.5 mm in width, and 1 mm in thickness. It was adhering to the skull, lying horizontally across the forehead. Either for ornamentation or to stiffen it, both sides of the band were pricked all the way along about 5 mm from the edge. This was done with a pointed instrument, but without actually perforating the fillet. Both ends of the ornament are rounded, and there is nothing to show how it was fastened to the head. It was probably secured in the hair on either side of the face (Plate IV, No. 24).[1]

EAR-RINGS Plates IV and XX

Ear-rings, both of silver and copper, were frequently found in the cemetery. They were worn by both sexes and, as a rule, in both ears. In burials 19 and 21 two ear-rings were found in the right ear and one in the left; and in burial 9 there were two in the right ear and none in the left. The two rings in the right ear of burial 19 were one of silver, one of copper. Children also wore ear-rings, but always made of copper. A shell ring which lay in front of the face in burial 23 may possibly have been worn in the nose. It measures 19 mm in outside diameter and 8 mm inside diameter; it is cut from a round piece of shell. The ear-rings found fall into three groups:—first, plain wire, as No. 19 in Plate IV, and No. 17 in Plate XX; second, coiled wire, as Nos. 16-17 in Plate IV, and No. 18 in Plate XX. Lastly, a small type with the wire flattened at the ends, as Nos. 15 and 16 in Plate XX. Many of the coiled rings do not

[1] Compare this fillet with a similar ornament worn in the hair on the alabaster head of a Sumerian woman of early date (De Sarzec and Heuzey, Découvertes en Chaldée, Plate VI, Fig. 3).

match; that is, large rings were worn in one ear, and small ones in the other, but the rings of this type were very likely manufactured at home. The rings of the type of Nos. 15 and 16 in Plate XX were, however, probably made by a silversmith; they were always worn in pairs. The silver and copper wire used for making ear-rings varied from 2 to 3 mm in diameter. No soldering was ever done, the ear-rings being prevented from falling off by the simple expedient of overlapping the wire.

BRACELETS Plate XX, Nos. 14 and 14a

Bracelets were not often worn. They have been found in only six graves (Nos. 10, 16, 21, 23, 30, and 34), three of which were those of children or young persons. The bracelet numbered 14 is of copper and flat in section with rounded edges. Its width is 5 mm, and it is 2.5 mm thick. Two of these bracelets were found on the left wrist, and one on the right in burial 30. The two bracelets from grave 10 are made of round silver wire, 5.5 mm in diameter, with the ends slightly overlapping. Judging from their small size, 44 mm in diameter, they must have belonged to a child. In burial 21 there was a silver bracelet on the right wrist, made of a tape-like piece of silver similar to the silver fillet found with this body, but without the pricking along its edges. A similar bangle, 8 mm in width, was found on the left arm of the occupant of grave 23. Both these bracelets were in a deplorable state of preservation.

In burial 34 there was one bracelet (Plate XX, No. 14a) of copper wire about 4 mm in diameter and slightly oval in section. The ends of the wire overlap, and the diameter of the bracelet which is badly bent averages about 68 mm. A carnelian bead of cylindrical form, 9 mm long and 8 mm in diameter, which was found close to the left wrist of burial 21, was possibly worn on a bracelet of cord.

FINGER-RINGS

Finger-rings were exceedingly rare in the "A" cemetery. They have been found in only one grave (No. 23), where the right hand which rested upon a copper dish had rings upon the third and fourth fingers. They were found adhering to the phalanges, and were in a deplorable condition. Each ring was 8 mm broad. A plain, flat silver bangle on the left arm, also in bad condition, was the replica of the rings, though, of course, larger in diameter.

BEADS Plates IV and VII

Beads were found in considerable quantities in the "A" cemetery. They occurred in twenty-four graves out of the thirty-eight excavated, ranging in number from a single one to a long string. They were worn by both sexes. In view of the fact that several graves contained beads which were originally glazed, but had become extremely fragile and the same color as the soil through the action of salt, we may perhaps assume that glazed beads were placed in most or all of the burials. The materials most commonly used for the manufacture of beads, apart from glaze, were carnelian and lapis lazuli. Beads made of these

stones occurred in practically every necklace, lapis-lazuli beads being especially plentiful. Silver beads were also fairly popular, they were found in graves 3, 4, 14, and 21. More rarely used stones were limestone (graves 10 and 13), rock-crystal (grave 23), jasper (grave 27), serpentine (grave 15), and two stones, gray and black respectively, which have not yet been identified (graves 1 and 13). Only one specimen was found of each of the five last-mentioned stones. Only one shell bead was found (grave 28). It appears to be the shell of a species of Dentalium, and is 9 mm long. A number of similar shells were found close to the "A" cemetery, and had apparently also been used as beads.

The beads of the "A" cemetery can be classified by their shape into seven groups:—

(1) Disk-shaped beads with either flat or slightly rounded surfaces (Plate VII, No. 17).
(2) Squat barrel-shaped beads, occasionally slightly facetted (Plate VII, Nos. 1, 12, and 19).
(3) Long barrel-shaped beads (Plate VII, Nos. 10 and 21).
(4) Long or short cylindrical beads (Plate VII, Nos. 3, 5, 14, and 20).
(5) Squared beads, long or short.
(6) Globular beads.
(7) Ornamented beads.

(1) The disk-shaped beads were one of the commonest shapes. They form a large portion of the necklace illustrated in Plate IV, No. 28. These beads vary considerably in quality, and may be either highly or semi-polished in the same necklace. The rougher beads may be of earlier date, and have been re-used. Their holes for threading also vary greatly, ranging from one that will hardly admit a fine needle to one that is two or three millimetres in diameter. The process of manufacture seems to have been as follows: The bead was first roughly chipped into the shape of a round, flat disk, and then drilled. Several were then strung on a cord and rolled to and fro on some abrasive material, which roughly polished their faces, and in the case of the larger beads produced a slightly rounded surface.[1]

(2) A sideways motion during this process produced two facets separated by a ridge in the middle of the bead, so that it took a squat barrel shape (Plate VII, No. 19).[2] This method of polishing and shaping beads served at the same time to smooth the interiors of their holes. The same process was employed in making the beads of groups (2) and (3).

(3) Owing to their length, beads of this group revolved more evenly on the cord; hence their lateral faces curved more gently, and the central ridge characteristic of groups (1) and (2) is absent. It is, of course, possible that each of the longer barrel-shaped cylinder beads was rolled separately. The thinner disk-shaped beads were only made in carnelian and rock-crystal.[3] The

[1] This method of making the disk-shaped bead was practised in ancient Egypt from the earliest times. There is little or no difference between beads of this type from that country and the specimens found in the "A" cemetery.

[2] The amount of sideways motion depended entirely on how the beads were strung, whether tightly or loosely.

[3] One rock-crystal bead was found in burial 23.

thicker beads with a central ridge occur in carnelian, lapis lazuli, and occasionally in glaze, the latter always hand-made, but obviously in imitation of the shape of the stone beads. The more roughly finished, disk-shaped carnelian beads are, as a rule, of a brownish-red color and semi-opaque. The better-finished beads are deep red in color and nearly transparent.

(4) The cylindrical beads, whether short or long, are usually of glaze, carnelian, or lapis lazuli. The glazed beads are of the rod-like form that is so common in Egypt from early to very late times. These glazed cylindrical beads seem to have been made by dipping a thin rod or cord into a white paste, which is probably gypsum, or a composition of ash. The foundation was then burnt away, leaving a long, hollow rod of the paste. This rod was broken up into sections of the required length which were then glazed. The rod was obviously not glazed entire, unless two coats of glaze were applied, for the ends of the beads were glazed as well as the sides.

(5) The squared beads are always of lapis lazuli. Specimens were found with other beads in graves 1, 3, and 22. They were cut—presumably with a saw—from blocks of lapis lazuli, and then rubbed smooth, during which process their edges became slightly rounded.

(6) Globular beads are somewhat rare. They were usually made of lapis lazuli. They have been found with other beads in graves 1, 2, 5, 8, 10, 21, 22, and 28. Those taken from grave 10 are of limestone and lapis lazuli; those from grave 28, of glaze. The boring of a bead was done from either end, even in the thinner specimens, with the result that the diameter of the middle of the hole was often so small as to make it difficult to thread the bead. The larger beads are beautifully drilled, the holes in most beads meeting accurately in the middle. The drilling was probably done with emery powder and a thin copper rod. In each of burials 14, 20, 32, 34, and 36, one solitary bead was found which had been worn on a string around the neck. The occupants of the first two burials were males, the third was female, the fourth grave contained two bodies, a male and female, and the last was the burial of a child. The beads in burials 14, 32, 34, and 36 were barrel-shaped and made either of silver, glazed paste, or carnelian. As mentioned before, carnelian beads were quite the most popular, followed by lapis lazuli. Carnelian beads were, as a rule, highly polished, except in the case of some disk-shaped beads. For some reason, which it is not easy to explain, the Sumerians seem to have experienced great difficulty in working lapis lazuli, even though it is softer than carnelian.[1] Their lapis-lazuli beads all show a certain amount of apparently unintentional facetting, and are rarely true in shape. They look as if they had been first roughly sawn into shape, and, as suggested in the introduction to this paper, the two stones may not have been worked by the same people. The lapis-lazuli beads found in the "A" cemetery are mostly of the truncated double-cone type, as represented in Plate VII, Nos. 12 and 19, or they are barrel-shaped as No. 10 in Plate VII.

[1] The hardness of carnelian is 7, that of lapis lazuli 5.5.

(7) A very unusual type of bead was found in a necklace from grave 21 (Plates IV, No. 27 and VII, Nos. 9 and 11). The first flat, lozenge-shaped bead on the necklace is made from thin silver plate, but exactly how, it is difficult to make out, owing to the incrustation of patina. It appears to have been made from a thin piece of silver which was doubled and then folded over along the three open sides. The hole for the cord was probably made by embossing the plate down the middle of each half, so that the two grooves came together.

The bead which matches it in shape is of carnelian; its edges are rounded, and the hole is well cut. Another unusual bead is figured in Plates IV, No. 31 and VII, No. 7. It is 45 mm long, and was found by itself in grave 20. It is made of porous paste which seems to have been glazed. What the original color of the glaze was, it is difficult to determine; it is now quite a dark brown. The bead consists of two globular portions, which are fluted in the direction of the general axis, joined together by a bar, 15.5 mm long, decorated with seven annulations. Both ends are broken, and the bead may once have been considerably longer with a repetition of the globular portions. It is, of course, possible that it may have been part of some kind of fillet or necklace, but no trace was found of any other portion of it.

The cylindrical bead shown in Plates IV, No. 32 and VII, No. 21 came from burial 14, where it was the only bead found. It is of silver, and both ends are slightly damaged. It now measures 42 mm in length and 8 mm in diameter in the middle. The covering of patina makes it impossible to determine how its edges were joined, whether by lapping over or soldering.

Bead 33, in Plate IV, was the only specimen found in burial 32. It is made of a white paste, originally glazed, and its surface is now much blackened. It is decorated with incised parallel lines running round the bead at right angles to its long axis, as well as along its axis so as to form a series of minute squares. The limestone bead shown in Plate VII, No. 13 was found with two other beads in burial 13. It is 25 mm long, by 16 mm wide, 7.5 mm thick, and is decorated with incised lines. The small holes formerly held pieces of lapis lazuli. Bead 8 in Plate VII is also very unusual. It is made of sheet silver with silver rings soldered on either end. It was found in burial 21 together with the flat, lozenge-shaped beads of silver and carnelian described above.

A very curious, bright red carnelian bead was found in a necklace from burial 23 (Plate V, Nos. 25 and 30). It is 15 mm long by 5 mm in width and 4 mm in thickness in the middle; it is rectangular in shape when viewed from front or back, oval when viewed from the side. The front and back are smoothly polished, but the sides show signs of the original flaking. Both front and back are ornamented with a design of three interlocking circles in white. These circles have been painted on the stone and burnt in in some way. The white substance is extremely hard, and appears to be vitrified. A bead of the same type, measuring 9 mm in length and 8 mm in diameter, was found in a necklace from burial 21. Its highly polished surface is decorated with three lines of white, running zig-zag fashion around the bead.

A very similar bead to the one with the three circles was brought to me early in the season by a boy who said he picked it up on the "A" mound. I unfortunately rejected it, as I thought at the time that it was of modern manufacture. The bright red of some of the carnelian beads found in the "A" cemetery may perhaps be due to roasting, as mentioned in the introduction. In carrying out this process, it is possible that the white substance was by accident found to adhere very closely to the stone, and afterwards this knowledge was utilized for decorative purposes. There is no indication that the design on these ornamented beads was first incised and then filled in with white. The color adheres to the polished faces with extraordinary tenacity, and can only be removed with the point of a needle with very great difficulty.

A lapis-lazuli bead from grave 16 is roughly cut into the form of a frog (Plate IV, No. 26). It was possibly an amulet, and in form, though not in substance, resembles similar beads which are frequently found in Egypt. A long, cylindrical bead of serpentine, 48 mm in length and 9.5 mm in diameter, was found together with some short cylindrical beads of glaze in burial 15. It had the figure of a running antelope engraved upon it. It is possible that in reality we have here a simple form of cylinder seal. The hole through it has been very much enlarged through wear. A curious bead (?) was found with others in burial 19. It is made out of a piece of sheet copper bent round into the form of two tubes side by side, each of which is 23 mm long and 6 mm in diameter. If this object is actually a bead, it may have been a divider for several strings of a necklace. It may equally well have been an ornament for the hair. The latter seems more probable, as copper was apparently never used in the manufacture of beads at the period of the "A" cemetery. Bead No. 2 in Plate VII is of lapis lazuli and decorated with incised lines. As it has two holes, it probably served as a divider in a necklace of more than one string. In burial 27, a small flat pebble was used as a central stone, on either side of which were two disk-shaped beads—three of carnelian and one of jasper.

VI. CYLINDER SEALS

Seals were found in fifteen graves out of the thirty-eight excavated. In each of three burials there were no less than three seals, though only one was a double burial (graves 16, 23, 32). In the undisturbed graves, the seals were usually found in front of the upper part of the body, which suggests that they were worn on a string around the neck. In two burials (Nos. 8 and 23), a seal lay close to the pelvis, and had probably been fastened to a girdle. In grave 32, a seal lay between the hands and the chest; it may have been tied to one of the wrists.[1]

Seals are as frequently found in female burials as in those of males. As they were used solely for sealing contracts, conveyances, and other legal documents, this fact would seem to show that the women of the period transacted business on their own account, and for this purpose had their own seals. The presence of three seals in a grave containing only one burial is surprising. Possibly two of these seals had belonged to ancestors of the occupant of the grave, who may himself have been the last of his family.

The favorite material for making seals was shell. Out of a total of thirty-seven, twenty-two are cut in this material. Of the remainder, five seals are of limestone, one of bituminous limestone, four of calcite, two of haematite, one of serpentine, one of lapis lazuli, and one of glazed paste. The use of glaze for cylinder seals is most unusual, and we were fortunate in recovering a specimen from grave 1, though it is in a deplorable condition through the action of salt. Each seal is a practically perfect cylinder with flat ends. In only one case is there any trace of the concavity that is met with in seals of the period following that of our cemetery. This exception is a limestone seal from grave 4, which has a slightly concave lateral surface and flat ends.

In those seals that were made of shell, the size was limited by the size of the shell from which they were cut. The axial portion of a big shell provided enough solid material to make a seal averaging 35.5 mm in length by 17.5 mm in diameter; from a smaller shell a seal measuring 20.5 by 11 mm was cut. That the whole of the axial portion of the shell was utilized is proved by the fact that in a great number of the seals the convolutions of the shell are seen at either end. There is little doubt that all these seals were cut from the same species of shell.

A limestone seal from an unrecorded grave, measuring 30 mm in length by 16 mm in diameter, is especially interesting, because, being only partially made, it shows the method of manufacture. It is a cylindrical piece of stone and unbored. The figure of a man has been roughly cut on one side, and a man's head left unfinished on the other. The workmanship is very rough. The fact that no attempt had been made to bore the usual hole through it indicates that it was customary to do the engraving first. If this were so, it

[1] In Iraq at the present day both seal and purse are worn on a string around the neck.

argues great confidence on the part of the Sumerian in his use of the drill. But it should be noted that in this particular instance the stone is comparatively soft (Plate VI, No. 1).[1]

From the rubbed appearance of some of the seals it would appear that they had been much used. But their condition might be accounted for by their being worn hanging loose upon the person. This would also partially account for the holes being wider at the ends; in some cases they were 6 mm in diameter at the ends, whereas the diameter in the middle of the seal was only about 3 mm.

The most popular subjects for the scenes engraved on the cylinder seals are a row of animals walking or running in file or one or two lions attacking flocks defended by herdsmen armed with sticks or bows and arrows. In the latter scenes, the lions are for the most part arranged with their bodies crossing one another. They are always portrayed as seizing the animals attacked by the neck. This argues close observation of nature on the part of the artist, both as regards the lion's method of attack and the fact that these animals generally hunt in pairs. It would seem that the herdsmen of the period to which these seals belong were greatly troubled by lions, though the latter were a smaller variety than the African species.[2]

The long-horned antelope which appears on these seals was a curious animal to be domesticated, as apparently it was; on a votive tablet found at Nippur an antelope is even shown drawing a plough. It was probably present in Mesopotamia in large herds long before the occupation of that country by the Sumerians. It must have been kept chiefly for its meat; the hair is too short to be utilized for weaving. The presence of these animals coupled with that of the lion would suggest that Mesopotamia at the time was a semi-arid country like parts of South Africa at the present day. The animals portrayed on the seals are all such as would have been suited to a flat, grazing country; for example, the ostriches on the seal shown in No. 4 of Plate VI and the various types of antelope on seals 3, 5, 6, 7, 10, etc. The stag on seal 16 probably came from the better wooded and more hilly country on the northern or eastern borders of Mesopotamia.[3]

The human-headed (?) bird on seals 7, 8, 10, and 12 resembles the heraldic, eagle-like bird which was the symbol of Lagash, though it is not represented on the seals from Kish as holding a lion with each claw,—with the possible exception of No. 12. The presence of two registers on a seal is rare. And, unfortunately, the two examples shown in Plate VI (Nos. 17 and 18) come from unrecorded graves, though they are certainly of the same period as the other burials. In both, the subjects portrayed are complex and out of the ordinary,

[1] Another limestone seal, also from an unrecorded grave, is unbored, though its design, a simple tree or bush, had been finished.

[2] The Mesopotamian lion has, I am informed, recently become extinct. Two specimens presented to Sir Henry Layard were described by him as maneless, taller and larger than a St. Bernard dog. Sir Henry Layard also reported that he saw lions with long and shaggy manes not far from Mohammarah. Lt.-Col. Sykes (History of Persia, Vol. I, p. 34) reports having seen a dead lion floating down the Karun River. The lions represented on our seals are certainly not of the maneless variety.

[3] Magnificent stags and roebuck roam the forests of the Caspian Province (SYKES, History of Persia, Vol. I, p. 34).

especially in the case of No. 17 which has an extremely interesting ziggurat scene.

A scene which occurs in Nos. 15 and 17 of Plate VI and on the badly preserved seal, which is the last on the appended list (No. 983), is most unusual. Whether this human-headed object is intended to represent a human boat propelling itself with the aid of a pole, it is difficult to say. It may possibly represent the soul of a dead man being carried across the sacred river of death; if so, the dead body is concealed beneath a kind of canopy which is shown in both the illustrations. The boat is represented as being propelled by itself. A small animal, probably a kid, is present with this boat-like object in all three seals; it would indicate that the scene is of the land rather than of water. The whole motive is probably mythological, but that it was well known is shown by the fact that it has been found in three separate graves.[1]

It appears that the utmost endeavor was made to fill up every available space on a seal. It is skillfully done in most cases, especially on those seals which portray scenes of wild life, whether the animals are rampant or in file.[2]

Some kind of a drill must have been employed in engraving these seals. The scenes appear first to have been outlined with a small chisel or point, and then worked over with a drill. The use of the latter is proved by the hoofs of the animals being represented simply by drill holes in seal 2. The bodies and necks of the ostriches shown on seal 4 were finished off with a drill after first being cut with a point. Whether this drilling was done with a rod rapidly revolved between the fingers or by means of a bow-drill cannot be ascertained at present.

In the majority of the seals the deeper portions of the cuttings are as well finished and polished as the surface. This finish, coupled with the extraordinary powers of composition shown in the scenes themselves, proves that the art of seal-cutting and design was at a very high level indeed at this period. The use of the same symbols for various deities as were employed in the later periods of Babylonian history is very interesting; as, for example, the star and crescent in Nos. 14 and 16 and the crescent in No. 5. The crescent is emblematic of the moon-god; the star, of the goddess Ishtar. It is possible that the four roundels which are clustered about the star of Ishtar in seal No. 14 represent planets. These symbols do not seem to have any connection with the scenes they accompany. They were probably simply intended to fill up what would otherwise have been a blank space on the seal.

The garment worn by all the human figures on seals 13, 14, 16-18, is the *kaunakes*, or short kilt, whose lower edge in the early period is formed by a single row of fringe. In two seals (Nos. 14 and 16), the figures also seem to be wearing a shawl which is draped across the right shoulder and under the left arm. If this be so, the arrangement of the garment is unusual; it is nearly always shown the other way about, leaving the right arm free for action. The

[1] Mr. Gadd tells me that a seal with a very similar design was found at Ur this season.

[2] For the best example of the filling-up of every vacant space on a seal, observe the heraldic tail of the lion, Plate VI, No. 5. This could not be done in the case of the antelope, and a crescent was substituted which has nothing whatever to do with the design. Also note the unfinished figure of a man in front of the antelope and the scorpion above the lion's tail.

figures in seal 19 at first sight appear to be nude, but the kilts have simply been rolled up around the waist.

The figures in the seal from grave 12 (Plate VI, No. 19) and in a seal from an unrecorded grave appear to be wearing two feathers. If these ornaments are feathers, they are probably those of the ostrich.

The seals included in the appended list all belong to the same period. The majority come from recorded graves in the "A" cemetery, and most of the remainder from the site known as "N," situated about half a mile N.N.W. of the "A" cemetery (see Plate VII).

No. 1. 30 mm long, 16 mm in diameter. Limestone. "A" cemetery. Unfinished and unbored. Figure of a man with bird's legs, a stone (?) in left hand. Suspended from the left arm is what may be a bow. Close to and in front of the figure is the unfinished head of another figure (No. 1329).

No. 2. 24 by 11 mm. Haematite. "A" cemetery. Two horned animals running. One animal is looking back. Crudely cut, but very spirited (No. 934). In Field Museum.

No. 3. 17 by 9.5 mm. Serpentine. Vicinity of "N". Two long-horned antelopes in file. In front of first animal is what appears to be a tree or bush (No. 928).

No. 4. 14 by 11 mm. Calcite. Vicinity of "N." Two animals resembling ostriches running. A thicket is represented behind them (No. 894). In Field Museum.

No. 5. 16.5 by 10 mm. Shell. Grave 23. An antelope with long horns curving backward is standing in front of a lion. A crescent is shown over the body of the antelope, and a scorpion above the looped tail of the lion (No. 1288).

No. 6. 12 by 8 mm. Shell. "A" cemetery. Slightly oval in section. Roughly cut figure of an antelope running through a thicket (No. 927).

No. 7. 32.5 by 17 mm. Shell. "A" cemetery. Two registers, no line of separation. In the lower register, a line of antelopes with long horns curving backward. In the upper register, an eagle with outspread wings grasping in each claw the leg of an antelope which is looking backward. Another object between the antelopes is indistinct (No. 1277). In Field Museum.

No. 8. 17 by 8.5 mm. Shell. "A" cemetery. An eagle with outspread wings beside two antelopes, one of which is eating from a bush (No. 843).

No. 9. 20 by 11 mm. Haematite. "A" cemetery. Roughly cut and shaped. Figure of a man protecting an antelope from a lion (No. 1109).

No. 10. 21 by 10 mm. Shell. Grave 8. Worn and roughly cut. Two registers. In the upper register, an eagle with outspread wings and other objects which are indistinct. In the lower register, a row of antelopes with long horns (No. 985).

No 11. 20 by 9 mm. Shell. Vicinity of "N." Two lions with bodies crossed, each attacking an antelope. Two snakes standing on their tails with their bodies twisted together in rope-fashion (No. 773).

No. 12. 25.5 by 12 mm. Shell. "A" cemetery. A little weathered. An eagle with outspread wings with one claw grasping an antelope looking backward, with the other a lion (No. 1348).

No. 13. 36 by 19 mm. Shell. Grave 21. Rather worn. A lion attacking two antelopes in the presence of a figure seated before a shrine (No. 1333).

No. 14. 36 by 20 mm. Shell. Grave 24. Somewhat worn. Two lions attacking an antelope which is being protected by a man. A star and crescent are in the background (No. 1312).

No. 15. 19 by 11 mm. Shell. Grave 23. A curious scene representing the figure of a man in a kind of shell-like case with a forked staff in the left hand and a double-pronged instrument in the right. A calf is represented in the background with other objects which are indistinct (No. 1287).

No. 16. 24.5 by 12.5 mm. Limestone. Vicinity of "N." Figure of a lion attacking a stag. In front is a design of a coiled rope, above which are a star and crescent and the symbol of Ishtar. A man protecting the stag has an arrow in his right hand and a bow in his left (No. 1117). In Field Museum.

No. 17. 28 by 13.5 mm. Shell. "A" cemetery. Two registers. The upper register shows a scene very similar to that of No. 15, the only difference being that the shell-like case is here very much like a boat. The lower register is unusually interesting. Two figures are shown building a ziggurat and about to place a brick on the top of it. The ziggurat has four stages and panelled faces. This work is being performed in front of a seated figure wearing a longer skirt than the rest of the figures. Three figures in front of the seated figure are apparently carrying mud or bricks on their heads to the ziggurat workers (No. 1420). In Field Museum.

No. 18. 33 by 16 mm. Shell. Grave 9. Two registers. In the upper register are two lions with their bodies crossed, each attacking an antelope. Three men in short kilts are trying to protect the antelopes, two of them with bows and arrows. In the lower register are a long group of figures in short kilts with a priest performing a rite over a table or altar (No. 994).

No. 19. 30 by 22 mm. Bituminous limestone. Grave 12. A man in a short kilt separating two lions which stand on their hind legs. He is holding the lions by their throats. Farther on are two male figures, one clasping a lion by the throat, the other trying to soothe an antelope. These two last figures appear to be armed with daggers. A small kid is also represented (No. 1132).

SEALS NOT ILLUSTRATED

A number of seals have not been reproduced owing to their bad condition. Particulars of these are given below under the numbers of the burials in which they were found.

Grave 1. 26 by 14 mm. Glaze. Two long-horned antelopes in file (No. 652).

Grave 4. 22 by 13 mm. Limestone. Subject not clear (No. 714). In Field Museum.

Grave 11. 32 by 17 mm. Limestone. Subject not clear (No. 1062).

Grave 15. 23 by 11.5 mm. Shell. Two lions with bodies crossed, seizing an antelope. Tree in background (No. 1174).

Grave 16. 28 by 15 mm. Shell. Apparently a scene of a man standing by a sheaf of corn (No. 1189a). In Field Museum.

Grave 16. 28 by 15 mm. Shell. Lion attacking an antelope which is being defended by a man (No. 1189b). In Field Museum.

Grave 16. 29.5 by 14 mm. Shell. Quite indistinct (No. 1189). In Field Museum.

Grave 19. 17.5 by 18.5 mm. Calcite. Quite indistinct (No. 1262).

Grave 23. 30 by 19 mm. Shell. A seated deity can just be made out (No. 1294).

Grave 26. 26 by 12.5 mm. Shell. A lion attacking an antelope which is being protected by a man armed with bow and arrow (No. 1353).

Grave 32. 20 by 12 mm. Shell. Two long-horned antelopes in file (No. 1483). In Field Museum.

Grave 32. 19 by 10 mm. Shell. Three long-horned antelopes in file (No. 1484). In Field Museum.

Grave 32. 35 by 15.5 mm. Shell. Impression weathered away (No. 1485).

Grave 34. 16 by 8.5 mm. Lapis lazuli. An animal figure can just be made out, and seems to be that of a long-horned antelope. Though this seal was made of hard stone, it had been reduced to minute fragments by the action of salt (No. 1513).

The following seals come from unrecorded graves in the "A" cemetery, and are given under their registration numbers:—

No. 1046. 19 by 14 mm. Limestone. Unbored. Scene of a simple tree, roughly carved. In Field Museum.

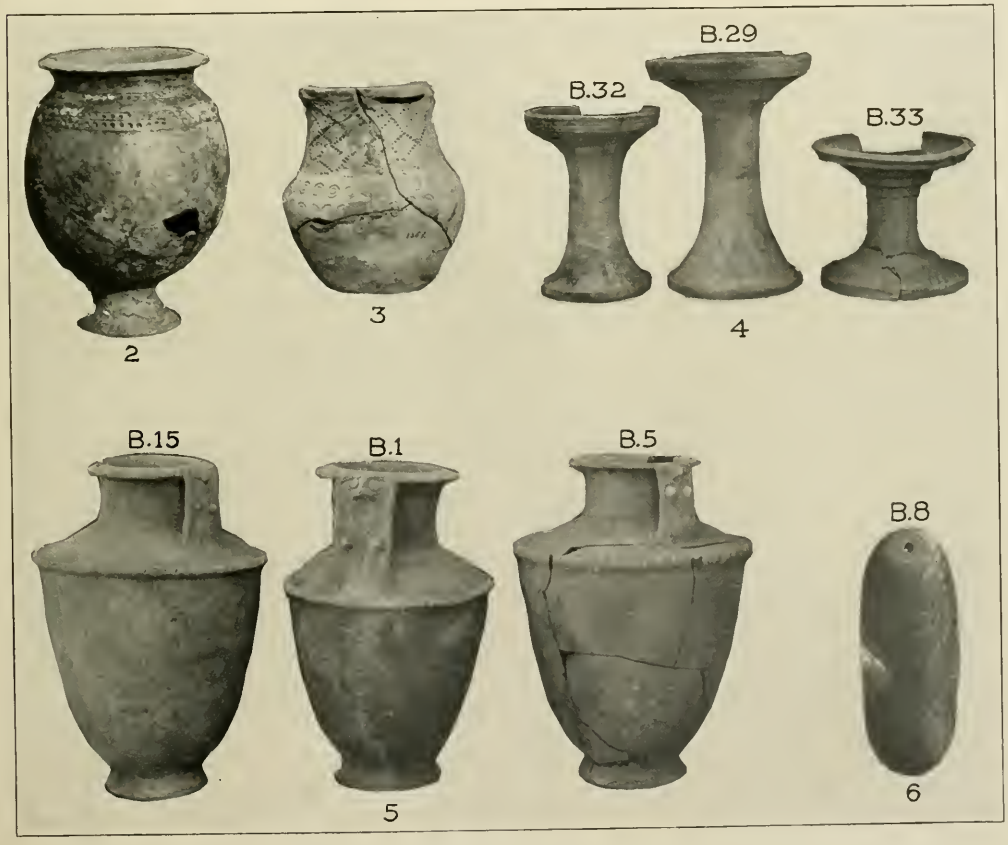
No. 1279. 34 by 18 mm. Shell. Scene of man with feathers (?) in his hair (cf. No. 19), dressed in a short, open kilt, trying to quiet two antelopes who are rearing on their hind legs. Each antelope is being attacked by a lion. In Field Museum.

The seals below come from the "P" site, but belong to the same period as the seals from the "A" cemetery. They are given below under their registration numbers.

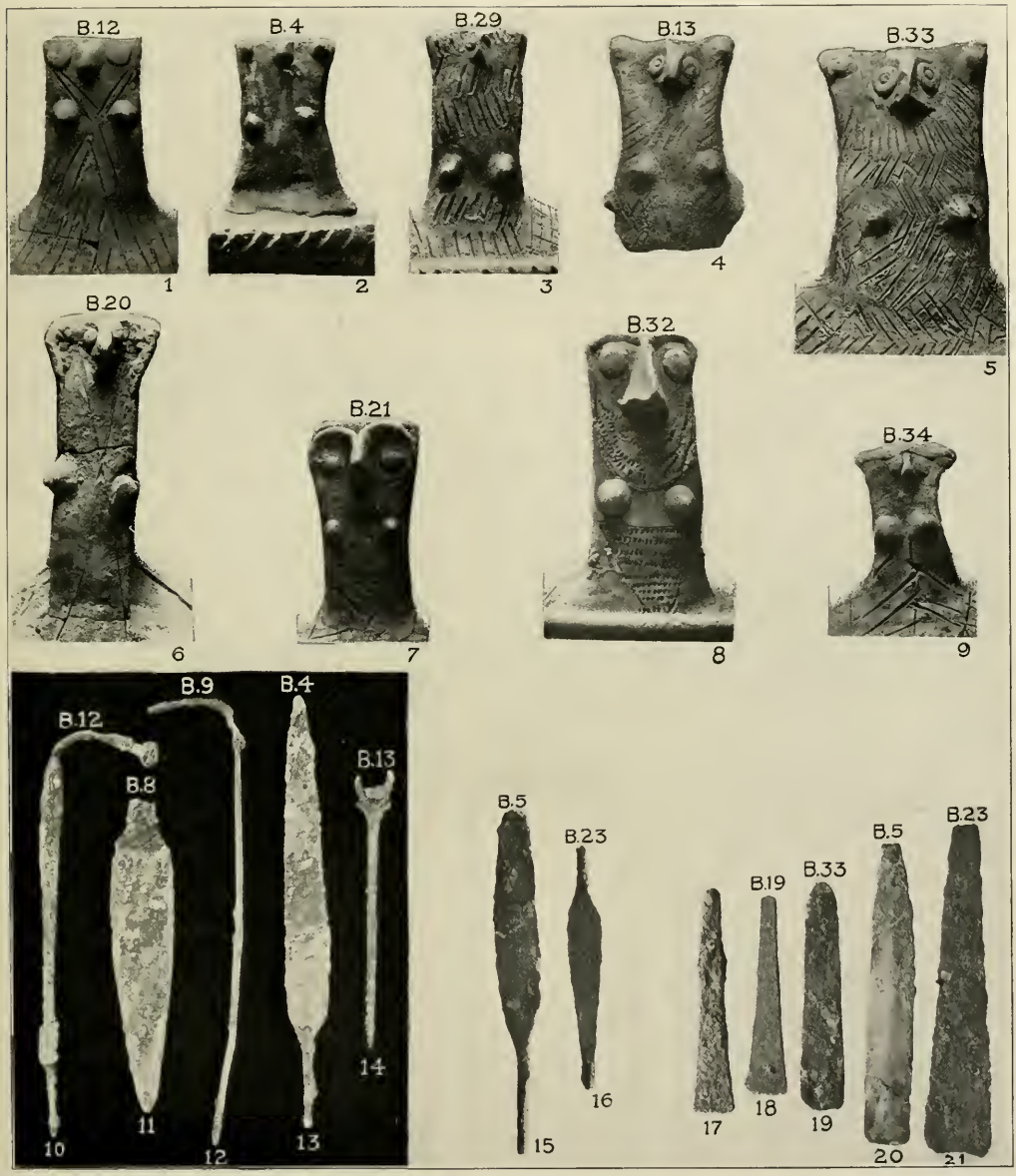
No. 983. 26 by 15 mm. Calcite. Scene very similar to upper register of No. 17, but the tail of the shell-like object terminates in a human head. Other features are indistinct.

No. 1077. 27 by 18 mm. Calcite. Figure of two antelopes standing back to back. The seated figure above them is dressed in a single *kaunakes*. In Field Museum.

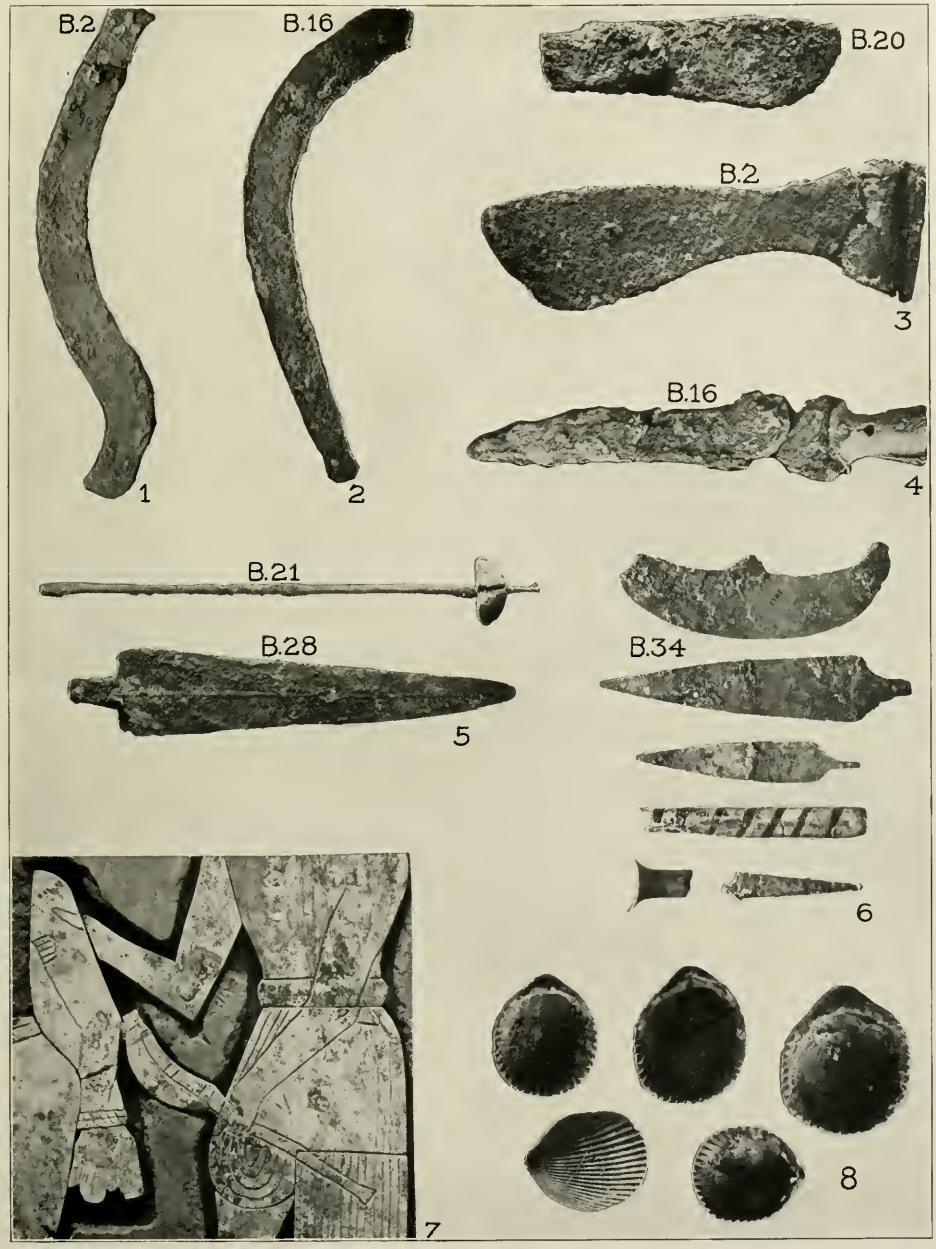
FIG. 1. VIEW OF "A" CEMETERY FROM ZIGGURAT AT INGHARRA (p. 9).



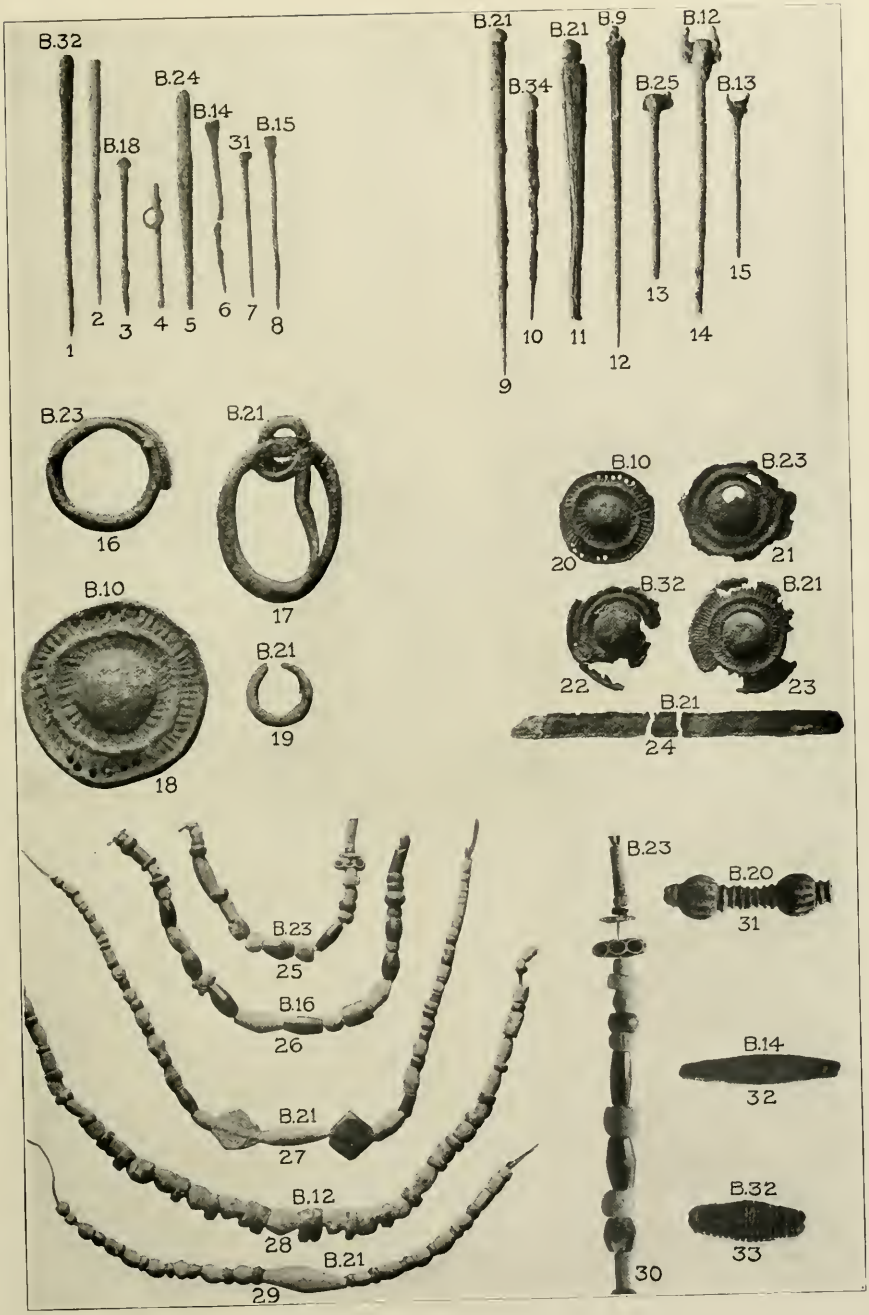
POTTERY (pp. 6, 21, 24, 25, 31).



JAR HANDLES AND COPPER IMPLEMENTS (pp. 22, 40, 42).



COPPER IMPLEMENTS, INLAY, AND PIGMENT SHELLS (pp. 14, 17, 38, 39, 40, 41, 43).



TOILET ARTICLES AND JEWELLERY (pp. 13, 16, 45-48, 51-53)

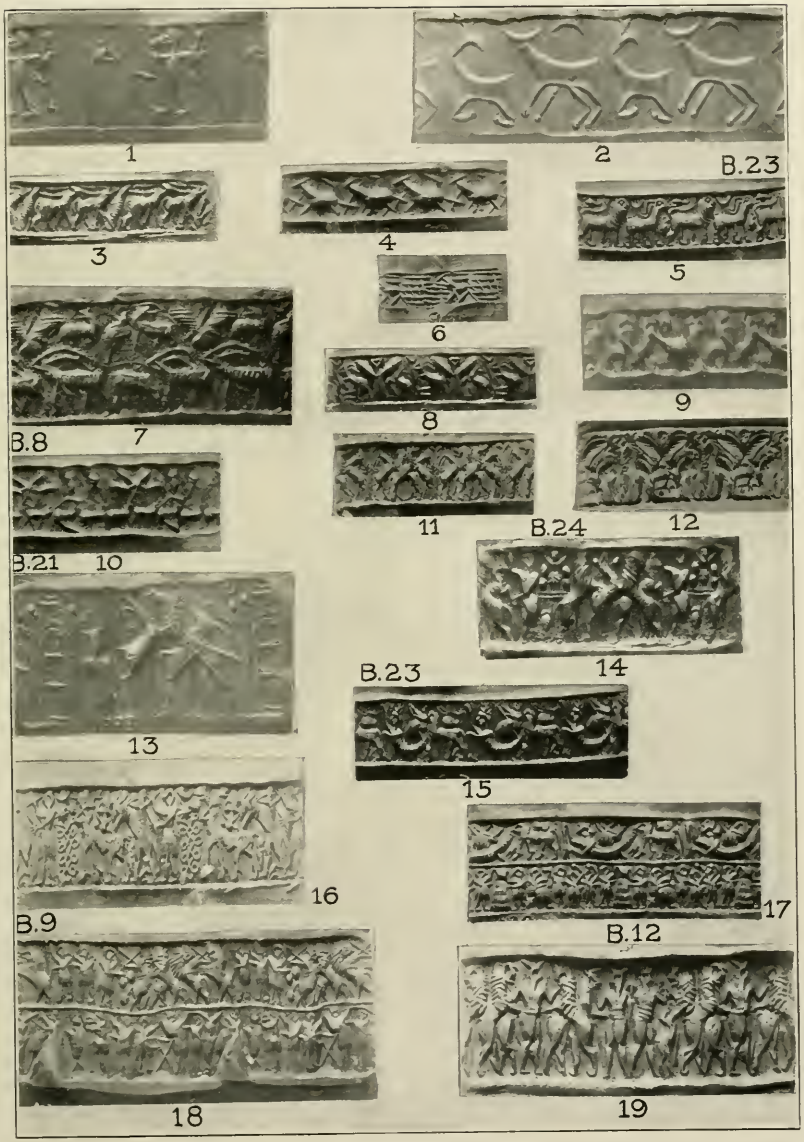
BURIAL 5.

BURIAL 19.

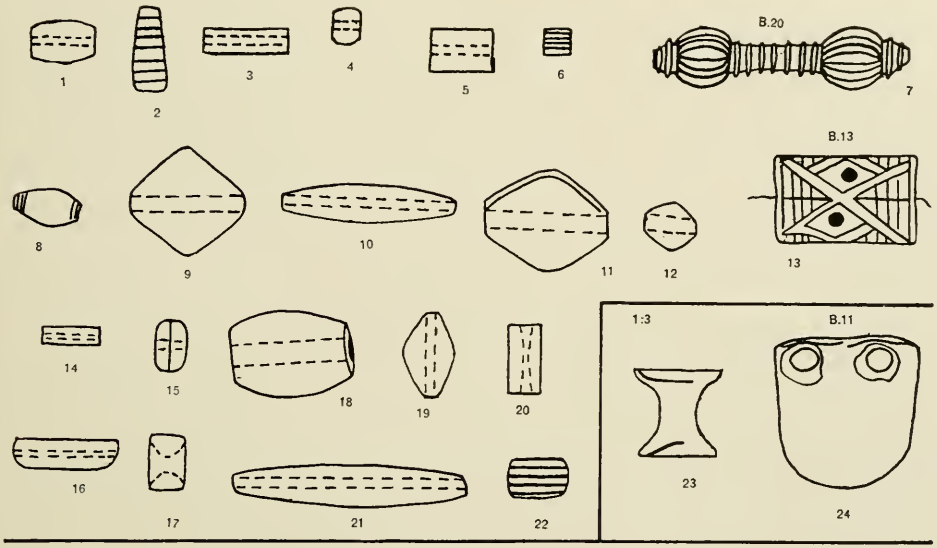
BURIAL 31.

BURIAL 20.

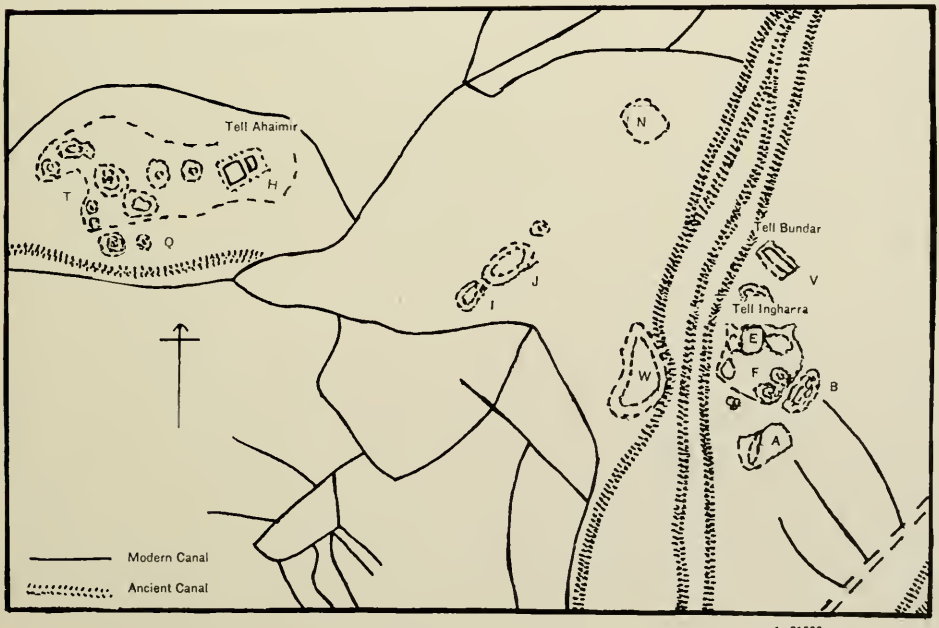
BURIALS (pp. 11, 13, 25, 56).



CYLINDER SEALS (pp. 18, 59-61).

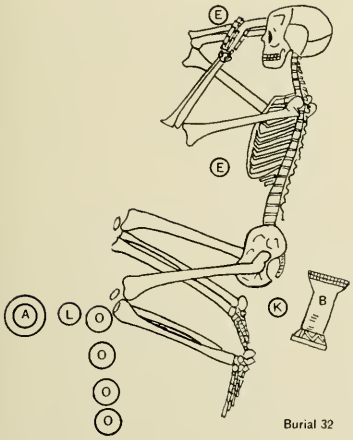


BEADS (pp. 19, 53-57)
Actual size.

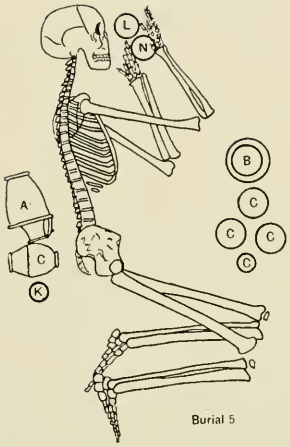


1: 21500

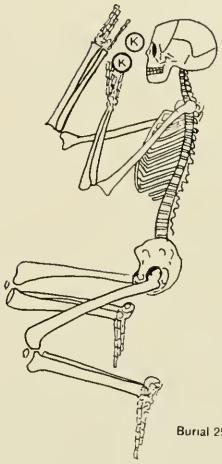
SKETCH PLAN OF KISH (p. 9).



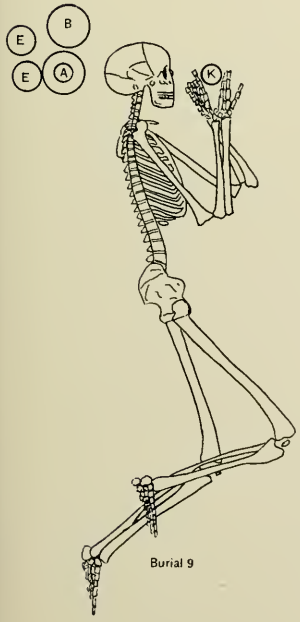
Burial 32



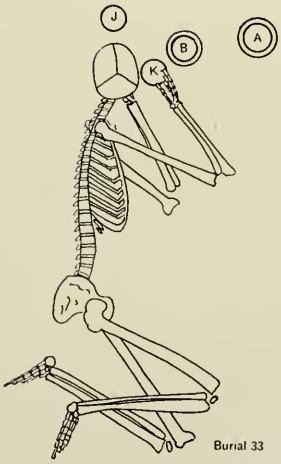
Burial 5



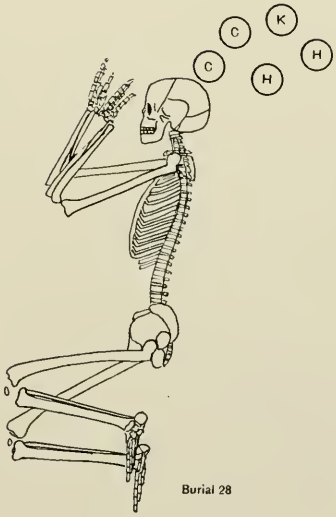
Burial 25



Burial 9

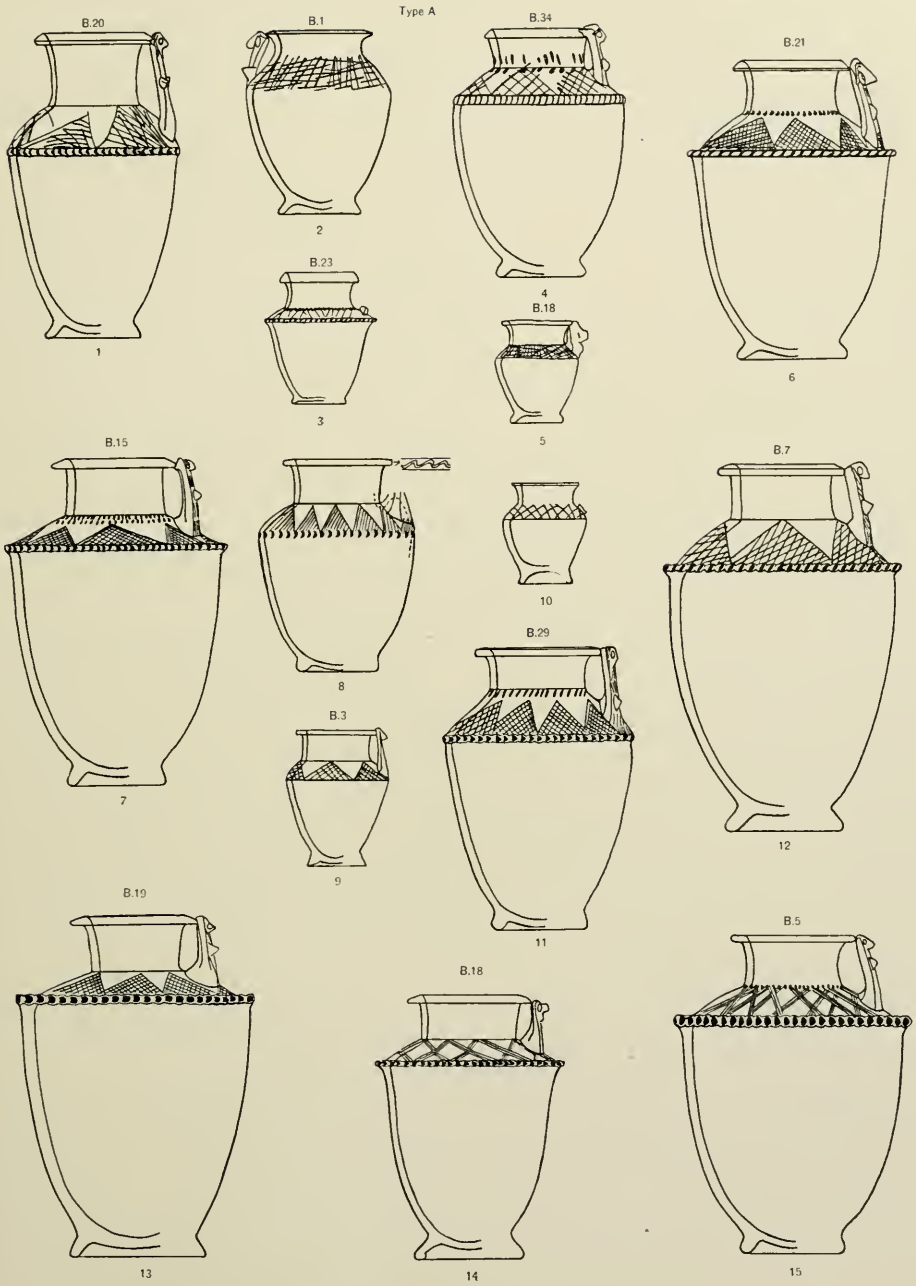


Burial 33

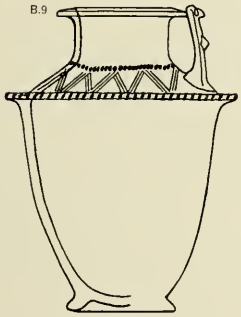


Burial 28

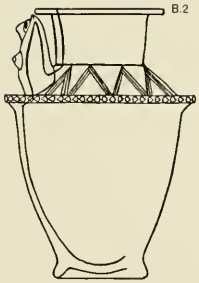
BURIAL GROUPS (p. 13).



HANDLED POTTERY (pp. 21, 24, 27).
Scale 1:12.



16



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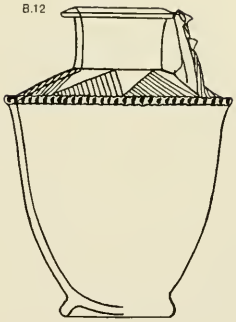
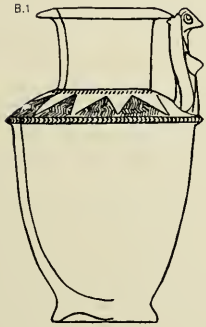


18



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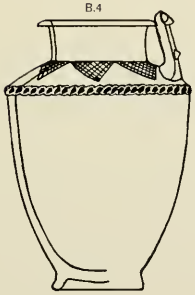
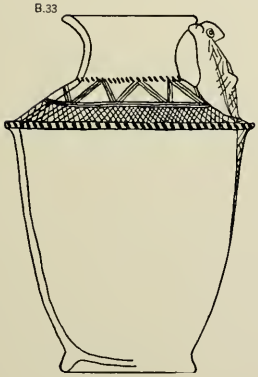


20

21



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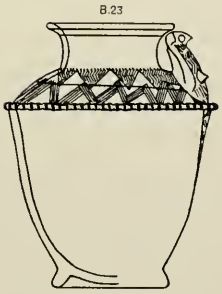

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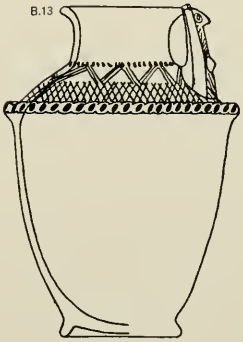
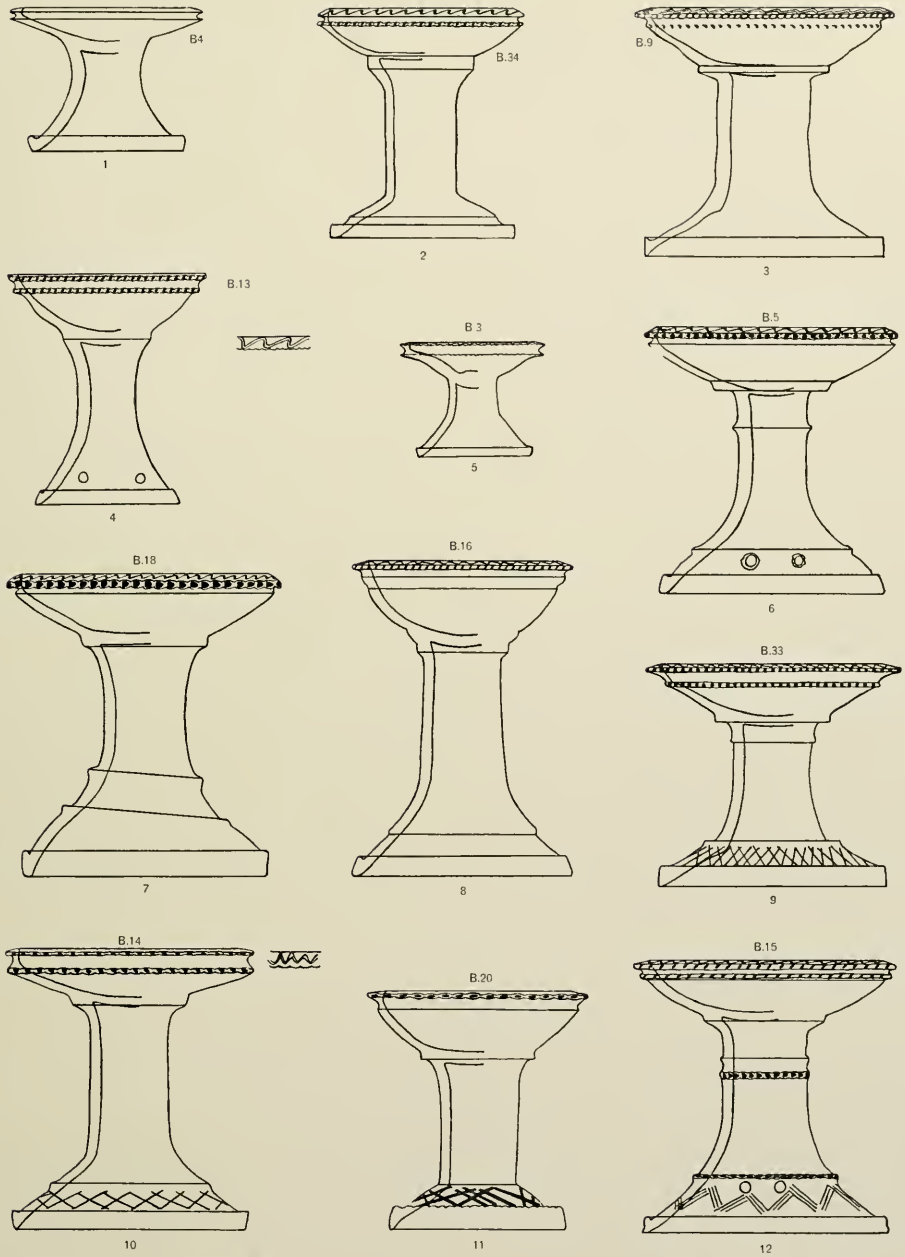
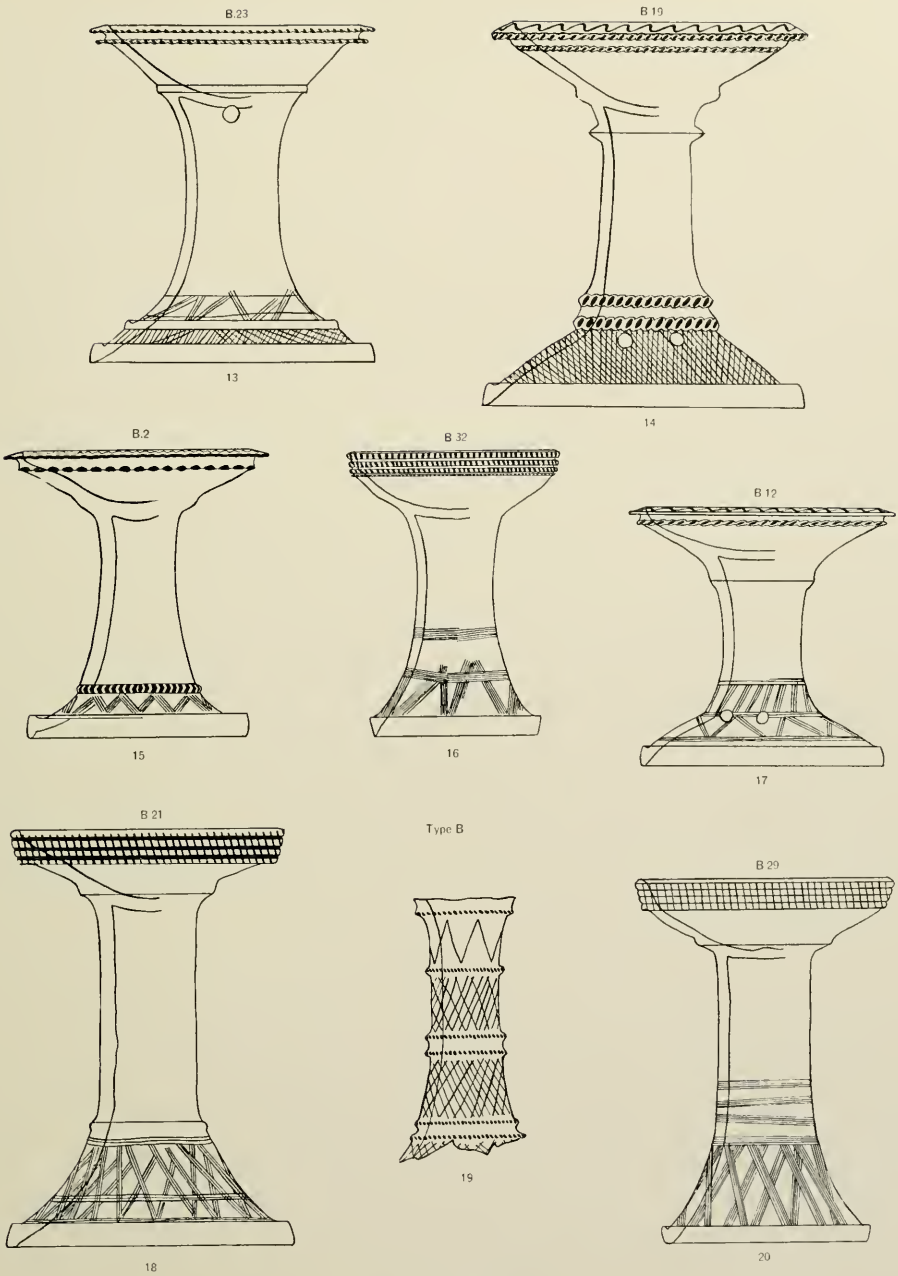


24

POTTERY TYPE A (p. 21).
Scale 1:12.

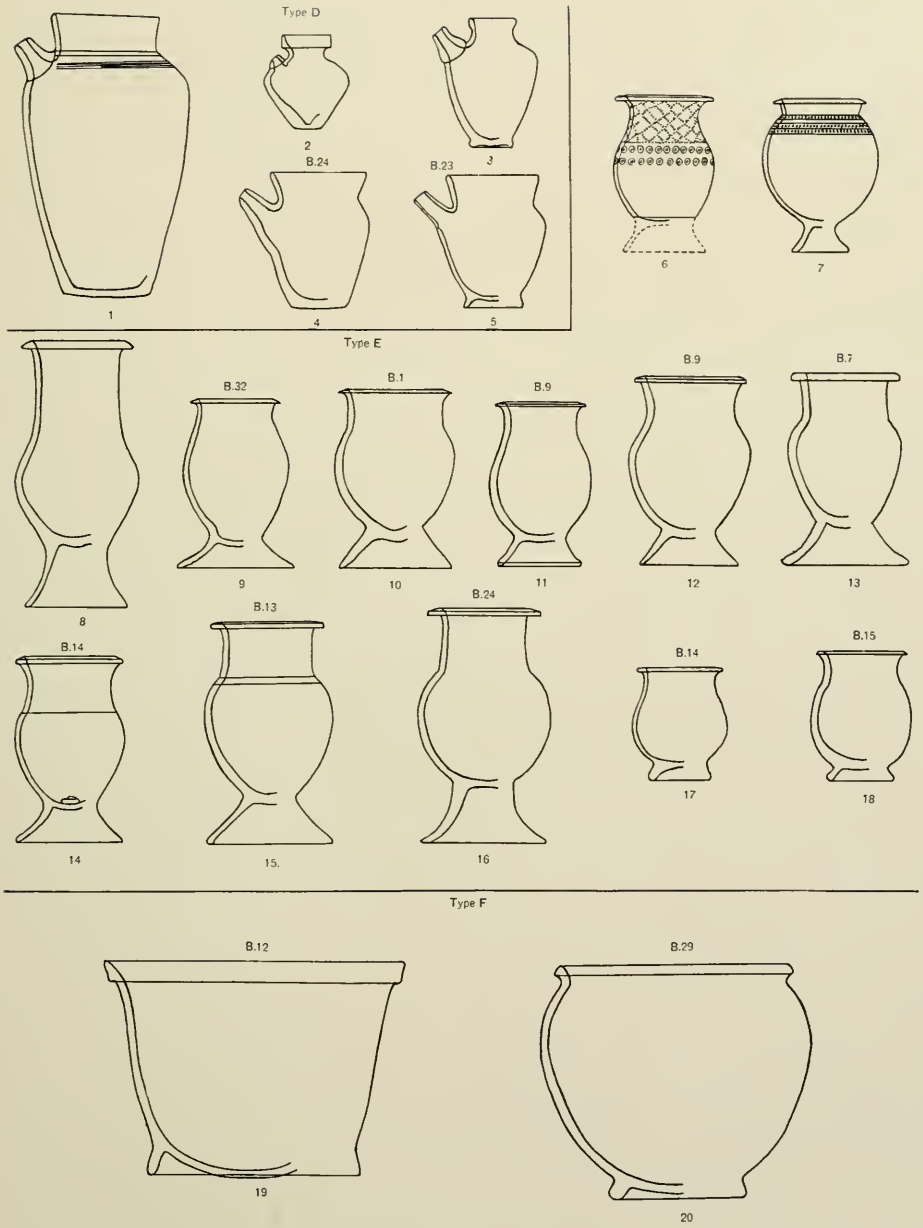


POTTERY TYPE B (pp. 24-27).
Scale 1:12.

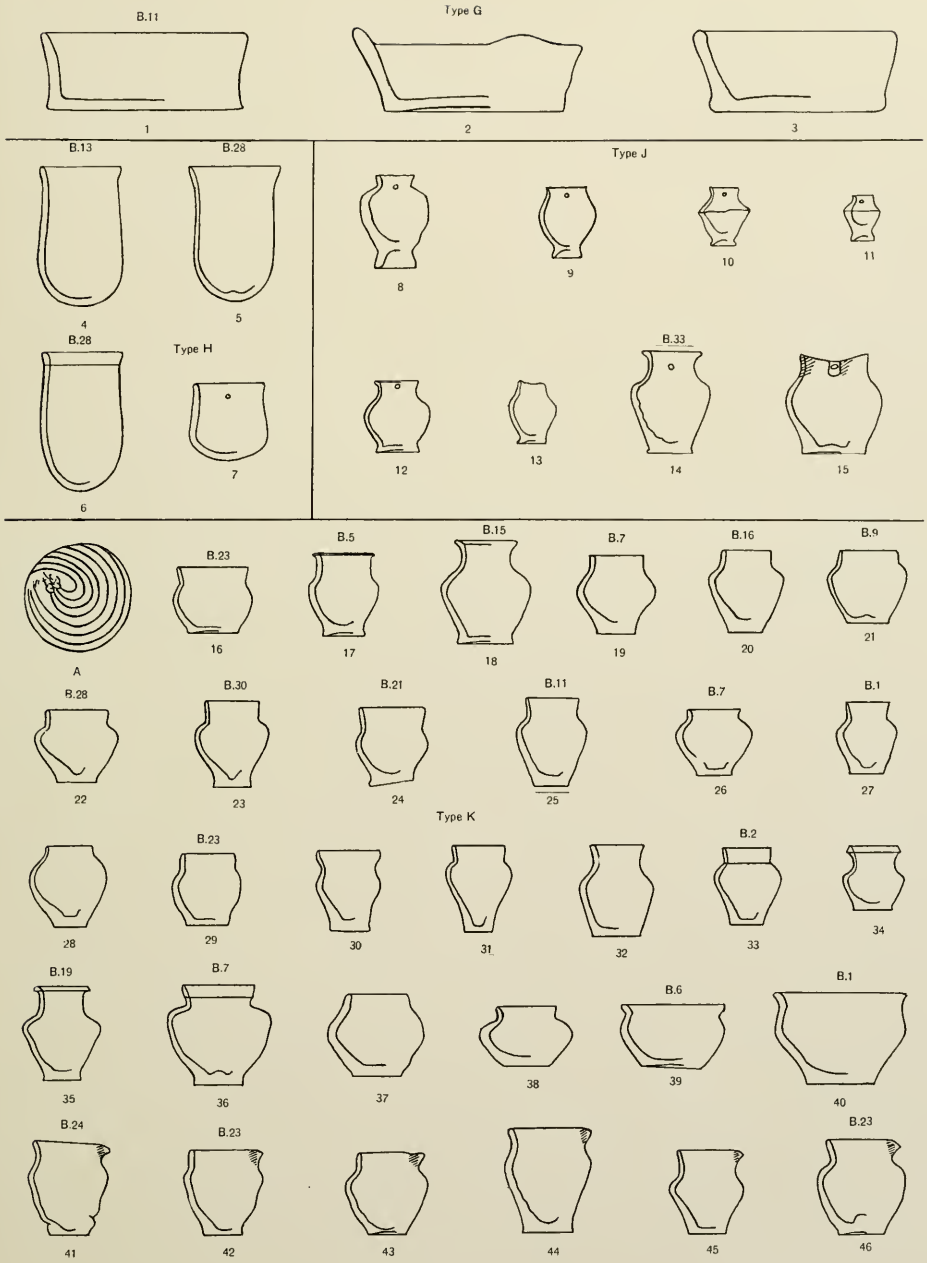


POTTERY TYPE B (p. 24).
Scale 1:12.

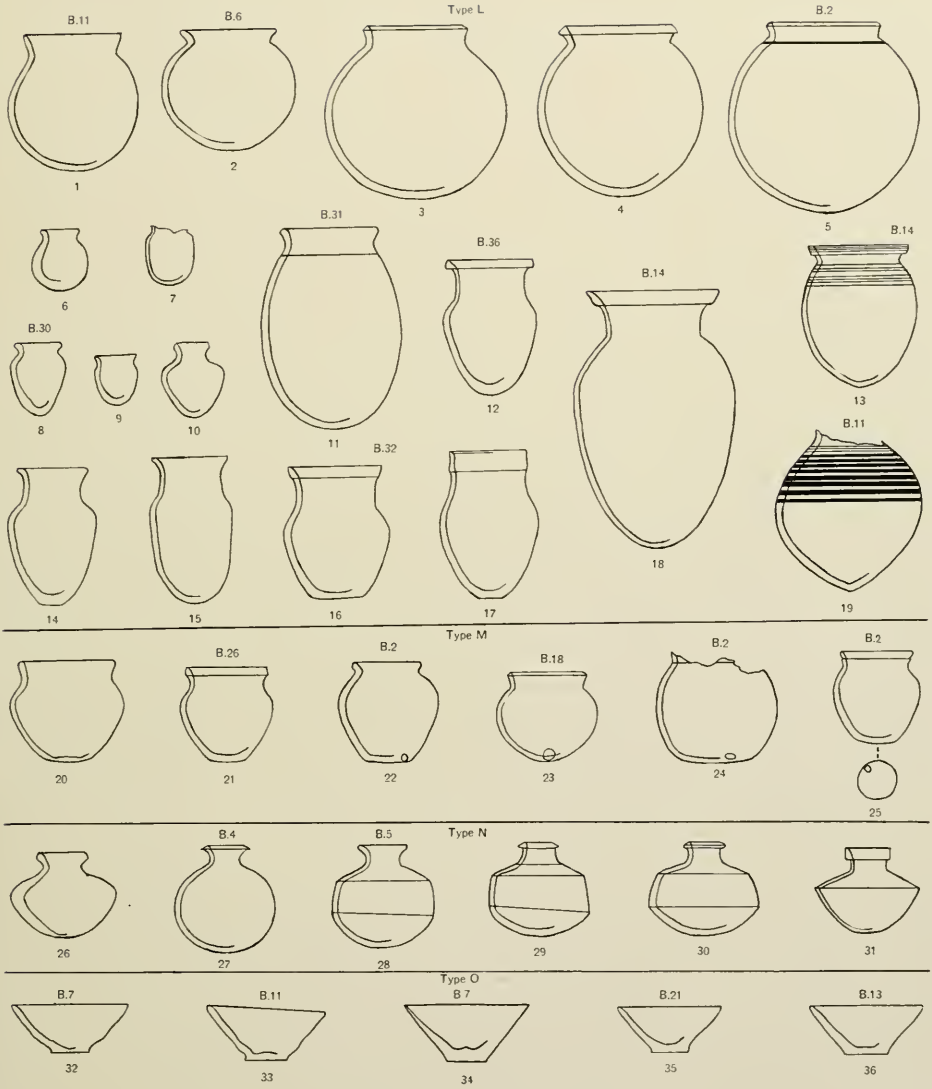
POTTERY TYPE C (p. 28).
Scale 1:12.



POTTERY TYPES D, E, F (pp. 29-32).
Scale 1:12.



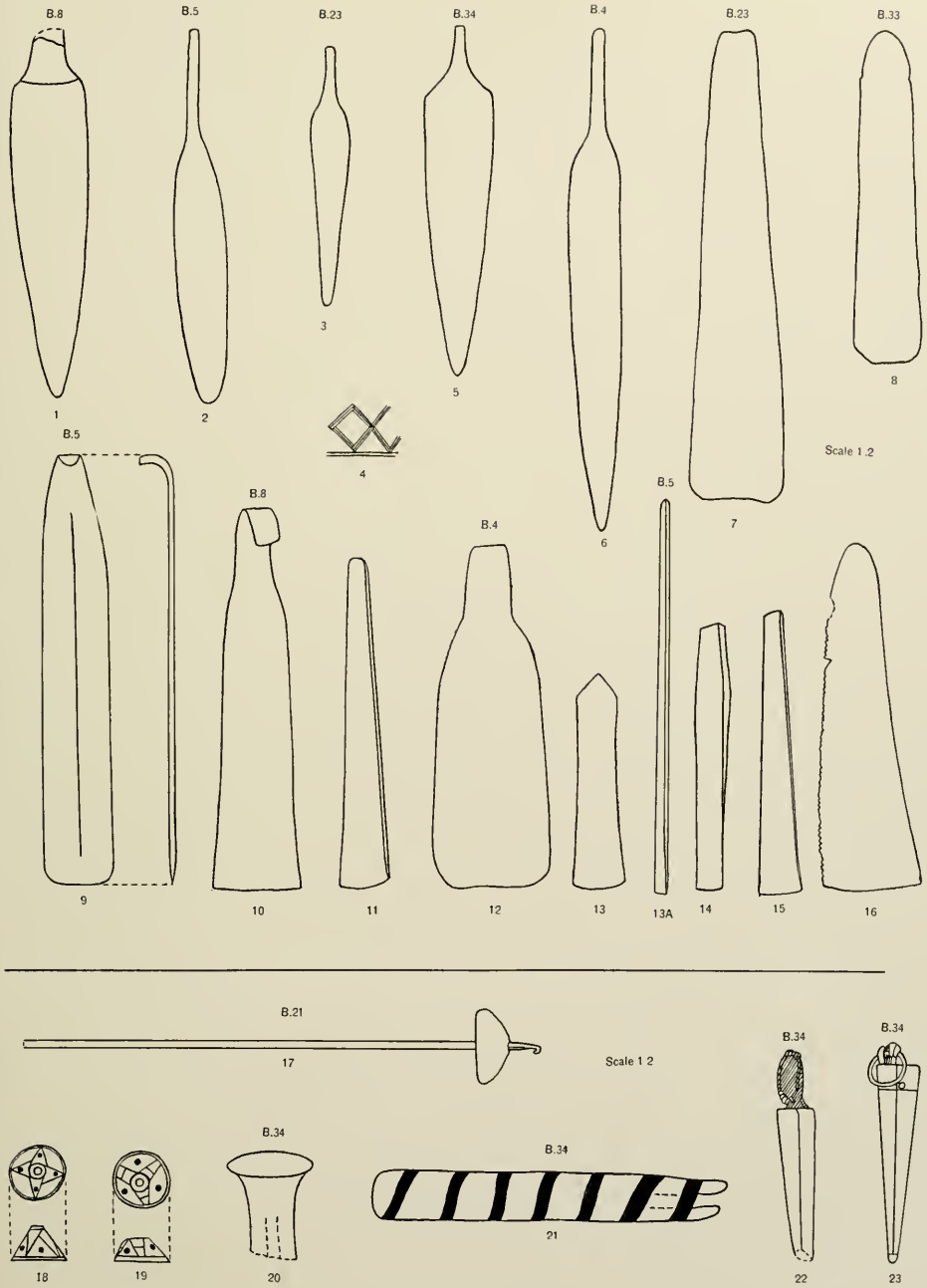
POTTERY TYPES G, H, J, K (pp. 29, 32-34).
Scale 1:12.



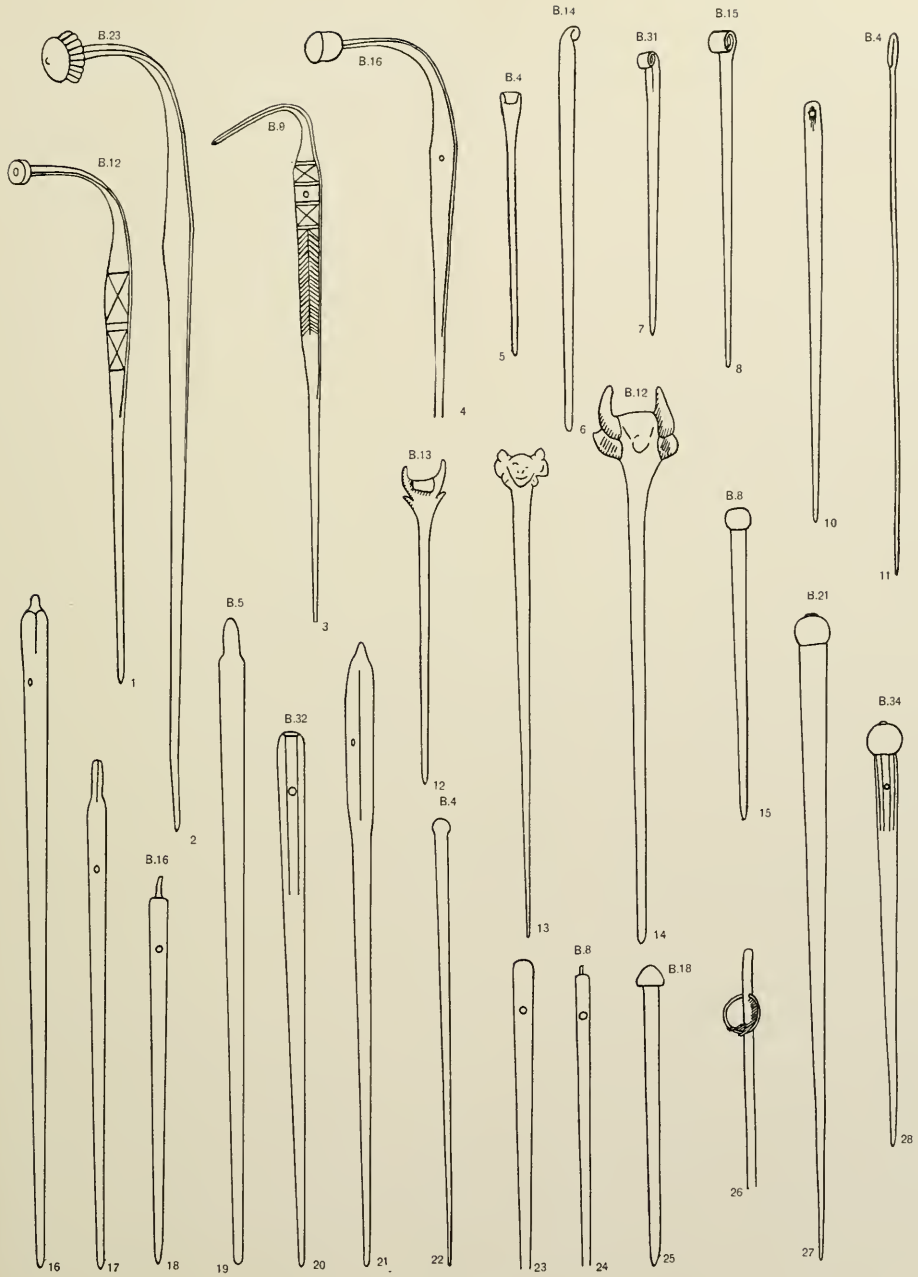
POTTERY TYPES L, M, N, O (pp. 34-36).

Scale 1:12.

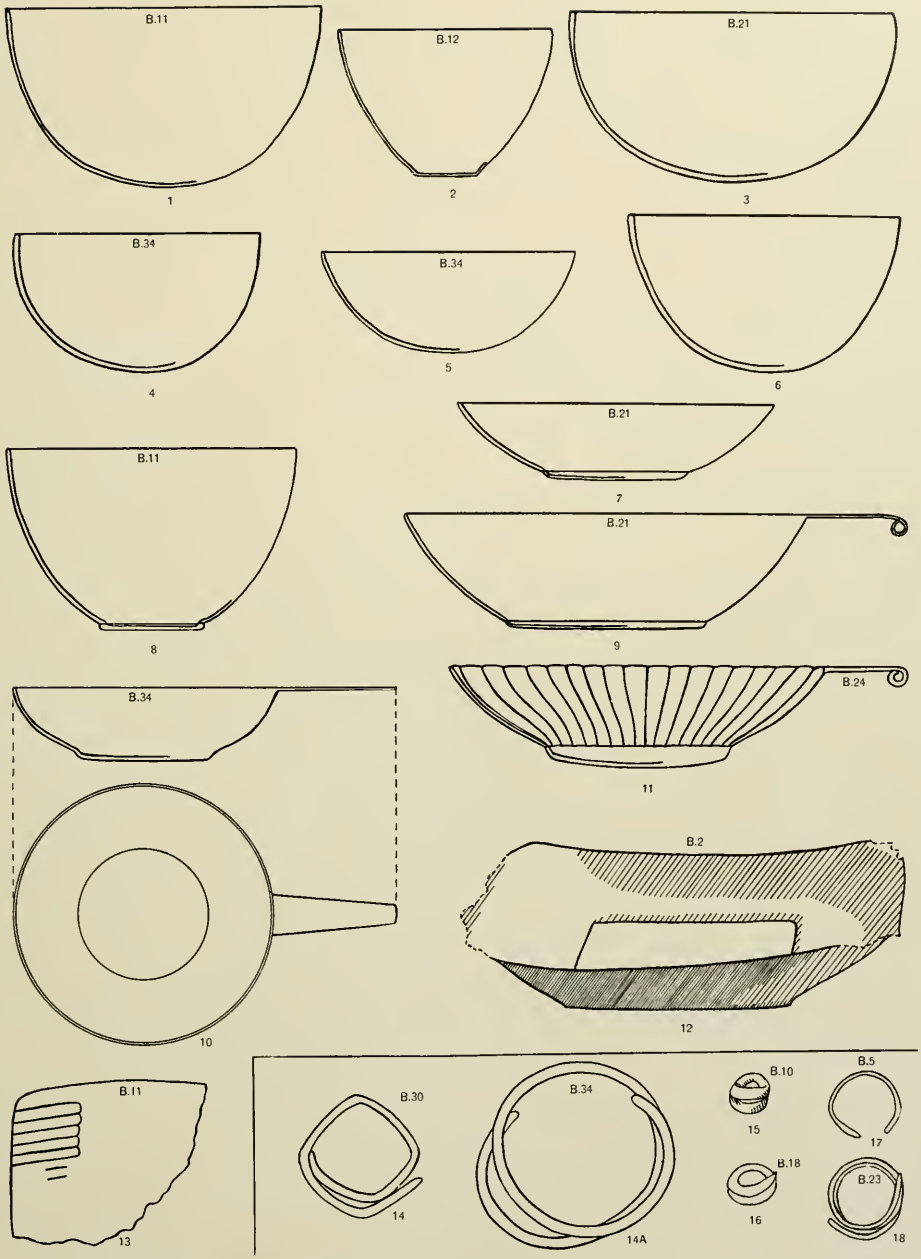
COPPER IMPLEMENTS (pp. 20, 38-40).
Scale 1:4.



COPPER IMPLEMENTS (pp. 38-44).
Scale 1:4.



COPPER HAIR-PINS (pp. 44-48).
Scale 1:4.



COPPER BOWLS (pp. 17, 48-53).
Scale 1:4.