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REPORT ON EXCAVATIONS AT  
JEMDET NASR, IRAQ

BY

ERNEST MACKAY

WITH PREFACE BY STEPHEN LANGDON

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18 Plates

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FIELD MUSEUM—OXFORD UNIVERSITY JOINT EXPEDITION

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BERTHOLD LAUFER

CURATOR OF ANTHROPOLOGY

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CHICAGO

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## PREFACE

This publication by Mr. Mackay contains an accurate account of the archaeology of Jemdet Nasr and forms a companion to my study of the inscriptions which I found with these objects, entitled "Oxford Editions of Cuneiform Texts, Pictographic Inscriptions from Jemdet Nasr," VII (1928). Mr. Mackay catalogued every object which I brought in from that site each night of my return, and this account is exhaustive so far as my own work in the winter of 1925-26 is concerned. However, at the end of the season 1927-28, Mr. Watelin, together with Messrs. Henry Field and Eric Schroeder, again excavated there intensively for two weeks, March 13-28, 1928. Their discoveries modify Mr. Mackay's conclusions considerably, and the salient results of the new discoveries must be noted here, while they should be reserved for scientific treatment in another publication. In an account of the excavations in Babylonia from 1918 to 1926, "Ausgrabungen in Babylonien seit 1918," *Der Alte Orient*, XXVI, I gave an account of my work at Jemdet Nasr, "Ruins of Nasr" (pp. 67-75), with a plan of the large building in which most of the objects were found (Fig. 12). Unfortunately the German edition published the plan of the mound (Fig. 11) erroneously. West should be north, east should be south, north should be east, and south is to be changed to west.

Watelin's excavations in 1928 yielded many painted pots and fragments with beautiful animal designs, a kid sucking at a she-goat's udder, long-antlered deer, aquatic birds, fish, and other complicated designs which compare favorably with the best painted ware of the so-called Susa II type (now regarded by Watelin as earlier than Susa I). Jemdet Nasr pottery, therefore, can hardly be regarded as later than the Susa painted ware (p. 228). The author's remarks on the decadent style of drawing animals (p. 260) would undoubtedly be modified by him, had he been able to study the extensive collection of new material in Field Museum. The best designs, however, show distinct traces of convention and decadence. The double-spouted vase (Plate LXXVI, Fig. 3) has now been found near water level at Kish (see *Journal Royal Asiatic Society*, 1930, Plate X) and may be the *ghara mashtabba* or *tu'amatu* pot of the Sumerians (*Revue d'Assyriologie*, VI, p. 130, Obv. 5). The prevalence of the design of the pig at Jemdet Nasr proves clearly enough that this animal was held in high esteem, in striking contrast to the Accadians, who pronounced the pig unclean, soiler of the streets, unfit for the temple, and the abomination of the gods. This is cultural evidence that no Semitic influence can be found at Jemdet Nasr. The names of the deities found on the pictographic tablets are all well known Sumerian gods, and so is every one of the signs. Against all this evidence it seems to me impossible to argue that the inhabitants of Jemdet Nasr are not Sumerians on the ground that the numerical system used by them, in grain measures only, is decimal. The ordinary numerical system is sexagesimal as in Sumerian, and so also is the system of land measures.

When Jemdet Nasr perished by fire before 3500 B.C., it was already a civilization of great antiquity. This has now been proved by a trench ten feet deep made near the tell by Watelin, in which he did not reach virgin soil. The same culture is found at Kish eight feet above virgin soil, and thirty-five feet below the Sargonic period. In view of these facts and the primitive nature of the inscriptions, a date 4000 B.C. seems indicated for the culture described in this publication. A good many tablets have again been found, notably one, which adds largely to the list of signs, Nos. 193-94 of my "Pictographic Inscriptions," proving that this ancient people had already begun to take an interest in linguistic studies. It is remarkable that this same list recurs in the ancient and more prolific group of inscriptions found at Shuruppak, about five centuries later. Shuruppak is of undoubted Sumerian culture, and nothing could prove more decisively the homogeneity and continuity of culture of the prehistoric civilization of Sumer in the north at Kish and Jemdet Nasr, in the south at Shuruppak and the great Sumerian cities of that region. The Field Museum-Oxford University Expedition has revealed the origins of Sumerian civilization in an area where almost nothing was known, when excavations began at Kish in 1922. Undoubtedly the wide area conceded to the expedition by the Department of Antiquities of Iraq contains secrets even more important than those which have been revealed. In this area are the colossal ruins of Barghuthiat southwest of Jemdet Nasr, a place of undoubted antiquity, although only Neo-Babylonian objects appear on the surface and Abu Sudaira, three miles east of the central ruins of Kish, where trial trenches have been begun at the date of this writing.

As director of the expedition I am constrained by the gratitude of all archaeologists to express their and my own appreciation of the support received from Field Museum and from those who have contributed on behalf of Oxford, especially Dr. Weld, Dr. Robert Mond, Sir Charles Marston, and General Dawes, the American ambassador.

STEPHEN LANGDON,

Professor of Assyriology.

Jesus College, Oxford, December 20, 1930.

# REPORT ON EXCAVATIONS AT JEMDET NASR, IRAQ

## INTRODUCTION

In March, 1925, a Hillah dealer brought to our camp at Kish a small number of tablets inscribed with archaic characters and a few pieces of painted pottery. On my inquiry for the provenance of these objects I was told that they came from a site named Jemdet Nasr, about fifteen miles northeast of Kish. Professor Langdon has now identified the site as the ancient Kid-Nun(-ki). Realizing the character and extreme age of these objects, I immediately sent one of our most trusted and reliable native workmen to make further investigations on the site, with the result that two days later he brought us more painted pottery and tablets. The authenticity of the site being thus established, Father Burrows, my wife, and I went to the place the following day (March 26) and found that, though a little illicit digging had been done by the Arabs, the site was so large that it would be profitable to excavate it.

During the season 1925-26, Professor Langdon undertook the responsibility of clearing the mound unaided, and in a little time our storeroom at Kish contained a large quantity of painted pottery and other objects. The professor made a daily trip by motor-car to the site and superintended the whole of the work there, four gangs being employed at first and eight later on.

Some considerable preparation had to be made in order to reach Jemdet Nasr by car, owing to the number of canals that had to be crossed. We had to make at least six bridges and to keep these in repair while the work was going on. The road also had to be leveled in places, though traveling was good when the limits of the cultivation round Kish had been passed. A noticeable feature along the road was the tracts of potsherds that were passed at intervals. These tracts were not associated with the remains of villages or towns; the sherds, all of which appear to be of late date and are accompanied by a little blue glaze which appears to be Parthian, were lying on the surface of the desert. It is quite possible that these tracts are ancient camping grounds either of caravans or of Beduins. The latter probably visited these sites in ancient times, as they do now, on their annual journeys during the rainy season to the south and back in search of pasturage for their flocks.

At the commencement of the work, some difficulty was experienced in providing water for the men, and Professor Langdon had to take out a sufficient supply each day for cooking and drinking as well as a reserve for emergencies. Later on in the season a good supply of rain water was available, relieving us of some anxiety as to this branch of the commissariat.

The series of three mounds, locally named Jemdet Nasr, lies about fifteen miles northeast of the temple-tower of Tell Ahaimir and just north of the more

extensive mounds of Tell Barghutait and west of Tell Reshada four miles. Both mounds are of late date.

The chain of mounds, which is orientated E.NE.-W.SW. (Plate LXXV, Fig. 1), is about 850 m long and 180 m wide. The highest portion of the central mound is exactly 3.40 m above the level of the surrounding plain. This mound, which is the most important, measures 360 x 180 m, roughly. It is irregular in shape with depressions and ravines cut by the annual rainfall. It was here that Langdon made his principal discoveries. The mound to the W.SW., measuring 105 x 70 m, is higher. It is separated by a distance of 28 m from the main mound. Its summit is occupied by the remains of a small building of baked bricks measuring 31 x 31 x 8 cm, which is of neo-Babylonian date. There is also a well there of the same date, lined with burnt bricks.

To the E.NE. of the central mound and separated from it by a distance of 280 m, there is another small mound, 90 m square. This mound stood about 6 m above the plain level and was covered with broken pieces of burnt bricks, which were 34 x 34 x 6.5 cm in size originally. These bricks are also presumably of neo-Babylonian date.

Apart from these later remains in the outer mounds, the site possesses an exceptional advantage because it is of one period only, and that an exceedingly early one, for the pottery was painted and some of the shapes were very much of the same types as were found at Musyan in Elam. In addition, the tablets found with the pottery are inscribed with characters just emerging from the pictographic stage (Plate LXXVI, Fig. 1).

The character of the building unearthed by Professor Langdon, of which a plan prepared by himself will be published shortly, is at present open to question. The walls, which were in a very poor state of preservation owing to damp and the attacks of salt, were built of mud brick and on this account were very difficult to clear. Some, indeed, could not be satisfactorily traced. It is an open question whether there is here a temple or the site of a village. I am personally inclined to the view that it is the remains of a small temple surrounded by priests' quarters. Great attention was paid to the proper alignment of the better preserved of the walls; they were very thick and the character of the masonry good—features which would be absent in all but very important buildings in a town site.

This building, in common with most large buildings of early date in Sumer, had been burnt. Most of the walls and many of the objects found within them showed traces of fire. This was to a certain extent a blessing in disguise, for many of the tablets were preserved by this means alone. But, unfortunately, the painted designs on the pottery were in many cases spoiled by fire.

This conflagration was probably caused by an invader who drove out the inhabitants and after sacking the place set fire to it, in all probability to prevent reoccupation. The roofing was of wood covered with reed matting, with a layer of clay or earth on the top. Impressions of reed matting were also found on the lower surface of some of the kiln-burnt bricks at Jemdet Nasr. A roof of this type would fall inside the rooms and smoulder, it may be, for days, being partially



damped by the clay covering which fell with it. This would account for the lower parts of the walls showing more traces of burning than the upper courses.

The matting used in the roof was coarsely made of reed-stems laid together in rows and united by cords at intervals. Some of the burnt bricks were clearly laid to dry on matting made of split reeds, very similar to that made at the present day in Iraq. It is possible that both burnt and unburnt bricks were dried on matting, but owing to the difficulty of extracting an unburnt brick from the walls complete, it is impossible to test the point.

In our present state of knowledge, it is impossible to date the site and objects from Jemdet Nasr with any great degree of accuracy. Provisionally, the date may be placed round about 3500 B.C. for the following reasons:

1. The tablets are inscribed in extremely archaic characters, which more nearly approach pictographs than cuneiform writing. They are, in fact, in the transition stage between the two, with a bias toward their origin. The Jemdet Nasr tablets certainly belong to an earlier period than the tablets found by de Sarsec at Lagash, which have been approximately dated at about 3000 B.C. The clay tablet found in the Sumerian palace at Kish in the season 1924-25 is apparently of the same date as the Lagash tablets. From its position it belongs to the same period as the numerous graves found lying in and above the palace, which independently and by comparison with objects discovered by Andrae at Assur and Woolley at Ur are dated at about 3100 B.C. As far as we can see at present, the Jemdet Nasr tablets must therefore be assigned to a period not later than 3500 B.C. Indeed, they may be considerably older; for no trace of the painted pottery with which these tablets were associated was found in any of the rooms of the great Sumerian palace, which lay beneath the "A" graves at Kish and which we had to date provisionally at 3500 B.C.

My successor at Kish, M. Watelin, has now dug to a low level in the mound of Ingharra, and painted pottery and clay tablets similar to those unearthed at Jemdet Nasr were found at a very considerable depth below the pre-Sargonic level of the "A" burials. The levels certainly suggest that a considerable interval elapsed between the two occupations. When the date of these clay tablets is definitely established, we shall perhaps be able to fix the period of the stone tablet that was found in the "A" mound, although it obviously belongs to an earlier period (No. 2 of this volume, Plate XXXVI, Figs. 7-8).

2. Some of the painted pottery of Jemdet Nasr is very similar to the painted pottery found at Musyan, both in the polychrome nature of its decoration and in form. Many examples from the two places are practically identical and appear to have been made by people of the same race. The pottery found at Musyan by MM. Gautier and Lampre in 1903 came from the lowest levels, and is akin both in style of decoration and in shape to some of the painted pottery found by de Morgan at Susa, and classified by him as the second Susian period. There is, however, some little difference between the pottery found at Susa and Musyan; it is with the latter ware that the pottery from Jemdet Nasr is more closely comparable, though it is possibly slightly later. No serious attempt has yet been

made—perhaps wisely—to date the Musyan ware, but most authorities are agreed that it belongs to a very early period, both from the position it occupied in that mound and by the fact that it was accompanied by *racloirs* and obsidian knives.

The chief reason for assigning a somewhat later date to the Jemdet Nasr pottery is that its decoration is somewhat inferior both in design and technique to that of the pottery of Musyan. For instance, animal figures are rare on the Jemdet Nasr ware and when portrayed are frequently unrecognizable, whereas on the later Susian pottery and at Musyan the animal devices are well drawn and clearly recognizable and occupy an important position in the decoration.

Unfortunately, the wares of periods I and II at Susa have not yet been satisfactorily related as regards date, although much of the material belonging to the second period was found beneath a stratum of the date of Naram-Sin (*Mémoires de la Délégation en Perse*, XIII, p. 23). The date of the latter ruler is about 2732 B.C., but it is certain that the painted ware of Susa II is very much older. The painting of pottery seems to have been discontinued in Mesopotamia well before 3100 B.C.; no painted wares have been found in either the Al 'Ubaid cemetery II or the "A" cemetery at Kish. We found in the Ingharra mound one example of a painted "granny" jar, but the designs and technique of the painting do not in the least resemble the painted wares of Al 'Ubaid I or Jemdet Nasr. This particular jar, which is not yet published, may, however, be a survival from the earlier painted wares. The painting and design on this handled jar do not resemble those on the painted pottery of Jemdet Nasr either in the kind of paint used or in color. The design, which was a naturalistic one, was painted with a friable color which rubbed off easily, for which reason great care was needed in extracting the vessel from the soil.

## I. POTTERY

In reading this brief account of the pottery from Jemdet Nasr the reader should realize that it is probably the earliest pottery that has been found in Mesopotamia up to the date of writing, omitting the pottery found during the seasons 1926-28 in the Ingharra mound at Kish (for no particulars have as yet come to hand concerning it) and excluding perhaps the pottery found at Ur (Al 'Ubaid, cemetery I), which appears to be of an even earlier type. In shape and style of decoration it is not comparable with any of the later wares of the country, but seems to stand in a class of its own.

In most cases the designs on the complete jars from Jemdet Nasr were too indistinct to be made out owing to scaling caused by damp and salt. Unusual designs were copied on tracing paper and are reproduced in Plates LXVIII-LXIX. Most of the designs were taken from fragments of pottery rather than from complete jars. Interesting as are some of the designs, the forms of the pottery are perhaps more important, and for this reason they have been given greater prominence.

Practically all the pottery is wheel-made, hand-made specimens being rare. Many of the coarser vessels, such as cups and dishes with flat bases, have a series of focused grooves on the base, made by cutting through the clay while it was upon the wheel with a cord or a piece of twisted palm leaf.

Much of the pottery is warped through overfiring, and much is indifferently baked, which suggests that the potter was unable to control the heat of his furnace. This would account for so many imperfect pieces of pottery having been put into use, whereas after a series of successful burnings the potter would have thrown away the defective pieces as unsalable.

The hand-made ware is extremely rough, as will be seen from the two dishes shown in Plates LXXVI, Fig. 7, and LXIV, Fig. 5. Figs. 22-23 in Plate LXVII were also roughly made by hand. It is a curious fact that hand-made utensils should have been so rare at that period, whereas they were comparatively common in the "A" cemetery at Kish; though, it is true, the hand-made ware in the latter place was confined to the smaller jars and dishes. Since the wheel-made pottery of Jemdet Nasr is superior to that from the "A" cemetery at Kish, one would naturally expect the hand-made pottery also to be of finer workmanship, but the reverse appears to be the case.

None of the pottery at Jemdet Nasr was particularly thin. It was in fact substantial ware, some thickness being necessitated by the poor baking. It in no wise resembles the thin ware of Susa I, and is more akin in this respect to the pottery found by Woolley in the earlier cemetery at Al 'Ubaid.

The jars with very angular shoulders were probably made in two pieces. Proof that this was done at least occasionally is afforded by the second jar illustrated in Plate LXXVI, Fig. 4. The neck and rim of this pot, which is a

painted one, were made separately from the body and the two portions failed to adhere properly when joined. This method of making certain types of jars in two pieces was also practised by the people who made the pottery of the "A" cemetery at Kish. Both there and at Jemdet Nasr the joining was so skilfully done that it is most difficult to detect. Probably the jar was placed on the wheel again for a final trimming-up after the join was made. The same method is practised in Sind (India) at the present day.

As in the pottery of the "A" cemetery, the upper portion was much better finished than the lower portion, except in the case of the jars painted in polychrome. In fact, in some of the coarser ware the bases are extremely rough and untidy. In some of the very attenuated spouted jars, the bases have even been pared with a knife to make them more presentable (Plates LXIII, Figs. 20 and 24; LXV, Fig. 12). The same is seen in the early pottery from Al 'Ubaid and the lower portions of some of the pottery jars of Mohenjo-Daro, Sind, India, also are pared.

The broad flat bases of much of the painted pottery are an interesting feature, especially when we take into account the fact that in most of this decorated ware the base was as carefully made and coated with a slip as was the remainder of the vessel. It appears from this fact that these jars were not intended to be placed on rough ground; they were most likely kept on shelves or special stands, if indeed, they were not hung up, as their perforated lugs seem to suggest. In the latter case their carefully finished bases would be seen from below.

Ring-bases were rare and found only on the vessels illustrated in Plates LXIV, Fig. 5 (hand-made), LXV, Fig. 38, and LXVI, Figs. 31 and 39. The base of the jar shown in Plate LXVI, Fig. 31, however, should perhaps not be regarded as a ring-base, for it is more cup-like in form. Possibly this form of base was just being introduced at Jemdet Nasr. At Al 'Ubaid ring-based vessels were fairly common in both cemetery I and cemetery II; they were very common indeed in the graves of the "A" cemetery at Kish. Farther afield, ring-based pottery was a common feature of grave equipment at Nal in southern Baluchistan, and the ring-base is known, though it is very rare, in both the painted and unpainted wares of the chalcolithic sites of Mohenjo-Daro and Harappa in India. It occurs somewhat rarely in the pottery of the first period of Susa, but is very common in the pottery of the second period, and also at Musyan.

Ring-bases must be regarded as a considerable advance in the potter's craft; they prevented the soiling of the bottoms of the vessels fitted with them. This type of base could only have been really useful on hard ground or floors; for standing on loose earth or sand, jars with round or pointed bases would have been more convenient. Doubtless the idea of a ring-base was derived from a ring of pottery upon which round-based jars were set in case of need, and it probably was not long before some enterprising potter attached such a stand permanently to the base of some of his vessels. Very few of the Jemdet Nasr jars have rounded bases, but it will be noticed that in many cases the base is so narrow

that a support of some kind is inferred, though none have been found, except the unusual type of jar stand seen in Plate LXVII, Figs. 28-33. Ring stands of this description are as common at Mohenjo-Daro as ring-based pottery is rare.

An unusual base is shown in Plate LXIII, Fig. 22. It is flat beneath, but its edges project as a beading around the bottom of the jar. The cup-shaped base of the jar in Plate LXVI, Fig. 31, is curiously like the bases of a type of pottery found in the "A" cemetery (Plate XIV, Figs. 8-16, of this volume), though the upper portion of the jar is entirely dissimilar. The third jar in Plate LXXVI, Fig. 4, has a square base—a surprising feature—made by pressing out the corners from the inside of the jar. Two vessels with similar square bases were found in the large Sumerian building "P" at Kish, as yet unpublished.

Unfortunately, much of the pottery found at Jemdet Nasr was very much weathered owing to the dampness of the site and the prevalence of salt. Very few whole jars were taken from the chambers of the building; those that seemed perfect on excavation fell to pieces on removal. As the pottery was saturated with moisture, the colored designs appeared at first to be extraordinarily brilliant, but this brilliancy disappeared when the pottery dried. It will, however, be restored in a measure when the jars are repaired and properly treated.

A number of jars were also much damaged by fire, which so blackened them that the designs upon them could no longer be traced.

There was only one example of a pot-mark on the whole of the pottery of Jemdet Nasr. It is shown in Plate LXIX, Fig. 1, but it is somewhat indefinite. The first sign apparently represents an uncompleted human figure; the second and third signs are mentioned farther on in the section on the decoration of the pottery.

The fine theriomorphic jar in Plate LXXVI, Fig. 2, was found by Professor Langdon late in the season. It is rather roughly made in the form of a pig, and is described fully below in this chapter.

Notched ribbing or beading only occurs on the larger jars of the four-lugged type. Unfortunately, Professor Langdon did not find a single specimen of this type sufficiently well preserved to be drawn. That it was a very effective mode of decoration is shown by the larger fragment of pottery in Plate LXXVI, Fig. 10, which is also illustrated in black and white in Plate LXIV, Fig. 3. The smaller fragment is clearly a portion of a jar in which a wavy line of beading ran around the shoulder.

The two examples of a ribbed decoration shown in Plate LXXVI, Fig. 5, are unfortunately but small fragments of a type of jar of which up to the present no complete specimen has been found. The lower piece is of dark-gray clay, and just above the ribbing is the base of what appears to have been a flat handle of the type found on the "handled ware" of the "A" cemetery at Kish (see Plates IX-X of this volume). The upper fragment is a light red ware the clay of which had a large admixture of sand.

Though no whole jar was found with two spouts, we have proof in the fragments shown in Plate LXXVI, Fig. 3, that vessels were made with a pair of

spouts placed side by side. Such a jar would have been useless as a drinking vessel, and was probably used only for libations.

The twisted rope-like handles which are shown in Plate LXXVI, Fig. 3, are interesting, for they do not occur in Mesopotamia at any other period. They should therefore, if found in conjunction with other early objects, prove a valuable means of dating a site.

The Jemdet Nasr pottery was not always hard baked, though sufficiently so to withstand considerable wear. Fragments have been found, however, of some of the larger vessels—always of the four-lugged type—which show that peculiar greenish appearance that is due to overfiring, in fact, to partial vitrification. The color is due to the presence of iron in the clay. These may, however, be pieces of jars that have been thrown away because of overfiring and warping.

The pottery can be conveniently described under four heads: (1) undecorated; (2) monochrome decoration; (3) polychrome decoration; (4) incised decoration.

#### UNDECORATED

This type of ware is naturally that found most frequently. Roughly made beakers, dishes, pans, and certain kinds of spouted and handled ware were probably left undecorated because they were in common use and likely to be often broken and replaced. If such utensils were decorated, it was with a plain band of color or a very simple design. See Plates LXIII, Fig. 20; LXVI, Fig. 31; LXVII, Fig. 21; LXVIII, Fig. 2.

#### MONOCHROME DECORATION

Either red or, more usually, black was used for simple monochrome decoration. The designs were strictly geometrical, with the exception of the plant design shown in Plate LXVIII, Fig. 2. The red paint was applied directly on the pottery without an intervening slip and, in consequence, has retained its color well. Two shades of red occur, a bright red and a purplish red, though never on the same jar in monochrome decoration. In the case of the broader bands of color, the paint seems to have been applied with a mop-like brush.

The black used seems to have been of two kinds. One was a cold black, probably made from some form of carbon. The second has a pronounced purplish tone and probably had a manganese base or possibly a little red was mixed with the black. A warm purplish black was used on much of the predynastic pottery of Egypt. It had a manganese base and was especially suited to withstand the heat of the furnace when the jar was baked. The same material was used in painting the designs on the pottery of Mohenjo-Daro and is still used for the modern painted pottery of Sind.

#### POLYCHROME DECORATION

This method of decoration seems to have been confined to two types of jar (Plates LXIV, Figs. 1-15; LXV, Figs. 15-38). Only three colors were employed: black (either cold or purplish), red (either bright red or plum-color), and yellow

ochre(?). The yellow was always used as a ground for the other two colors. In many cases, the colored ground was dispensed with, and either a slip of a neutral shade was used or no slip at all. In the latter case, the natural color of the pottery formed the ground of the design.

#### INCISED DECORATION

No color was employed in this form of decoration, which was done by hatching or pitting. The designs most frequently used were hatched bands and triangles. The latter were always placed with the apex uppermost, and the interiors were filled in with a simple crisscross hatching, made with a single point, not with a comb. Examples of incised decoration are illustrated in Plate LXVI, Figs. 35-37 and 43. Very little of the pottery was decorated with incised designs, and this form of ornament was apparently reserved for the type of jar seen in Plate LXIV, Figs. 11-12. Only small fragments were found of jars incised with triangular designs.

#### MATERIALS OF WHICH THE POTTERY IS MADE

The pottery is made of various kinds of clay, which were examined in the field with a magnifying lens to determine their nature as far as was possible without actual analysis. For the polychrome pottery a clay that burned a light red was always used; it was sometimes mixed with sand to temper it and in most cases contained a large percentage of lime, which is clearly distinguishable to the naked eye. For monochrome pottery a similar clay was used, as well as, but very rarely, a yellow or a gray clay. Sometimes a little brownish river-clay, readily perceptible through a glass of small power, was mixed with the clay that is now light yellow, to make it more plastic. The colors of the yellow and gray wares were not caused by various degrees of heat in the kiln in which they were baked, though heating must have influenced the color of the clay to a certain extent; they are definitely due to the various qualities and kinds of clay employed.

Some of the vessels (Plates LXIII, Fig. 11; LXIV, Fig. 14, types C and D; LXV, Figs. 2 and 31; LXVI, Figs. 3-4; LXVII, Figs. 16-17) were made of a drab-colored ware, which was nearly always very badly baked. This was probably a river-clay rather than a clay taken from the more sandy and lighter colored alluvium; the latter generally burns a light straw-color. Vessels of this heavier type of clay were nearly all of rough workmanship.

The colors of the clays and of the materials used to temper them prove, I think, that the pottery of Jemdet Nasr was made in more than one locality. These localities need not have been a great distance apart, for suitable material would be readily procurable from the two great rivers and in the surrounding plains. The red ware was in all probability a river-clay, which was found to be too rich and to require the addition of either sand or lime as a *dégraissant*. The yellow ware seems to have been made from the alluvial loam that now covers lower Mesopotamia; this, however, is not a satisfactory material for making pottery unless it be mixed with a certain proportion of a stiffer clay, as was certainly done at Jemdet Nasr.

The gray ware (Plates LXIII, Fig. 30; LXIV, Fig. 10; LXVI, Figs. 3, 42) that was occasionally found was thought at first to owe its color to vitrification, but, as it was found to be extremely soft, this possibility had to be ruled out. All the jars made of this kind of clay were broken, and owing to the softness of the paste they were exceedingly difficult to repair. The want of homogeneity in this gray ware is not due to an excess of sand, for it contains but little, if any, of that material. A similar gray ware is commonly found in the early chalcolithic sites of Baluchistan and India.

A complete bowl and a fragment of a jar were found made of a clay which was artificially blackened, either by mixing ordinary clay with a black substance such as charcoal, or by incorporating a material that carbonized in the kiln. The bowl (Plate LXVI, Fig. 28) is undecorated, but the fragment of pottery had an incised design upon it, consisting of a narrow band filled in with a zigzag motive in groups of either three or four lines. Above this was a wider band-like border with groups of parallel lines arranged vertically in blocks alternating with blank spaces. This variety of incised ware was probably rare, as only the one small fragment was found. There was no white filling in the incisions, though this was to be expected on the analogy of similar ware found at Kish (Plates I, Figs. 2-3; XLV, Fig. 5, of this volume). There is, however, no reason why this filling should not once have existed and have completely disappeared.

There is no doubt that the clay used for this ware was mixed with some other material in order to change its color rather than to alter its plastic nature. It has not been analyzed yet, but the burnt material in it will probably prove to be cow's dung or a similar substance. The surface was rubbed down before baking to close the pores and to impart a slightly burnished appearance.

Much of the red clay had a great deal of dirt mixed with it, charcoal being very common. This was probably unintentional and due simply to the clay being kneaded on dirty ground. This dirt is not apparent on the surface of a jar, but can readily be seen in broken fragments.

Not a single censer or offering-table was found at Jemdet Nasr, though the representation of one upon a sealing on a clay tablet proves that this type of utensil was known there (Oxford Editions of Cuneiform Texts, VII, p. vi). As this form of vessel was so commonly found in the graves of the "A" cemetery at Kish, it may be that we should have expected to find them only in a cemetery at Jemdet Nasr, and no cemetery has been located at this site.

### SLIPS

The polychrome pottery of Jemdet Nasr was always coated with a slip smoothly laid on and semi-polished, which served two purposes: first, to close the pores of the pottery, and second, to provide a smooth surface on which to paint the design. Very little of the unpainted pottery has a slip, and the surface is usually rather rough. When a slip is found on plain ware, it is of a lighter color (usually cream) than the pottery beneath, and it shows no trace of polishing or rubbing down. The same is true of most of the monochrome pottery.



For the polychrome ware, either a cream or a red slip was used. It was polished with a rounded tool—perhaps a piece of bone—and the marks of the rubbing are usually horizontal, though in rare cases they are also vertical. The slip is always so smooth and well laid that one suspects that the jar was placed on the wheel again for its application.

It appears that the slip was colored red before being applied to the jar. In every vessel examined by me the color is the same at the bottom of the slip as on the surface, which could hardly have occurred if the red color had been applied to a slip of neutral tint. The slip was very thickly laid on the whole of the jar, including the bottom and sometimes inside the interior of the rim, except those portions to be colored otherwise; for a red ground would tend to show through another color. This red slip must have presented a handsome appearance when new, for one has only to see a jar thus decorated before its removal from the earth and while it is still damp to realize what a fine red it was. The color used for this purpose possibly came from Hormuz in the Persian Gulf. At the present day color-makers all over the world use a very pure deep red ochre that is quarried there.

The brilliance of the slips on some of the Jemdet Nasr pottery is only equaled by that of the red ware of predynastic Egypt and of the painted pottery of Mohenjo-Daro. But there the resemblance ceases; in style of decoration and in shape the three wares cannot be compared. Considerable trouble must have been expended in rubbing down these slips, for they are as a rule uniform in thickness and the polish marks are not always perceptible. Such is the uniformity of the slip that at first it was thought that each jar so decorated had been dipped. But this was not done because the pottery itself is unstained and the slip shows a tendency to separate itself from the pottery when being dried after removal from the soil. The dipping process would have proved more satisfactory probably, but it would have been more expensive.

Minute particles of blue are to be seen with a lens in some specimens of this red slip (Plate LXV, Fig. 38). Similar blue particles have been found in the red slip of pottery sherds, showing that it was an impurity of some kind in the ochre. This is only of interest in that it may help us one day to prove the exact provenance of the ochre. The exact composition of this impurity has yet to be ascertained.

The spouted jar in Plate LXIII, Fig. 25, is covered with a very uncommon pink slip, polished either with a pebble or a piece of bone. Another slip, which is unusual as far as Jemdet Nasr is concerned, is slate-colored. It is applied to a bowl of light red clay (Plate LXVII, Fig. 19) and to another vessel (Plate LXIII, Fig. 13), and was at first thought to be merely the result of accidental burning; but further examination disproved this.

A few jars have the lower portion coated with a red slip and a cream-colored slip applied to the upper portion to form the ground of a monochrome design. These jars have been included among the pottery classed as polychrome, though

perhaps they would be better described as "bichrome," the red slip not forming part of the design.

Two colored slips are used on the jar illustrated in Plate LXV, Fig. 30. The lower portion is coated with a smooth cream slip, and the shoulder, neck, and rim with red—a most unusual and interesting feature.

In the jar figured in Plate LXIV, Fig. 9, the whole of the vessel is covered with a cream slip, but it is only rubbed down on the upper part. This is the only example of this treatment, and the jar is decorated with two colors.

Occasionally (Plates LXIV, Figs. 11–12; LXV, Fig. 13; LXVI, Fig. 28, and LXVI, Fig. 5), the surface of the pottery was rubbed down to give it the requisite smoothness instead of applying a slip.

In many cases pottery was washed over instead of a slip being applied. This "wash" through which the color of the pottery shows was really the result of the potter moistening his hands and wiping over the face of the pot rather than of a serious attempt to make a smoother surface. It is only when another more refined clay is applied to the surface of a jar that we can term the result a "slip."

#### PAINTED DESIGNS

In decorating a polychrome jar, it seems that the red slip was applied first, except over those portions which were to be covered with the design. When yellow was used, this was added next, and finally black. The advantage of applying black last was that it concealed the junction of the two other colors. On the smaller portions of the design, at any rate, the paint was applied with a brush, the coarse hair-marks of which are often clearly seen. The brush probably was made from the rib of a palm leaf or by soaking and teasing out the end of any fibrous piece of wood. No serious attempt was made to achieve regularity of outline. In fact, the charm of most of the designs is their slight irregularity, as may be seen in Plates LXVIII–LXIX; LXXVII–LXXX.

In all cases, it was only the shoulder of the jar that was decorated, the neck, rim, and body being either left bare or covered with a red slip. The designs, which are broad and bold, are from necessity quite simple. Wide panels or metopes of color were used, separated by black lines and alternating with panels filled in with checkers, lozenge pattern, or hatched triangles. This last design is by far the most common. It seems to be the forerunner of the incised designs of triangles that are so common on the censers and handled jars found in the "A" cemetery at Kish. In fact, the occurrence of these similar designs at Jemdet Nasr and in the "A" graves would lead one to conjecture that no great distance of time separated the two periods.

None of the spouted vessels is decorated with these patterns, with the exception of a naturalistic design in black on the jar shown in Plate LXIII, Fig. 15, and a geometrical design on Fig. 5 of the same plate. This latter design was painted in plum color, and is an arrangement of metopes filled in with checkers, wavy lines, and conjoined triangles. A third jar is shown on Plate LXIII, Fig. 29, which is painted with the motive in Plate LXVIII, Fig. 11. With these

ornamented spouted vessels must be included Fig. 20 in Plate LXIII, which has three simple bands painted in a purplish black, and the very similar vessel in Plate LXXVIII, Fig. 4. The fact that spouted vessels are not usually decorated is not to be wondered at, for they were only used to hold water and the decoration in any case would have to be extremely simple. In fact, with the exception of the two jars mentioned (Figs. 5 and 15), the decoration of spouted vessels was confined to plain bands of color.

Most of the designs on the painted pottery, excluding those with frieze borders, are made up of two alternating motives, so that the same idea should not be repeated with resultant monotony. It is somewhat rare to find three motives in the decoration of a jar, despite the fact that there was a considerable number of designs from which to choose. The very prevalent use of broad masses of either red, yellow, or the natural color of the pottery to separate the two paneled motives emphasizes rather than detracts from the general effect, and considerable skill is shown in obtaining the result desired. None of the designs can be said to be overburdened with detail, a fault that is often found in very early work, whether in Babylonia or in other countries.

Another point to be observed is the very careful use of black. When broad masses of this color were employed, it was in nearly every case in connection with monochrome, and the effect was, therefore, relieved by the light surface on which the black was applied. Black was sparingly used in the polychrome decoration to form a contrast with red and to outline the designs.

#### SPOUTED VESSELS TYPE A Plate LXIII

The most common type of pottery at Jemdet Nasr is the spouted jar. It is made in every conceivable form, the size of the spout being in some cases out of all proportion with the rest of the jar. At no time in the history of Mesopotamian pottery is this type of jar found in such numbers and variety. The nearest approach to the upward pointed spouts of this type of pottery is to be found in Egypt and dated there to dynasties IV-VI. Though spouted pots are very rare in Egypt, they commence there as early as the second predynastic period. Their evolution can be traced down to dynasty XII, when the spout becomes a simple lip depression.

Spouted vessels were but little used at the period of the "A" cemetery at Kish, if the small number found in the graves be taken as a criterion, though it is possible that for some reason this type of pottery was not regarded as an essential feature of burial equipment. There is no doubt, I think, that much of the spouted ware of Jemdet Nasr was used for ceremonial purposes; in the early cylinder seals it is frequently portrayed as being thus used. Jars (Figs. 24, 26-27) are indeed so roughly made, and their capacity is so small that one is led to think that they were intended for use at some particular ceremony and that they were then discarded. A water jar, to be of any use, especially in the East, must hold sufficient water for more than one long drink, and many of the spouted vessels found do not fulfil this requirement, though they would serve as libation vessels.

The mode of attaching the spout was to bore a hole through the shoulder of the jar and to place the lower edge of the spout against it. The union was made with a strip of clay, and the line of junction carefully wiped over so as to hide all traces of the joint. This gave a very neat appearance, but hardly a strong joint. The large number of detached spouts and spoutless vessels that were found on the site was doubtless due to the clay of spout and vessel not being of the same degree of plasticity and therefore failing to adhere properly.

The spouted jars illustrated in Plate LXIII have been arranged according to the form of the rim rather than the general shape. Those with perfectly plain rims are followed by a group with overhanging rims which were nearly as common as the simpler form. Farther on, a folded-over type of rim is shown, followed by a group of jars each of which has some unusual feature.

Jars 1-4 are of a light red clay, the last three being coated with a cream wash. In each the upper part is well finished, but not so the lower portion, which, as stated before, is a common characteristic of the unpainted pottery of Jemdet Nasr.

The rim of Fig. 5 is missing, unfortunately, but there is reason to think that it was quite plain. The jar is coated with a straw-colored slip, and upon the shoulder and upper part of the body designs were painted in plum-colored paint. These are quite simple, consisting of vertical panels filled in with checkers and wavy lines, and conjoined triangles as seen in Plate LXVIII, Fig. 13.

Fig. 6 is a very well made jar with a cream-colored slip.

Fig. 7 is of little interest, but Fig. 8 has been illustrated because its slightly splayed neck is unusual. Unfortunately, the portion that is drawn is all that was found of this jar.

The fine specimen, Fig. 9, has a beaded rim. It is somewhat roughly made, and its outer surface is undulating. The clay of which it is made is yellowish red in color and contains a rather unusual proportion of dirt.

Fig. 10 has a peculiar spout which, instead of projecting upwards, is more or less horizontal. That this is not an accident is proved by other spouts being found of a similar nature.

Fig. 11 is a well-made jar of a drab-colored clay which has a heavy admixture of sand; it is coated with a thin cream-colored slip.

Fig. 12, though otherwise quite ordinary, has one unusual feature: a line scored round it well down the body of the jar, instead of in the customary position round the shoulder.

Fig. 13 is quite typical, but Fig. 14 shows two unusual features: the end of the spout is finished off with a beading which gives it a more impressive look; and the slip is a slate gray color.

Fig. 15 is a most interesting jar, both in shape and decoration. The paste of which it is made is grayish green in color and soft; it contains a little foreign material, but no sand. There is no wash or slip. The shoulder of the jar is decorated in black with a design resembling palm-swathes (Plate LXVIII, Fig. 2); this is the only jar found at Jemdet Nasr thus decorated.

Fig. 16 is unique. Near the neck there is an aperture that can only have belonged to a spout, and close by the base on the opposite side there is another and larger hole that may have been part of a hollow handle. Judging from its size, this jar was probably a libation vessel. The clay of which it is made is light red in color, and the upper portion of the vessel is considerably better finished than the lower.

Fig. 17 is well made of a light yellowish clay mixed with a brown material that appears to be river-clay. Its spout is unfortunately missing.

Fig. 18 has a folded rim, and is coated with a thin slip that is now straw-colored.

Fig. 19, which has a very important looking spout, is excellently finished, and has a well-defined flat base. It is coated with a cream-colored slip.

The imposing jar, Fig. 20, has a small, slightly concave base. Its shoulder is decorated with three bands of plum-colored paint. The lower portion of the jar shows signs of having been pared with a knife. It was made of a light red clay thinly coated with a cream slip.

The next jar, Fig. 21, bears traces of having been painted in black and red. As it was blackened in a fire and is also much weathered, the design is too indistinct to be made out.

Fig. 22 has a very unusual beaded base which is perfectly flat beneath. The ware is light red in color, and the surface, though not rubbed down, is very smooth.

The interesting jar, Fig. 23, has a very unusual feature; the junction of shoulder and body is notched. It is made of a straw-colored clay mixed with river-clay to fatten it. The notched shoulder recalls some of the pottery found in the "A" cemetery at Kish. This notching or crimping looks surprisingly like an imitation of stitching used as ornament, though it certainly serves to unite more firmly the separately made body and shoulder of the jar. If, however, this notching be actually a survival of stitching we would expect to find more examples than we do in this early ware. Compare with the pottery in Plates IX, X, XLVIII, XLIX, of this volume.

Figs. 24, 26-27 were probably only used for ceremonial purposes as their sizes preclude them from holding much water. Judging from their elongated shape, they would appear to have been held by the base. The base of Fig. 24 has been trimmed down with a knife to give a smoother grip. Fig. 26 is heavily coated with a cream-colored slip and, like Fig. 24, is made of a light red paste mixed with a large proportion of sand and lime. The clay used for Fig. 27 is light yellow in color and mixed with river-clay. Figs. 26-27 are also illustrated in Plate LXXVI, Fig. 8. Compare with type XCI of "Ur (Al 'Ubaid)," Vol. I, Plate LX.

Fig. 25 has an unusual feature, namely, a ring-base. It is covered with a light pink slip which has been polished with a smooth instrument. The marks caused by the polishing are horizontal in direction.

Fig. 28 has a curious rim, which, though simple in form, has been ornamented with scored lines. This vessel is better baked than usual, and the light red paste of which it is made contains sand and lime. It has no slip.

Fig. 29 is of particular interest, for the upper portion of the jar, excluding the neck, is divided into panels containing the design shown in Plate LXVIII, Fig. 11, painted in a purplish red. Owing to its being in perfect condition, the clay of which it is made cannot be properly examined.

The very interesting jar, Fig. 30, is made of a gray paste, which contains no sand or other foreign matter, but has a soapy touch. The surface is smooth, but unpolished. The strap-like handle is 20.50 mm in width.

#### FOUR-LUGGED VESSELS TYPE B Plate LXIV, Figs. 1-15

This type also was a common one. The lugs or handles are always arranged at equal distances around the jar. They are somewhat roughly made and in nearly every case perforated horizontally—never vertically—by means of a fine tool. No attempt was made to smooth off the ragged edges of the holes so made. Occasionally, a jar or fragment of a jar was found with unfinished lugs which had been left unbored. Again, in some of the larger vessels, the lugs were very elongated with a downward projecting tongue to give a stronger attachment. An example of such a lug is seen in Plate LXXVI, Fig. 10, and, it will be noticed, bears a strong accidental resemblance to an animal's head, the holes suggesting eyes. There is a possibility that these lugs were likened to an animal's head (cf. a dish found at Tépé Aly-Abad, *Mém. Dél. en Perse*, VIII, p. 127, Fig. 238).

Sometimes the lugs were carelessly attached, with the result that they fell off and left but little trace of ever having existed.

Lugged vessels are nearly always painted in polychrome, especially those of the shape of Figs. 1-3, 7-8. They are invariably well made and finished, and were doubtless valued. Further, their flat bases suggest that they were used for valuable commodities. In fact, the wide mouths of the jars and the heavily polished slip with which the majority are coated lead one to the belief that they were intended to hold thick oils or unguents. These commodities would have attracted mice or rats or that more serious plague, ants, and the perforated handles were probably provided to hang the jars well out of their reach.

The line that is frequently scored round the upper part of the jar to link up the holes through the lugs may represent a cord that served either to fasten down a cover or to suspend the jar. An alternative suggestion is that this line between the lugs was scored when the jar was still upon the wheel, and that the lugs were placed upon it to ensure their being at an equal height all round the jar. In those cases where the lugs failed to adhere properly to the jar the line is seen to be continuous. I think, however, that my first suggestion is the more probable, as it explains the rare, narrow, hatched band between the lugs, which most certainly suggests a cord.

Professor Langdon found two collections of this type of jar, which were evidently models. They were too well made to be the work of children, and may

have been thrown out temple offerings. The jars in both groups seem to have been purposely broken. Those of one group were washed over with red paint, those of the other were of gray ware instead of the usual light red.

The notched ribbon around the shoulder at the base of the lugs, which is well shown in Plate LXXVI, Fig. 10, is a most unusual decoration in this type of jar. The rim is also exceptional for this type.

No. 1 is typical of the group, and is coated with a slip now of a greenish gray color.

The slip of Fig. 2 is cream-colored.

Fig. 3 is a portion of a jar of which only the part illustrated was found. It is exceptionally well baked, and the ware is very hard. The neck and body were painted black and decorated with single lines and hatched bands.

Jars 4-6 are all unusual forms and have no slip. Nos. 4 and 6 are made of a light yellow clay. Their lugs are very small, but all perforated. Fig. 5, which is hand-made, has an attempt at a ring-base.

No. 7 is thick for its size, though in other respects well made. It is entirely coated with a burnished slip, which was rubbed horizontally, as is shown by the markings left behind.

No. 8, also illustrated in Plate LXXVI, Fig. 12, is coated with a cream slip. The upper portion of the jar is painted red with a broad band of vertical metopes of crisscross hatching alternating with plain panels bordered on either side with three vertical lines. A thick roughly drawn line links up the plain and hatched panels around the jar.

The whole of No. 9 is coated with a smooth, but unpolished, cream-colored paste, which appears to have been rubbed down on the upper portion of the jar. The lower portion of the shoulder bears a design in purplish black and red, which is shown in Plate LXVIII, Fig. 6.

Jar 10 is of greenish gray paste which is now very soft and friable. The shoulder of this jar is ornamented with a design of simple triangles in black. Though well made and very regular, this jar has no slip.

Figs. 11-12, each provided with four very small lugs, are of a rare type. They are made of a light yellow clay, and are comparatively thin for their size. The surface is smooth and almost polished. Between the lugs there is a band of cross-hatching, done with a single point and bordered above and below by a horizontal line. Very similar pottery has been found at Susa and dated there to the second period (*Mém. Dél. en Perse*, XIII, Plate XXXII).

The substantial jar, Fig. 13, is entirely coated over, even to the inside of the rim, with a fine red slip carefully burnished in a vertical direction. On close inspection of the slip a number of minute shiny particles resembling mica are visible. Mica is very common in the red slips of the Mohenjo-Daro pottery.

No. 14 is very roughly made and striated below the level of the lugs. Its paste is softly baked, drab-colored, and very dirty; it is heavily mixed with sand

with brownish particles here and there which suggest an admixture of river-clay. A certain amount of charcoal is also present. There is no slip.

No. 15 seems to have been covered formerly with a thick red slip which has disappeared through the action of salt.

#### SINGLE-LUGGED VESSELS TYPE C Plate LXIV, Figs. 16-20

This type of jar, which is not so common as the four-lugged kind, has only a single lug which is placed near the top of the shoulder. It will be noticed that these jars all have rounded bases; yet it is doubtful if they were suspended, for, if so, the angle at which they would necessarily have hung would not have allowed of their being completely filled. A single lug might, however, have served to secure a cord holding down a cover. It should be noted that a line which may represent a cord is often scored around the jar at the level of the hole in the lug.

Vessels of this type were made of a light red or a drab-colored clay, very porous and heavily mixed with sand or lime or with both. They are not, as a rule, particularly well baked, and are thick for their size.

No. 16 is coated with a straw-colored slip. It was found broken, and pieces of it are missing.

No. 17 is a well-made jar with a line scored round the shoulder. It has a simple flat lug on one side with the upper part missing. There is no hole in this lug, and it resembles the plain handles sometimes, but rarely, present on the "handled" ware of the "A" cemetery at Kish.

No. 18 is a fine piece of pottery of a drab-colored ware heavily mixed with sand and lime. Its surface is smooth, and was once covered with a thick red slip. It has a line scored round the shoulder.

Nos. 19 and 20 closely resemble one another, both in their clumsy appearance and in the fact that the upper portion is smoothly finished off, whereas towards the base the workmanship is rough.

Vessels of this type are but poorly represented at Susa and Musyan. They have been found in the Al 'Ubaid II cemetery, and one specimen from that place is marked with a cord-like line that may be a survival of the similar lines round the vessels of the four-lugged type (Excavations at Ur, I, Plates LI, LIII).

#### STRAP-HANDLED VESSELS TYPE D Plate LXIV, Figs. 21-32

It was a surprise to find that well-made, flat, strap-like handles were a comparatively common feature of the pottery of Jemdet Nasr. They are not known elsewhere in Mesopotamia, as far as I can discover, until very late times; not a single vessel possessing a handle of this kind was found in the "A" cemetery, where all the handles were of a type not found at Jemdet Nasr. Why such a convenient means of lifting a jar as the strap-like handle should have died out, it is difficult to say. Handled vessels are frequently represented on the earliest seals of Elam (*Mém. Dél. en Perse*, XVI, Plates XI, Fig. 190; XII, Fig. 193; XIV, Fig. 216). In Egypt the handle is known in the Badarian period and also in dynasties I and III-IV, but was not at all popular.



These handles may have been copies of a loop handle originally made of some plaited fiber, such as rattan or grass. Most of the designs on the pottery seem to have been influenced by basket-work. The decoration in panels and the common crisscross decoration are highly suggestive of some loosely woven material.

The pottery of this type is seldom well baked, and the surface is roughly finished and often very irregular. The handle is in most cases as roughly made as the body of the jar and consists merely of a flat strip of clay, varying from 15 to 28 mm in breadth, which was fastened to the jar in a somewhat slovenly manner. Scored lines are common on this type of pottery and form the only decoration.

The ware of Nos. 21, 24-25, 27, 30-31 is of a light red or drab-colored clay heavily mixed with sand or lime. The clay of which Nos. 22-23, 26 and 29 are made is light yellow in color, with or without an admixture of sand or a little river-clay.

No. 21 is a soft, dirty, drab paste. The width of its handle is 17 mm, and two scored lines round its shoulder are its sole decoration.

No. 22 has a heavily scored shoulder, and is roughly made.

The base of No. 23 (cf. also Plate LXXVI, Fig. 12) is very uneven, and the jar shows signs of having been burned.

The handle of No. 24 is 15 mm wide. Its shoulder is scored with five lines of which only three are shown in the plate, and it is coated with a cream slip.

No. 25 has a loop-like handle, and there is a single line round its shoulder. It is very roughly made, and may have been the work of a child.

The handle of No. 26 is 18 mm wide and out of proportion to the rest of the jar. The clay is straw-colored, containing little or no sand, and is very porous.

No. 27 is made of an unusual material, a porous light red clay containing a large quantity of a red clay of a considerably darker color. Its handle is 35 mm wide and very roughly attached. There are six lines scored round the shoulder of the jar.

No. 28 has a roughly made handle, 35 mm wide, which was warped in the kiln. It is made of a yellow clay mixed with very fine sand and a dark material resembling charcoal.

The handle of No. 29 is 25 mm broad. It has been squeezed in against the side of the jar, which is warped and misshapen.

Only a short fragment, 35 mm wide, remained of the handle of No. 30. The body of the jar is very uneven, and has very pronounced finger-grooves inside.

No. 31 is a roughly made, badly baked jar with a handle 27 mm wide.

The interesting jar, No. 32, is evidently copied from a gourd. It is well made, but, being unbroken, its paste could not be examined. The jar is covered with a cream-colored slip. The shoulder is decorated with four scored lines (see also Plate LXXVI, Fig. 7). A very similar jar to this one was brought by an Arab to the camp at Kish and is now in the Ashmolean Museum.

## POTTERY WITH PLAIN RIMS TYPE E Plate LXV, Figs. 1-14

Figs. 1-14 in Plate LXV have been grouped together on account of their rims and not their general shapes, which are somewhat varied, because the number of examples found is insufficient for a closer classification. They are all roughly made, probably for everyday use. The clay of which they are all made unless otherwise stated is light red in color and contains a considerable proportion of sand.

Fig. 1 is roughly made, with an undulating surface, and has marked finger grooves inside. As it is unbroken, the clay of which it is made could not be examined closely.

Fig. 2 is better fired than the majority of these jars. It is made of a sandy drab-colored paste containing a small amount of dirt.

Fig. 3 is porous and light red in color and contains a heavy admixture of sand. It is poorly baked and the jar is thin for its size.

Fig. 4 was twisted in firing and its lower portion is warped. It has a thin cream-colored slip.

Each of these four jars has a flat base.

Fig. 5 has a line scored round its shoulder and is made of a porous red clay heavily mixed with sand. It has a pointed base.

The squat-shaped jar in Fig. 6 was badly blackened by fire and the ware of which it was made could not properly be determined.

Fig. 7 is entirely coated with a burnished red slip, even underneath the base. It is made of a porous red clay containing a considerable quantity of lime.

Fig. 8 is roughly made and was badly blackened in the fire that burnt down the buildings of Jemdet Nasr. It is thick for its size and has a rather spreading rim.

Fig. 9 has a small almost pointed base. It is well made with a smooth cream-colored slip.

Fig. 10 has a most unusual neck and a pointed base. The surface is smooth, but unpolished and much blackened. The clay could not be examined, as the jar is unbroken.

No. 11 is also unbroken and unusual in form. It is ornamented by a broad red line around the base of its spreading neck.

The upper portion of No. 12 is smooth, but its lower part has been trimmed off with a knife in places. The neck is exceptional in shape and looks as if it had been folded over when on the wheel.

The very small hand-made jar No. 13 is perhaps the work of a child. A very small hole in the side suggests that it once had a spout.

No. 14 is of a greenish-colored, sandy clay covered with a thin cream wash. The base is small and of the true "ring" type.

## POTTERY WITH OVERHANGING RIMS TYPE F

## Plate LXXV, Figs. 15-38

The jars grouped under this type show a considerable diversity of form, but the rim is the same in all cases. When on the wheel, the clay to form the neck was raised up considerably higher than in the finished jar; it was then folded over and pressed down again, so that the under side of the folded rim forms an angle of 90° with the neck.

This variety of rim is also very commonly found both in the spouted and other types of jar. A tool seems to have been employed in shaping these rims, for they are invariably smooth and well finished except on the under side. Moreover, they show a certain amount of striation, which is so regular that it suggests the use of some implement rather than of the fingers. Jars with a rim of this type are as often painted as not. They were made of a clay that burned a light red color or a clay that preserved its drab color in the kiln. Both clays were sometimes mixed with sand or lime, or both.

No. 15 has a smooth brown surface which is almost polished.

No. 16, which is also shown in Plate LXXVI, Fig. 4, has a design of triangles in two registers upon its shoulder, each triangle being apex upward and filled in with crisscross hatching (Plate LXVIII, Fig. 5). The paint used is of a violet tint, and was applied over a cream slip. The undecorated portion of the jar is coated with a red slip. Owing to the action of salt it is impossible to say whether the surface was also polished, but by analogy with similar jars this is more than probable.

No. 17 appears also in Plate LXXVI, Fig. 4. It has a square base—a most unusual feature. It is covered with a thick slip of a yellowish color which shows signs of having been polished, though it is badly blackened by secondary burning here and there. The shoulder bears traces of painting which are impossible to make out. Compare this vessel with that shown in Plate LXXIX, Fig. 3.

The upper portion of No. 18 is smooth and well made, but the lower portion is roughly fashioned, and the base poor and unsteady. The clay of which the jar is made is dark red in color and very dirty in appearance.

No. 19 was formerly coated with a highly burnished red slip.

No. 20 was clearly made in two pieces, for, though the neck and rim are missing, the present upper edge is quite level, as is seen in Plate LXXVI, Fig. 4 (the second jar). The shoulder is decorated with a design in two registers (Plate LXIX, Fig. 7). The colors are black, yellow, and red, the black being used to outline the designs which are red, and the yellow as a ground. The body and base of this jar are covered with a deep red slip which has been polished in a horizontal direction.

No. 21 is a squat globular jar, undecorated in any way and without a slip.

No. 22 also has no slip, but it is noteworthy on account of its very broad base.

No. 23 was at one time coated with a red slip, and had a design painted on its shoulder which is now, however, very indistinct.

The imposing jar No. 24 was apparently once covered with a highly polished red slip, but is now badly blackened by fire.

No. 25 has an unusual rim which instead of being sharp is slightly flattened at the outer edge. The light red clay of which it is made has a strong admixture of sand and lime, and also contains a considerable proportion of a black substance resembling charcoal. The surface is smooth, and was at one time covered all over with a finely burnished red slip. The shoulder is decorated with triangles, each with the apex upward, in alternate red and black (Plate LXIX, Fig. 8). The red triangles are filled in with that color, the others with a black crisscross hatching.

No. 26 has no slip, but No. 28, of similar type but somewhat out of shape, is thinly washed with a levigated clay. The jar in the middle of this group, No. 27, was formerly coated with a red slip which has now almost entirely disappeared. In its paste there is a heavy admixture of very fine sand.

No. 29 was also once covered with a highly burnished red slip.

No. 30 is peculiar in that its body is coated with a smooth cream-colored slip, whereas the shoulder, neck, and rim are painted a deep red. As a rule, when two colored slips are employed, the shoulder is cream-colored, and the body red.

No. 31 is of a badly baked, drab-colored ware which shows signs of accidental burning.

Nos. 32-33 are of no particular interest; they are undecorated and have no slip.

No. 34 (also shown in Plate LXXVI, Fig. 4) is unique, for the body is painted in two colors, whereas the upper part has a red slip only. The design on the body consists of broad, vertical metopes of red edged with black, alternating with blocks of the natural color of the pottery, each of which has a bluish black line down the center, very similar to Plate LXIX, Fig. 18, except for the zigzag lines.

No. 35 is of little interest. It is coated with a cream-colored slip.

No. 36 has a rounded base, and is somewhat irregular in shape. It is covered with a whitish gray slip.

The rim and body of No. 37, which also has a rounded base, are coated with a polished red slip. On the neck and shoulder, which are covered with a lighter slip that is now slightly pinkish, red triangles are painted, apex upward and with the edge outlined in black paint.

No. 38 has a flattened edge to its rim and a ring-base. The whole of the outer surface of the jar, except the shoulder, and even the interior of the neck are heavily covered with a plum-colored slip. The shoulder is decorated with broad, vertical panels of the same plum color, alternating with panels of the natural color of the pottery filled in with a crisscross hatching. Owing to the action of salt much of the slip and decoration has disappeared.

#### POTTERY WITH BEADED RIMS TYPE G Plate LXVI, Figs. 1-8

It is difficult to assign jars Figs. 1-8 in Plate LXVI to any particular section owing to their simple and yet varied forms and their uninteresting rims. The

latter, however, present sufficient similarity to warrant these vessels being grouped together on the basis of the shape of their rims. Most of this pottery is undecorated, and where designs occur they are of the simplest.

No. 1 is well shaped and made of a light red ware washed over with a light-colored clay.

No. 2, which is unusually thick for its size, is made of an unctuous-looking yellow clay containing a considerable amount of what appears to be a dark-colored river-clay.

The clay of No. 3 is of a dark hue, very porous, and heavily mixed with sand, with traces here and there of charcoal. The lower portion of the bowl is very uneven, especially on the inside, where the grooves left by the potter's fingers are conspicuous.

No. 4 is made of a very soft, porous, drab-colored paste tempered with sand.

No. 5 is hand-made and thick for its size. It is made of a light red clay which is free from foreign material, and has a smooth, but unpolished surface.

No. 6 is a yellow ware, light and porous.

No. 7 is light red in color, and its paste is heavily mixed with sand. It is very poorly baked.

No. 8 is well made and shaped, of a clay that has burned a light red color.

#### BEAKERS TYPE H Plate LXVI, Figs. 9-15

Judging from its shape, this type of jar which is comparatively rare at Jemdet Nasr appears to have been used only for drinking. The comparatively small size and open mouths of these vessels preclude their having been intended to hold water for any length of time.

Nos. 9-10 are two most interesting vessels, their distinguishing feature being the curious edge-like base formed by squeezing the sides together. It seems probable that their bases were thus shaped to fit into a special holder, as otherwise they will stand upright only in loose earth or sand. Both are hand-made, badly baked and thick for their size, one of a light red clay, the other of yellowish red. They show signs of having been burned inside; but whether this was accidental is difficult to say, especially as the two were found together.

No. 11 is made of a porous light red clay; it has a small flat base showing the focused striations caused by the separation of the jar from a column of clay on the wheel by means of a cord.

No. 12 somewhat resembles the beakers found in the "A" cemetery, except for the folded-over rim. It is well made and smooth outside, but heavily marked with finger grooves inside. The ware is a dirty-looking, light red clay containing minute fragments of charcoal.

No. 13 is probably the work of a child. It is small and very roughly made of a light red paste.

No. 14 is a graceful jar, of a light red clay containing a little lime.

No. 15 is very rough and badly warped in the firing. Its base is marked with focused grooves. It is made of a light red clay mixed with a little sand and containing comparatively large pieces of foreign matter, such as dirt and charcoal.

#### STRAINERS TYPE J Plate LXVI, Figs. 16-19

These four strainers are of considerable interest. Each has a small hole in the base measuring either about 5 mm or 12 mm in diameter. In addition, three have a pair of smaller holes placed close together just above the middle of the vessel. No. 17, however, has only one hole in its side, measuring 4 mm in diameter. It is possible that by means of these holes, which seem too small to admit the ends of a forked stick, the strainer was lashed to a handle to form a ladle. All these vessels are made of a light red clay mixed with a little sand, and they are very indifferently baked. Although strainers were found in the "A" cemetery at Kish, none is quite like those from Jemdet Nasr. Possibly these strainers were once filled with a porous material such as palm fiber or wool.

#### DISHES AND PANS TYPE K Plate LXVI, Figs. 20-30

In some of these dishes the base is rounded (Figs. 20-21, 26, 29-30), which suggests that they were laid either on the necks of larger jars or in loose earth or sand. The pan-shaped utensils with wide, flat, steady bases were very probably used for bread-making (Figs. 23, 27-28).

No. 20 is a dish with a vertical rim, and is washed over with a cream slip.

No. 21 is a well-made utensil with a smooth unpolished surface.

No. 22 is one of a large number of hand-made dishes, all alike, which were found together. They are very roughly made, as shown in Plate LXXVI, Fig. 7. They are of a light red clay, and are flat-based.

No. 23 is an unusually shallow dish. It is made of an imperfectly fired greenish gray clay in which there is a considerable amount of some red material which resembles powdered pottery.

No. 24 may possibly be a saucer in which to stand a jar, which may also be the case with Nos. 22 and 25. The latter has a flat base with strongly marked focused grooves.

No. 26 is a curious dish with a very irregular base and a well-finished, band-like rim.

No. 27, which is a very heavy pan, is made of a dark red clay containing a great deal of sand and lime and some other ingredient that looks like charcoal.

No. 28 is especially interesting in that the ware is a dark-colored, almost black clay containing a considerable quantity of sand. Both the inner and outer surfaces were polished with a smooth instrument whose marks run in all directions. This pan is handsome, very thick for its size, and poorly baked. In appearance and technique it is very similar to pans that were found in the "A" cemetery and approximately dated to 3000 B.C.

No. 29 is of no particular interest, and No. 30 is very similar in general appearance to No. 26, but better finished and baked.

## CUPS AND BOWLS TYPE L Plate LXVII, Figs. 1-27

The cups found at Jemdet Nasr are simple in form and closely resemble those of the early period of Kish. The flat base is marked with the focused grooves caused by cutting off the cups from a column of clay with a cord. In the East, at the present time, the potter when making the smaller and rougher types of vessel puts a sufficient amount of clay on his wheel for three or four, cutting off each cup as it is finished from the top of the pillar of clay. The large vessel, Fig. 1, was probably made separately, as it would be difficult to make it by the process described above.

All the cups, unless otherwise stated, were made of a light red clay, sometimes mixed with sand or lime, or even with both these materials. They are roughly made, and their interiors are nearly always better finished than their exteriors. Very few have a slip, and only in rare cases are they ornamented with simple bands of color red or black. From the great number found, this type of vessel must have been in common use, and readily discarded when not required owing to its cheapness. The small size and the thickness of this kind of pottery, as illustrated by Figs. 1-7, led to many being preserved unbroken. But owing to its simple shape this type of pottery is of no use in dating a site, for it is found in great numbers up to a comparatively late period in Mesopotamia.

Nos. 1-7 are of little interest from a technical point of view.

No. 8, which is thin for its size, is of a different shape, and is coated inside and out with a thin cream slip.

No. 9 is also better made, but otherwise of little account.

No. 10 is very rough; from its size it may have been intended for or made by a child.

Nos. 11-13 were rather better made and thinner than the majority of these cups.

No. 14 has a curiously squat form, and from its very small size may have been the handiwork of a child.

No. 15 is very coarse, and its outer surface shows strongly marked finger-grooves.

No. 16 is of no interest, but No. 17 is unusual on account of its extraordinary thickness. Its inner surface is heavily marked in spirals by the fingers of the potter. The clay is drab-colored and contains a considerable amount of dirt.

There is little of interest about Nos. 18-20, except that No. 19 is coated with a slate gray slip.

No. 21 is one of the few cups that are decorated. A brownish black was used for this cup, but red is the more common color. The paint was applied to the plain surface of the pottery without an intervening slip. This cup is of a porous straw-colored ware, and is soft-baked.

Nos. 22-23 are both hand-made with a beveled rim; in all about six examples of this shape were found. Most of them are very poorly baked and roughly

made, and none of them has a slip. Bowls with this type of rim have been found at Susa (*Mém. Dél. en Perse*, I, p. 84, Figs. 118 and 121; p. 75, Fig. 91), and Abu Shahrein. This type of bowl was found by Campbell-Thompson in burials, but no painted pottery was associated with it (*Archaeologia*, LXX, 1918-20, Fig. 3, No. 4; Fig. 4, No. 10; see also p. 111). The combination of beveled rim with a rough appearance should be of use in dating other sites where they might be found.

Nos. 24-27 appear at first sight to be unfinished cups. That this is not the case is proved by the fact that they were baked. The knob in the interior of the base is difficult to explain if these cups were used only for drinking. Nor could it be the result of an accident, though the projection in the base of No. 24 was perhaps due to carelessness or haste. Similar objects have been found at Mohenjo-Daro, where they were certainly used as jar covers. They are still used for this purpose by the modern inhabitants of Sind. Similar dish-like jar-covers with a knob in the middle by which to lift them have been now found at Gerar in Palestine, and have been dated there by Petrie to the Philistine period.

#### JAR STANDS TYPE M Plate LXVII, Figs. 28-33

Though these curious objects may not be jar stands, no other suggestion as to their possible use offers itself. They are therefore included here among the pottery. These objects of which six examples have been drawn are in appearance very like the old-fashioned "pork-pie," a nickname which was at once attached to them when they were found. They occurred in great numbers at Jemdet Nasr, and after a few of the best had been selected, the remainder were left behind. These stands (?) are all solid pieces of pottery; the base is flat with focused grooving and the upper edge ornamented with a single or double row of notches. The tops of some are flat, but many are slightly concave in the middle; in No. 30 very perceptibly so. These stands vary considerably in make, some being well shaped and finished, and others very rough. Owing to their solidity, their state of preservation is excellent. If any are found on other sites, they will prove invaluable for dating. None of these jar stands has a slip. They are all made of either a light red or a yellow clay.

Possibly these objects were used as stands for the finer make of painted pottery, especially those jars in which the base is covered with a red slip.

Some difficulty seems to have been experienced in detaching these objects from the wheel, even when they had been cut off by means of a cord. Nearly all of them show deep finger-markings close to the edge of the base, which may, however, have been caused by their very considerable weight when lifted from the wheel.

#### UNUSUAL TYPES Plate LXVI, Figs. 31-43

The jars grouped under this heading show a great diversity of form, and are mostly unusual. Several of them are ornamented with incised designs or with a notched beading.



No. 31 is made of a poorly baked dark red clay which contains a great deal of sand. It is decorated with three broad bands of red. Its square-edged, ledge-like rim is a rare feature in the Jemdet Nasr pottery. The interesting cup-like base is very similar in appearance to the bases of the "cup-based" pottery from Kish (Plates XIV, Figs. 8-18; LII, Figs. 1-9, of this volume).

No. 32 was only a fragment, but the complete jar seems to have been of the same type as No. 31, though its rim was slightly different. Two broad bands of a purplish black served to ornament it.

No. 33, which is made of a yellow clay mixed with a clay of dark brown color, is coated with a light yellowish slip.

No. 34 is made of the same kind of clay, but has no slip.

The very ornamental jar, No. 35, is the only one of its kind. It is made of a drab-colored clay containing an unusual amount of fine sand. The raised beading around its shoulder is carefully marked with an incised chevron design done with a sharp point.

No. 36 is of a porous, yellowish red clay containing a little lime. A notched incised line decorates the shoulder, and the upper part of the neck and the rim are ornamented with fine, obliquely incised lines.

The small jar No. 37 is embellished with a double row of notchings. As it is unbroken, the clay of which it is made could not be examined.

No. 38 is an object of great interest. It appears to be a jar cover, and is the only one of its kind found at Jemdet Nasr. The body could not be properly examined, as the cover is unbroken; its surface is covered with a cream slip.

No. 39 is made of a fairly well baked, porous red clay containing a great deal of sand and a little lime. It is entirely coated with a thick red slip, even underneath the base, except on the shoulder which is decorated with vertical bands of red edged with black, alternating with yellow bands also edged with black and with their interiors filled in with crisscross hatching. A scored line runs round the top of the shoulder. The ring-base is a noteworthy feature of this jar (for design cf. Plate LXIX, Fig. 12).

The flask-like jar, No. 40, has a notched beading around the base of the neck. Unfortunately, the rim is missing. This jar is well made, but the upper portion shows considerably more finish than does the lower part of the vessel.

No. 41 may possibly be a jar cover rather than a dish, and has therefore been included here. It is well made, but being unbroken its body could not be examined.

No. 42 is made of a dark gray paste which has been hard baked. Indeed, the color may be due to overfiring, for the vessel is almost vitrified. The shoulder is arranged in tiers each of which is carefully notched around the top.

No. 43 is decorated with three bands round the shoulder, filled in with oblique incisions made with a fine point. The neck and rim are missing, but the break suggests that these were oval in section. The clay is gray green in color with a

large admixture of a brown substance, but no sand. The surface of the jar is somewhat rough and striated.

A very peculiar form of handle (Plate LXX, Fig. 3) occurs on a fragment of pottery picked up on the site. It is ledge-shaped with a rod-like portion projecting horizontally outward from the middle of it. We were not fortunate enough to find the jar to which this handle belongs, but it must be recognized as a distinct type. Owing to the solid construction and peculiarity of the handle, it will doubtless be at once recognized if found on other sites (3350; Field).

The interesting theriomorphic pottery jar in the shape of a pig illustrated in Plate LXXVI, Fig. 2, must, of course, be included in the pottery. It is somewhat roughly made and measures 24.13 cm long. This must have been an object of ceremonial use, for it would have had to be filled and emptied by the mouth which has a very narrow aperture.

## II. MONOCHROME AND POLYCHROME DESIGNS

In Plates LXVIII–LXIX will be found some of the designs painted on the pottery from Jemdet Nasr. Many of the complete jars are in too bad a state of preservation for the patterns on them to be readily recognizable. On the other hand, many of the designs on fragments of pottery are well preserved and could be readily copied.

In the plates the colors are represented as follows: In the monochrome pottery, black represents either that color or red. In the polychrome pottery, black represents black, and also dark red when two kinds of red are used. Light red is shown by stippling, and a yellow or a cream slip by white. It was found by experiment that the usual heraldic representations of colors would greatly confuse the designs; they might lead to the supposition that the markings used to show the colors were actually designs on the pottery.

All designs in Plate LXVIII, Figs. 1–17, with the exception of Figs. 12, 15–17, are in monochrome, the color used being either black or red, and in the majority of cases painted direct on the body without an intervening slip. These designs, as will be seen, are very bold and free, and they are not complicated with unnecessary detail.

No. 1 is painted in red on the surface of a jar now in the Ashmolean Museum at Oxford. The design of hatched triangles is a common one at Jemdet Nasr; but the additional feature of the two snakes is rare, and only one example of this motive (on a small sherd) was found, though it is fairly common at Musyan, Tépé Aly-Abad, and at Susa, first and second periods (*Mém. Dél. en Perse*, VIII, p. 96, Fig. 139, and Plate VII). This motive was frequently employed in antiquity, doubtless on account of its simplicity.

No. 2 is a naturalistic design of which only this one example was found. It is painted in black and repeated round the jar, which has a grayish green body with no evidence of a slip. It was probably intended to represent palm leaves, but the drawing is so roughly done that any kind of leaf might be its subject. The jar upon which this motive is painted is shown in Plate LXIII, Fig. 15 (2494; Oxford).

No. 3 is painted in purplish black on the natural surface of a fragment of pottery of a friable light yellow clay mixed with a little river-clay (3425; Oxford).

No. 4 is unusual in that the triangles are entirely filled in, instead of being left bare or hatched. They are painted in purplish black on the natural surface of the pottery (3457; Field).

No. 5 is a very common design. It is painted in black on the cream-colored slip with which the shoulder of the jar is coated. The black has a slightly violet hue in certain lights. The remainder of the jar, i.e., the interior of the neck, rim, body, and base, is coated with a thick red slip (Plate LXV, Fig. 16. 2475; Baghdad).

No. 6 is copied from an unbroken jar (Plate LXIV, Fig. 9) coated with a smooth, but unpolished cream slip. The color is purplish black (2944; Oxford).

No. 7 is painted in a purplish black on the natural surface of a pottery fragment (3426; Field).

No. 8 shows the decoration on a potsherd of a light red clay mixed with a little lime. The design is a broad band painted in a warm black on the natural surface of the pottery. The rough five-pointed star above the band is a symbol that was found on many of the archaic tablets at Jemdet Nasr. It also occurs on one of the spindle-whorls seen in Plate LXXIV, Fig. 9 (3421; Field). A similar star is present on a seal from Susa (*Mém. Dél. en Perse*, XII, Plate 105, Fig. 93). Compare also similar symbols found on predynastic pottery in Egypt (Petrie, *Diaspolis Parva*, Plate XV) and the same motive found scratched on pottery of the C group found at Faras in Nubia (*Liverpool Annals of Archaeology and Anthropology*, VIII, Nos. 3-4, Plate XIV).

Nos. 9-10 are painted in purplish black on the surface of the pottery.

No. 11 likewise shows a five-pointed star, but rather differently drawn from that in No. 8. It is painted in purplish black on the drab surface of a spouted jar, which type of vessel was very rarely decorated (Plate LXIII, Fig. 29. 3118; Oxford).

No. 12 shows a design of lozenges painted in purplish black on a fine cream slip, with a band of red on either side (dotted). The body is a light red clay containing an admixture of sand and lime (3430; Oxford).

No. 13 is a design painted in plum color on the pottery body. It is unusual on account of the hatching of the interior of the double-triangle motive and in having two vertical lines. This design was found on the spouted jar illustrated in Plate LXIII, Fig. 5 (3349; Field).

No. 14 is a simple design in black on a rough cream-colored slip. The body is light yellow in color, very friable, and contains a certain amount of dirt (3422; Field).

No. 15 is a most unusual polychrome design. The curvature of the fragment suggests that its proper position is that in which it is placed in the plate. The ware is a light red clay mixed with lime, but containing little or no sand. Instead of the usual black, a purplish red has been used in conjunction with bright red. The darker red is represented by black for the sake of clearness. The ground is a very finely polished, light pink slip (3431; Oxford).

No. 16 is also a polychrome design. The colors are black and red (dotted), and the ground which makes the third color is a fine yellow ochre. The body is light red in color and mixed with a little sand and lime (3424; Field).

No. 17 is in black and red on a ground of yellow ochre. The lozenges formed by the hatching of the central panel are unusual in that some of them are filled in with red, alternating with those that are left the color of the ground (3457; Field).

Plate LXIX, No. 1, is a group of signs roughly scratched on a spouted jar of globular shape. It is the only inscription of the kind found at Jemdet Nasr. Professor Langdon is undecided as to the significance of the first sign, but would identify the second as *lal* ("to weigh" or "weight"). The third he identifies as *sal*, meaning "women," originally "pudenda." These three signs are probably a name. They would hardly be a pot-mark as a single sign would have sufficed for that purpose.

No. 2 of the same plate represents a fragment of pottery which has been overfired with the result that its decoration which was formerly black has turned to a greenish color. It is difficult to say what the motive on the right of the fragment represents, though there is little doubt that it is meant for some kind of animal.

No. 3 is a polychrome design in black and red on a yellow ground. The animal figure on the right probably represents a gazelle.

No. 4 also is painted in black and red on a yellow ground. The animal figure is difficult to identify; it was repeated at intervals down the panel of which only the top is shown.

No. 5 is part of a design painted on a jar of light red clay with an admixture of sand and lime. Groups of triangles boldly outlined in black have their interiors either hatched in black or filled in with red. The spaces on either side of the apices of the triangles are painted a deep yellow. Above and below the band of triangles is a narrower band painted deep red (3427; Oxford).

No. 6 shows a design painted in black, yellow, and red on the surface of the pottery. A horizontal band of red surmounts a rough triangular motive, and above there is again a rough, deeply notched beading.

No. 7 is in red and black on a yellow slip. The design in this case is confined to the shoulder of the jar, the remaining portion of which is entirely covered with a red slip (Plate LXIX, Fig. 7; 2473A; Field).

No. 8 is a most unusual pattern, consisting of a single row of triangles alternately hatched with black and filled in with dark red. The design is painted on a red ground (see Plate LXV, Fig. 25. 2544; Baghdad).

No. 9, which is fragmentary, is a somewhat crudely drawn, double-triangle motive painted in red. The interiors of the two triangles are filled in with a hatching of black lines crossing red. The unpainted portions of the decoration are cream-colored. The employment of two colors for the interior hatching of a triangle or of a double triangle has been noticed on a piece of unpublished pottery dated to Susa II. I have seen the same use of the two colors on early pottery from northern Baluchistan.

No. 10 shows a very small fragment of a design, but it is included here because the hatching resembles that of No. 9. The ground on which the design is painted is colored with yellow ochre.

No. 11 again shows the double triangle design, the interiors of the triangles being filled in either with solid black or with red; in the latter case the triangles are outlined with black. The ground is yellow ochre.

No. 12 was taken from a jar which was fairly complete, and, with the exception of the shoulder, coated all over with a red slip (Plate LXVI, Fig. 39). This jar is made of a porous, light red clay that contains a great deal of sand and a little lime. The coloring of the design is black and red on a yellow ground (3068; Oxford).

No. 13 represents a sherd of light red clay with a large admixture of sand and lime. The design is painted in black and red on a yellow ground (3428; Field).

No. 14 is a decoration in red and black on a ground of deep yellow ochre. The body is light red and contains a great deal of sand, but very little lime (3432; Oxford).

No. 15 is painted in black and red on a yellow ground. No. 16 represents a fragment of light red pottery, which contains a little lime. The colors used are red and purplish black. The ground is a smooth slip with a slightly pinkish shade (3433; Oxford). No. 17 is red and black on a ground of yellow ochre. No. 18 is black and a plum-colored red on a cream slip (Oxford).

No. 19 is perhaps the finest design found at Jemdet Nasr. The fragment on which it appears is all that was left of a very fine jar with four lugs. The body is light red in color, with a heavy admixture of both sand and lime. The decoration consists of broad bands of red and yellow, upon which thick lines of purplish black were laid to hide the junctions between the two colors, as well as to emphasize certain details. The red portions of the design are a heavy, smooth, plum-colored slip, which under a glass is seen to contain minute particles of blue. The yellow is a heavy paint, a natural ochre. Both colors have been carefully burnished in the horizontal direction with some rounded instrument (3424; Field).

No. 20 represents a fragment of a jar harder baked than usual. The colors of the design are black and red upon a cream slip (3429; Field).

The design which occurs most frequently on the painted pottery from Jemdet Nasr is the triangle, either outlined in a single color, or painted in alternate colors, red and black, or with the interiors filled in with a cross-hatching. This motive is common at Musyan also, but rare at Susa. Indeed, the triangle is employed in the decoration of pottery in most parts of the ancient world.

The next most common motive is the lozenge. A design that frequently occurs is a single vertical column of lozenges painted alternately red and black and bordered by black lines (Plate LXIX, Figs. 12-14 and 16). More rarely, the lozenges are painted one color only and arranged in groups of two or three vertical borders, as in Plate LXVIII, Figs. 12 and 16.

Very rarely, as in the design in Plate LXVIII, Fig. 17, the lozenges are painted red and yellow. The lozenge motive is well known on the pottery from Al 'Ubaid (Excavations at Ur, Plates XVII-XVIII, XLIX) and at Susa, first and second periods (Mém. Dél. en Perse, XIII, Plates V-VI, XXII, XXV). In the Susa I period this motive was generally used to fill in vacant spaces, but in

Susa II it is used for vertical and horizontal borders (*op. cit.*, XIII, Plate XXV; VIII, pp. 105-106). It is also known on the painted pottery from Anau (Pumpelly, Explorations in Turkestan, I, Plate XXXI). At Jemdet Nasr, the use of the ornament is confined, curiously enough, to vertical bands, never horizontal ones. As a design, however, in which three colors were to be shown, it serves its purpose well, giving equal prominence to all.

A modification of the triangle design is illustrated in Plates LXVIII, Fig. 11, and LXIX, Figs. 11 and 15. This is a fairly common motive, and was used both on monochrome and polychrome pottery, though more commonly on the latter. This ornament forms a very attractive border; it also was used always in vertical, not horizontal bands. The motive was used during both periods at Susa (Mém. Dél. en Perse, XIII, Plates VI, Figs. 1-2 and 5; XXVII and XXIX), especially in the first and also at Musyan (*op. cit.*, VIII, p. 101, Plate VII). It is to be found, where one would expect it, in Minoan pottery. It also appears on a vase from the neighborhood of Erivan, as mentioned by Frankfort (Studies in Early Pottery of the Near East, R. A. I. Plate V, No. 1). On Indian pottery of the chalcolithic period it is well represented, and it is known on the prehistoric ware of Honan in China. Like the lozenge design, this motive also lends itself to equality of coloring.

Its origin is obscure, but there is an interesting human figure on one of the jars from Susa that represents a warrior wearing a garment or carrying a shield very like in the shape to this motive. It is probable, however, that in this case the ornament was adapted to the figure rather than the figure to the ornament (Mém. Dél. en Perse, XIII, p. 94, Fig. 212).

An interesting motive is the conventional tree shown in Plate LXIX, Fig. 16. This is not at all common at Jemdet Nasr; in fact, it only occurs on three fragments of pottery. This ornament is, however, well known and occurs in both periods at Susa (*op. cit.*, XIII, Plates V, Figs. 2 and 8; VIII, Fig. 5; VIII, pp. 114 and 129; XII, pp. 159, 161), being especially common in the second period, and also at Musyan. It is a favorite decoration at Mohenjo-Daro, and is known at Anau (Pumpelly, *op. cit.*, I, Plate 34). It is also well represented on some of the incised pottery from the "A" cemetery at Kish (see Plate XLV, Figs. 11 and 13, of this volume). That this motive is derived from a tree or other plant seems certain, and it perhaps most closely resembles a palm-branch. In each of the examples found at Jemdet Nasr this form of ornament was drawn in red. Somewhat allied to it is the decoration found on a spouted jar, illustrated in Plate LXVIII, Fig. 2. This also may possibly represent a palm-branch, but I am inclined to think that this particular motive is derived from some other form of vegetation, for the leaflets are very short in comparison with the rest of the leaf.

The ladder motive, two examples of which are illustrated in Plate LXVIII, Figs. 9-10, was fairly common in Jemdet Nasr, either single, or double, as in Plate LXVIII, Fig. 10. It seems to occur only on monochrome pottery. The design in Plate LXIX, Fig. 3, really represents a tree, not the ladder motive. (Compare with Plate XLV, Fig. 10, of this volume.) The motive is uncommon at Musyan (Mém. Dél. en Perse, VIII, pp. 108, 132), and does not appear to have

been used in the period of Susa I. It is frequent on the painted pottery of Mohenjo-Daro, where it is repeated with monotonous regularity.

The simple border beneath the star in Plate LXVIII, Fig. 8, is also a common feature of the decoration of the pottery of Jemdet Nasr. Another form of the border, where the oblique lines give place to vertical lines, occurs only once on the Jemdet Nasr pottery. Borders of this kind are exceedingly common on painted pottery from whatever place, and are largely used at the present day in India.

Checker patterns, illustrated in Plates LXIX, Fig. 20, LXXIX, Figs. 1, 4, and LXXX, Figs. 1, 2, are somewhat rare at Jemdet Nasr. This form of decoration must not be confused with, and is indeed quite distinct from diagonal hatching, which produces a series of lozenges. A very simple form of checker, formed by simple vertical and horizontal lines, as illustrated in Plate LXIX, Fig. 17, is quite common. Only one color was used, however, the slip on the jar providing the second. This motive is found at Musyan (*op. cit.*, VIII, pp. 102, 106, 108), but seems to occur only in the first period of the Susa pottery, where it is very common indeed (*op. cit.*, XIII, Plates XIII-XV). There can be no doubt, I think, that the checker design is derived from basket-work.

Bands of cross-hatching are an extremely common form of decoration at Jemdet Nasr. The lines are usually in black, the ground being either the natural color of the pottery or a slip covering it. As a general rule, this decoration is arranged in vertical metopes, as in Plates LXXVII, Figs. 1, 3; LXXIX, Figs. 4, 5, but it is also used in panels in horizontal friezes (Plate LXVIII, Fig. 6).

The lines forming the cross-hatching are drawn at an angle of about 45° to the vertical border lines; and this angle is practically invariable, the only exception being the hatching shown in Plate LXVIII, Fig. 14, where the lines are at right angles to the borders, forming a checker pattern rather than cross-hatching.

A very rare form of cross-hatching is found on two fragments of pottery. Lines of two colors cross one another (Plate LXIX, Figs. 9-10), but the result is not very effective, which perhaps explains why it was not more used. As would be expected of an extremely simple form of decoration, cross-hatching was very widely used as a decoration in antiquity. At Musyan there was a tendency to very careful and regular cross-hatching with the idea, apparently, of producing checkers or lozenges rather than of quickly filling up a vacant space. Cross-hatching was extensively employed on the incised vessels of the "A" cemetery at Kish, but is very rare at Mohenjo-Daro.

The simple zigzag line, as a border, which occurs so plentifully on the pottery of Susa and Musyan, is sparingly used on the Jemdet Nasr pottery, if we exclude the triangles, which would resolve themselves into this type of decoration were their hatching removed. A more complex variation of this motive is shown in the designs in Plates LXIX, Fig. 18, and LXVIII, Fig. 7, where it is horizontal, and the more simple ones in Plate LXXX, Figs. 1 and 2.

Animal designs are very rare at Jemdet Nasr (Plate LXIX, Figs. 2-4). No. 2 is difficult to interpret; it may possibly represent an antelope with a long neck and the head lost in an upper border line.



No. 3 apparently represents an antelope with its head close to the trunk of a tree. Three very similar figures, also with trees, were found incised on pieces of pottery found in the "A" cemetery and dated to about 3000 B.C., a later date than that of Jemdet Nasr.

No. 4 is obviously an animal with its head turned to look backward. What the animal actually is, it is impossible to say, but representations of animals shown as looking behind them are quite frequently seen on early seals, especially those dated to about 3000 B.C. (Note the antelopes in Plate XLI, Fig. 7, of this volume.) A different variety of antelopes is pictured on the small sherd in Plate LXXX, Fig. 4, and what would seem to be a doe with her young is represented in Fig. 1 of the same plate.

The scorpion is frequently represented on the early pottery of Egypt and Elam, and it is, therefore, not surprising to find it also on the pottery of Jemdet Nasr (Plate LXXX, Fig. 1). The lion is very well known on the early seals of Sumer and we may, perhaps, recognize the hindquarters of the animal in Fig. 4 of Plate LXXX as belonging to this beast.

Two birds are pictured in Plate LXXX, Fig. 2, together with a fish. These motives are shown separately on the pottery of Elam, whether from Susa or Musyan.

There are many motives in the designs on the Susa and Musyan pottery which are rare or entirely absent at Jemdet Nasr. For instance, the little "W" motive which is so common on the Musyan pottery has never been found at Jemdet Nasr, though careful search was made for it. Also the cross-patée decoration which is so frequent on the pottery of the first period of Susa, and which also occurs on the Musyan pottery and again in some of the pottery from Turkestan (Pumpelly, *op. cit.*, I, Plate 32), seems to be entirely absent on the Jemdet Nasr ware, unless we accept the theory that the "double triangle" design is a modification of this motive. It is true that the cross-patée has been found at Jemdet Nasr, but only as a seal-impression (Plate LXXVI, Fig. 13), showing that the motive was known, though apparently never employed in the decoration of pottery.

The snake motive also is a common feature on the Musyan pottery, in both periods at Susa, and also at Tépé Aly-Abad. This design, however, is exceedingly rare at Jemdet Nasr, only two examples being known, one of which is represented in Plate LXVIII, Fig. 1, where the figures can hardly be recognized as snakes at all and show a marked deterioration of the original design. On the other hand, the simple border in Plate LXVIII, Fig. 6, apparently does not occur on any of the pottery from Elam, whereas it has been found in almost identical form on pottery from the lower levels at Assur two examples of which are given in Frankfort's article (Studies in Early Pottery of the Near East, Plate VIII).

Putting the question of shape aside for the moment, there is no doubt, I think, that the designs on the pottery from Jemdet Nasr on the whole strongly resemble those of Elam, especially Musyan; but the infrequency of animal figures and the stiffness and formality of the designs show a marked degradation. I

would, in consequence, date the painted pottery of Jemdet Nasr later than the Musyan pottery, which itself seems to be of a later date than the pottery of the second period of Susa.

It may be argued that the wares from Musyan and Jemdet Nasr are possibly of the same date and that the difference in the decoration of the two can be accounted for by the very considerable distance separating the two places. This, of course, might well be the reason for the absence from the Jemdet Nasr ware of some of the motives on the Musyan pottery, but, on the other hand, one would expect just as free a style of decoration in the former, accompanied by motives that do not occur on the Musyan ware.

Another point of interest in the Jemdet Nasr pottery is the very decadent style of drawing shown in the animals. In fact, some are barely recognizable as animals owing to their irregularity of form. In comparison with the animals on the Musyan ware, they occupy a very subordinate position. The animals portrayed on the Musyan ware and on the pottery of the second period of Susa are on the whole well done, though they tend in some cases to become geometrical in form; but they are quite recognizable. A glance at the animal figures in Plate LXIX, Figs. 2-4, will, I think, convince most readers that we have here a much more debased form of naturalistic decoration than occurs on the later pottery of Elam.

A marked feature of the designs is their linear form. In fact, the majority of them could have been prepared with a straight edge, but for the fact that their pleasing irregularity proves them all to have been drawn free-hand. These linear designs, though decorative, are nevertheless somewhat uninteresting and compare unfavorably with the freer work of Elam. On this account alone, the Jemdet Nasr pottery must be placed at a later date than the Musyan ware.

A fact also to be considered is that, as a rule, only the shoulder of the jar is decorated, the remaining portion being left the natural color of the pottery or coated with a slip, which was frequently red. This, again, is at variance with the Susa and Musyan pottery, whose decoration is but rarely confined strictly to the shoulder of a jar. Only a very few pieces of the Jemdet Nasr pottery have the body likewise decorated, as, for instance, the jar shown in Plate LXV, Fig. 34, which has a somewhat similar design to that pictured in Plate LXIX, Fig. 18. In a jar of this type, which has a very indefinite shoulder, it was naturally not so easy to confine the decoration to the shoulder only.

The curious arrangement of the decoration on the painted jars from Jemdet Nasr in solid panels of color separated by panels containing varied designs seems to have been in vogue as early as the first period of Susa (*Mém. Dél. en Perse*, XIII, Plates XXI-XXII), but, curiously enough, it is comparatively rare in the second period and at Musyan; though, as pointed out before, the lugs and the general shape of the Jemdet Nasr pottery approach more closely to the later than to the early pottery of Susa. The decoration on the Susian or Musyan wares was more or less frieze-like and continuous. Examples of the latter type of decoration are, of course, also found at Jemdet Nasr, but it is much less common than the

vertical panels. Such an arrangement suggests a derivation from pottery that was carried in a basket-work cover to protect it, the body of the jar being completely encased and the shoulder and neck protected at intervals by vertical strips only. This arrangement of the design in panels is an almost invariable feature of the polychrome pottery. The simple frieze, or horizontal border, is usually painted in monochrome. It must be admitted, however, that there are designs which it is difficult to trace back to basket-work, though this is suggested by their general arrangement.

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From the fragments received a number of jars with painted designs have been partially or completely restored by T. Ito in Field Museum. These are illustrated in Plates LXXVII-LXXX. The technical description of these pieces has been prepared by D. W. Phillips.

Fig. 1 of Plate LXXVII represents a squat pot, 21.10 cm high, with a diameter of 9.20 cm at the base. It swells from a narrow base to a well-defined shoulder at about half its height and curves in from the shoulder to a wide open mouth. The neck is well defined, but short, and has a sharply outward sloping rim. These three elements are treated separately in decoration: the lower half of the pot swelling to the shoulder is in undecorated bright red; the upper half above the shoulder is decorated, within 2 cm of the neck, with black ferruginous paint on the buff ground of the pot. The decoration is carried out in a kind of elongated triangle with the apex cut off. In twelve such spaces, two filled with cross-hatching are followed by one with three or four lines drawn parallel with one side of the headless triangle, this by two with cross-hatching, and so on. The spaces between these headless triangles are painted with the red paint of the base. The upper and lower limits of this area of decoration are defined by black lines running around the body of the pot—one at the shoulder and the other at 1-2 cm from the neck. The neck and rim are painted in the red, which is carried inside the pot to the bottom of the neck.

The pot was fired at a fairly high temperature; it is roughly 1 cm thick, but is thinned at the shoulder and, with graceful skill, at the rim.

Fig. 2 of the same plate illustrates a squat jar with four lugs, well baked and suggesting the existence of an original cover. It is painted with a dark red pigment inclined to purple, which is badly damaged, but appears to have had a luster.

Fig. 3 of this plate represents a larger heavy stone jar, 25.90 cm high (diameter of base 5.70 cm), swelling from base to its greatest width at about half its height, then recurving gently back to its neck. At the greatest width is a scarcely perceptible shoulder. There are four knobs at the base of the neck which are clearly decayed lugs. The base of the pot is well made and slightly hollowed. The mouth is narrow in relation to the body, and the slope of the rim is gently away from the neck. The decoration (which is confined to the upper half of the pot, the neck, rim and lower half being painted in bright red) is badly damaged, but shows longitudinal bands defined by black lines and filled with hatching and diamonds so as to leave the buff ground visible. The interspaces are filled in with red. The

fabric shows a tendency to flake, but is well made, about 1.20 cm thick, and was fired at a moderately high temperature.

Fig. 4 of this plate is an elongated, pear-shaped vase, 20 cm high (diameter of base 3.20 cm), swelling to greatest width high up the body and curving in to a high neck (3.50 cm) with outward sloping rim. The light-colored clay has been toned with a pink wash. The clay is well baked and durable; it is 0.80 cm thick. The base is too small in area and too uneven to support the vase.

Fig. 1 of Plate LXXVIII is a squat ovoid pot, 20.80 cm high (diameter of base 10 cm), decorated with light red paint and two bands of chevrons, which are separated and outlined by a dark brown paint. The red paint is carried down inside the neck. The clay is well baked. The chevrons are filled with a red paint, a plain white paint, and a dark brown cross-hatching on a painted white ground.

Fig. 2 of this plate is a globular pot, 19 cm high, with a wide base (9 cm in diameter), narrow neck, and a spout high up on the shoulder. The greatest width is well below the middle of the pot; there is a slight shoulder below the neck, the existence of which is brought out in the decoration. The neck is very narrow, but opens in trumpet-mouth fashion. The clay is well fired, durable, thickened at the base, and is from 0.80 to 1.20 cm thick. The pot is decorated in reddish purple paint on a buff ground. The decoration is confined to two fields: (1) the body of the pot from the shoulder to within 5.50 cm of the base; (2) the space (which is somewhat flattened) between the shoulder and the base of the neck. The decoration consists of straight and wavy lines, cross-hatching in chevrons, alternate squares of paint and the free-ground buff. It is applied with an intelligent appreciation of the shape of the pot.

Fig. 3 of this plate is a distinctly square jar, 18.90 cm high (diameter of base 14.30 cm), rather like a kettle, possibly only for storing. It has a high, almost rectangular body, a flattened top with a thick rim, no neck, and four pierced lugs which seem too small to have any function, in view of the weight of the jar. The clay, about 0.70 cm thick, is well fired and durable; it is painted with a not very permanent, dark red wash. The top strongly suggests the original existence of a cover.

Fig. 4 of this plate illustrates a tall jar (32.20 cm high, diameter of base 4.40 cm) with very narrow trumpet-mouthed neck and a spout. It is of rather coarse light buff ware made up in three sections: (1) the conical base to about halfway up the pot; (2) the swelling upper half of the body; (3) the neck. The spout is on the line of the junction of (2) and (3). Three lines are drawn around the top of the body with a dark purple paint.

In Fig. 1 of Plate LXXIX is shown a sherd of a large pot (about 36.80 cm at its greatest width), which swelled from the base to a well-defined shoulder (cf. Plate LXXVII, Fig. 1) at about half its height. It curved from this shoulder to the mouth. The sherd comes from that portion above the shoulder which was the only portion decorated, the lower part being, originally, merely painted with a dark red paint. The pinkish clay was well baked and covered with a cream slip. The decoration consists of pairs of elongated cream triangles drawn with dull

black paint and separated by thick bars filled with the black paint so as to leave cream rectangles visible. Four thin black lines are drawn in the triangles. The rest of the sherd is painted with the dark red paint which must have had a distinct sheen. There are two lugs on the sherd which are not pierced and seem to have no practical use.

Fig. 2 of this plate is a well made little vase, 5.70 cm high, perhaps for ointment or perfume. It is of pinkish clay covered with a cream slip. The body of the vase is decorated with dark red and black pigments so as to leave the cream slip visible in places. At the base of the neck is a thick line of black paint; the neck itself has only the cream slip for decoration, while the sharp-angled rim and the inside of the trumpet-like mouth are light red. The cross-hatching which can be seen in the photograph is in black paint.

Fig. 3 of this plate is a well baked jar, 9.70 cm high, of pink clay with a cream slip. At the base of the neck is a zigzag ornament in what was once purple red paint. The inside of the neck and the rim seem to have been originally painted with the same purple red color. The base of the jar is square, and over each side of the square a red triangle is painted. At its greatest width the jar is round. All the colors have been affected by fire. (Compare with Plate LXV, Fig. 17.)

Fig. 4 of this plate represents a fragmentary jar (30.50 cm high) with knobs on the shoulders and geometric decorations in purplish paint.

Fig. 5 of this plate shows a pot, 10.80 cm high, of a well baked, buff-colored clay. It has a slightly raised base. From this base the body rises at an angle to its greatest width and, making an obtuse angle at that point, it rises again to yet another angle on the line of the four pierced lugs. The decoration is applied, with an eye to the shape of the vessel, in a light red paint on the buff clay. Two lines are drawn around the body: one to include the lugs; the other at the greatest width. Within these lines and between each pair of lugs is a rectangular field filled with cross-hatching. On each side of this field are two thick bars and three to six thin lines. The painting itself shows but little real care.

Fig. 6 of this plate is a curious little vase, 7 cm high, made of pinkish clay which tends to flake. The base is well defined, and the vase stands well on it, rather like two cones with their bases placed together. The whole body was painted with a purple red paint which must have had a slight luster. The neck is badly damaged but was probably trumpet-mouthed.

Fig. 1 of Plate LXXX illustrates the restored fragments of a well made jar. The decoration is applied with black lusterless paint on the buff ground; occasionally a red line (distinctly lighter in the photograph) is added to the lines defining the rectangular fields of decoration. It is a conventionalized naturalistic style. Attention should be drawn to the cross-hatching on the body of the kid suckling its young. In two fields there is a conventionalized animal which may be a sea monster.

The fragment in Fig. 2 of this plate exhibits on the right and left a bird with a fish in its beak. Its body is filled with a hatching. Of special interest are two eyes separated by a bar of black and free buff squares.

Fig. 3 of this plate is a sherd (15 x 9 cm) of rather coarse, dirty-gray clay. It is 1 cm thick and very well baked. The decoration—somewhat slackly carried out—consists of diamonds in a black lusterless paint.

Fig. 4 of this plate is a sherd (9 x 9 cm) of a well made pot originally decorated in bands. The decoration is painted with a thin brownish black lusterless paint on the clay ground (light buff). There is a stag with antlers looking backward. The other animal is probably a lion.

### III. TOOLS AND IMPLEMENTS

The copper objects found at Jemdet Nasr were unfortunately very badly preserved owing to the damp and salty nature of the soil. They were mostly found in irregular masses of oxide with but little trace of the original metal left.

#### ADZE Plates LXXI, Fig. 32; LXXV, Fig. 6

The copper adze shown in Plates LXXI, Fig. 32, and LXXV, Fig. 6, is, however, in a surprisingly good state of preservation. It resembles some of the adze-shaped battle axes found in the "A" cemetery at Kish (Plate XXXIX, Fig. 9, this volume) and is 21.40 cm long and 5.55 cm wide at the cutting edge, which is sloped both sides. Its thickness including incrustation is 8.50 mm. Similar blades have been found associated with painted pottery at Susa (*Mém. Dél. en Perse*, XIII, p. 11, Fig. 27) and also at Musyan, but they were somewhat shorter in form (3136; Oxford).

#### SPATULA Plate LXXI, Fig. 30

No. 30 in Plate LXXI is a round piece of copper rod, 9.50 cm long, that is flattened at one end. It was probably used as a spatula to extract a cosmetic from a jar (3344; Baghdad).

#### FISH-HOOKS Plate LXXV, Fig. 4

Two fish-hooks are illustrated in Plate LXXV, Fig. 4. The larger one is made from a rod of copper 6 mm thick, but it is so corroded that it cannot be determined whether it was hammered or cast. It is 7.10 cm long (2482; Field).

The smaller hook is 6 cm long and 5 mm in diameter. It has a single barb, and the shank is slightly flattened at the end to prevent the line from slipping (2481; Oxford).

#### STONE IMPLEMENTS Plate LXXV, Figs. 9-10

Two stone implements, shown in Plate LXXV, Figs. 9-10, were the only two of their kind found at Jemdet Nasr. No. 9, measuring 7.80 x 6.90 x 1.90 cm, is a piece of gray chert, lenticular in shape. It was probably used as a scraper (2428; Field).

No. 10, of the same material, is 1.50 cm long. It is roughly made and shows slight traces of polish at its broader end. This object was probably used as a hoe, and its counterpart has been found at Abu Shahrein and Ur in southern Babylonia (*Archaeologia*, LXX, Plate VIIB; Excavations at Ur [Al 'Ubaid], I, Plate XIII), also at Susa (2427; Baghdad). Dr. Campbell-Thompson found a number of similar hoes lying on the surface of the ground at Abu Shahrein (*Archaeologia*, LXX, Plate VII [B]).

#### HONES Plates LXX, Figs. 15-17; LXXI, Fig. 28

No. 28 in Plate LXXI (see also Plate LXXV, Fig. 6) is of sandstone and 18.90 cm long. Down one side it has been worn to a blunt edge. The wider edge is

beveled. Though the usual hole for suspension is absent, there is reason to think that this implement is a hone (3135; Baghdad).

Several hones are better made and shaped. No. 15 in Plate LXX, 7 cm long, is made of sandstone. It is very similar in design to some found in the "A" cemetery at Kish (3105; Oxford).

No. 16, also of sandstone, is 8.40 cm long by 2.65 cm wide. It has a hole for suspension, which is deeply beveled on both sides of the stone—a very unusual feature, showing that the maker found great difficulty in piercing it (3098; Field).

No. 17 is of sandstone and 1.29 cm long. It is unusual in shape, with a projection at the top which has been pierced by a small hole. It is a good example of its kind (3300; Field).

#### CELTS Plates LXX, Figs. 23–24; LXXIV, Fig. 1

The two polished stone celts illustrated in Plate LXX, Figs. 23–24, and Plate LXXIV, Fig. 1, are the only two of these objects found. The first is 5.30 cm long and irregular in shape; it is made of a very hard gray stone (3370; Field).

No. 24 is better shaped, though somewhat roughly made. It is a hard stone, measuring 6.40 x 3.50 x 1.50 cm, that is olive green in color. Owing to its very blunt edge, which is 5 mm in thickness, this implement would have been of little use as a tool, but it probably made a very efficient battle axe (3401; Baghdad). Similar celts have been found in the "A" mound at Kish. Plate XXXVIII, Fig. 8, of this volume.

#### AXES Plate LXXV, Figs. 7–8

The interesting battle axe made of pottery, illustrated in Plate LXXV, Fig. 7, is the only one of its kind to be found. Despite the material of which it is made, it could have been a very serviceable weapon, as it is very hard baked. It is provided with a socket for a handle (3029; Baghdad). We are accustomed to socketed weapons in Mesopotamia, dated about 3000 B.C., but this pottery model shows that they can be carried back much farther. Very similar axes in pottery have been found at Al 'Ubaid (Excavations at Ur, I, Plate XLVI, 2).

Implements of the type shown in Plates LXXV, Fig. 8, and LXXI, Fig. 29, which are of pottery, have also been found at Susa, but made in copper (*Mém. Dél. en Perse*, XIII, p. 11, Fig. 29). The specimens from Jemdet Nasr are evidently models of the real article, fashioned perhaps for burial with the dead. The first is now 12.20 cm long, as part of its handle is broken off (3050; Field). The second, which also has a portion missing, is 11.40 cm long (3051; Baghdad). The third is perfect, and is 12.80 cm long (3014; Oxford). The three implements are made of a fine compact, straw-colored clay, hand-modeled and with smooth surfaces. In each, the broad end terminates in as fine an edge as is possible in pottery. I regard these as model axes.

#### SICKLES Plate LXXVI, Fig. 11

The two sickles illustrated in Plate LXXVI, Fig. 11, were also found at Jemdet Nasr. Both sides of the tool are illustrated. In the "A" cemetery at



Kish were found pieces of flint of rectangular shape with two fine-notched edges which were used in making pottery sickles. They were fastened to the pottery holder in a row with bitumen. Some of this material still firmly adheres to the flints in many cases. Pottery sickles of this description are a common feature of very early sites in Babylonia. The fact that they come down from very early times is proved by specimens being also found at Jemdet Nasr. Though these sickles were baked very hard, they were very liable to breakage owing to their brittleness, which accounts for the great number of broken specimens that have been found. The flint teeth were evidently of much more value than the holder, with the result that when the latter broke, the teeth were removed and re-used in a new holder (3104; Baghdad. 3369; Field).

#### SPINDLE-WHORLS Plate LXXIV, Fig. 9

Spindle-whorls were found in considerable numbers at Jemdet Nasr, showing that spinning and weaving were well known at the period. The majority of the whorls are uninteresting, being made of baked clay and unornamented. A few, however, are decorated (Plate LXXIV, Fig. 9).

Taking the whorls in order from the top, we first have one decorated with simple radial lines. It is made of baked clay, and is 4.30 cm in diameter and 1.40 cm thick (3078; Baghdad). The second in the upper row is also of baked clay; its upper surface is decorated with linked radial lines. It is 4.60 cm in diameter, and is 1.50 cm thick with a slightly concave base (3079; Field).

The third is made of steatite, and originally measured 5.50 cm across and 1.80 cm in thickness; but, unfortunately, half this whorl is missing (3082; Baghdad). The largest whorl is made of bituminous limestone; whether natural or artificial, it is impossible to say. Its dimensions are 9.40 cm across and 2.10 cm in thickness. The pattern is a rosette with a zigzag line around it (3081; Baghdad).

The middle whorl is of pottery and decorated with looped radial lines. This measures 3.70 x 1.20 cm (3083; Baghdad). The one to the right of it is 3.65 cm in diameter and 1.10 cm thick; it is made of limestone with a deep groove round its upper surface which was probably once inlaid with bitumen (3080; Oxford). The middle whorl at the bottom of Fig. 9 is interesting for the five-pointed star that is incised upon its surface (compare the stars painted on the pottery fragments in Plate LXVIII, Figs. 8 and 11). It measures 4.60 cm in diameter, and is 1.20 cm thick. It is made of baked clay, but is badly chipped at the edge (3085; Oxford).

The last whorl measures 4.80 cm by 1.50 cm, and is also of baked clay; its upper edge is decorated with radial scratches (3084; Baghdad).

The rosette that is incised on the large whorl is interesting, because it is the oldest known example of this motive that has yet been found in Mesopotamia. I exclude the examples found on game-boards from the early royal tombs of Ur, as the date of these tombs has not yet been finally settled. The use of the rosette extended over a very long period in Mesopotamia and certainly down to Persian times. It will be noticed that the makers of some of these whorls found it difficult to draw a rounded end to the petals of the rosette and used straight lines instead.

## NEEDLES AND BODKINS Plate LXXI, Figs. 1-7

Needles and bodkins (Plate LXXI, Figs. 1-7) are in some cases difficult to distinguish from the hair-pins shown in the same plate. The holes through the heads suggest that they were used for sewing rough materials, such as tent-cloth and leather. They are all made of bone, and two (Plate LXXI, Figs. 3-4) are very roughly fashioned. Figs. 5-7 on the same plate are better shaped, with pointed heads which may have been used to enlarge a hole or to mark the material being worked.

Fig. 1. Broken. Now 7.70 cm long. Round in section with a slightly flattened head with eye (3333; Field).

Fig. 2. Broken. Now 5.70 cm long. Oval in section (3334; Oxford).

Fig. 3. Perfect. 11.80 cm long, 0.80 mm in diameter. Round in section (3402; Baghdad).

Fig. 4. Broken in two pieces and repaired. 9.40 cm long, 7 mm in diameter. Round in section (3403; Field).

Fig. 5. Broken. Now 5.80 cm long, 10.50 mm in diameter at the head. Round in section (3090; Baghdad).

Fig. 6. Broken and repaired. 12.40 cm long, 9 mm in diameter at the head. Round in section (3327; Baghdad).

Fig. 7. Broken. Now 8.20 cm long, 10 mm in diameter at its widest part. Round in section (3340; Baghdad).

## MACE-HEADS Plate LXX, Figs. 7-8

What appear to be mace-heads are shown in Plate LXX, Figs. 7-8. Both are made of baked clay. The first is 9.70 cm high and 11.10 cm in diameter (3464; Field). The second is 7.50 cm high and 11.40 cm in diameter (3463; Field). They were probably lashed to a stick and then coated with bitumen, and must have looked very much like the weapon which is still used by the Arabs of Mesopotamia.

Fig. 9 in the same plate is difficult to understand unless it be an unfinished mace-head. It has the shape of a mace-head, but though there are deep holes at the top and bottom, they were never made to meet. This object is of gray tufa, is rather weathered, and appears to have been shaped by means of a stone hammer. It is 6.40 cm high and 6 cm in diameter (3378; Oxford).

## BRICKS Plate LXX, Fig. 25

Fig. 25 in Plate LXX illustrates the type of brick found in the walls of Jemdet Nasr. Two sizes were found: 20 x 8.50 x 8 cm and 23 x 9 x 6.50 cm, the first always unbaked, but the second both baked and unbaked. The baked bricks, which were sometimes used for thin walling as well as for paving, always have three oblique holes made with a stick when the brick was wet, and average 1 cm in diameter. The purpose of these holes is difficult to explain. They may have been intended to assist in drying the brick, but their regularity—they are

always in a line in the center of the brick—militates against this theory. Nor would such regularity be necessary, if the holes were required for frogging. None of the unburnt bricks was perforated in this way, and we are, therefore, led to the conclusion that the holes were thought to help in some way in the baking of the bricks (2987; Field).

#### GUTTERS Plate LXXVI, Fig. 9

The objects shown in Plate LXXVI, Fig. 9, are two of the gutters that carried off the water from the roof of the building at Jemdet Nasr. They are well made of baked clay, and seem to be the first articles of the kind found in the archaic period of Babylonia. The one on the left is 37 cm long, 9 cm wide, and 4.70 cm deep on the outside; it is well made, of a light yellow clay plentifully mixed with sand. The sides of the gutter gradually fine down toward the end of the spout (3442; Field). The other is 31 cm long, 11.50 cm wide, and 6.50 cm deep on the outside, but the portion that was fixed in the wall is missing. In this specimen, too, the sides decrease in height toward the end. The clay of which it is made is greenish in color and imperfectly baked (3443; Oxford). These two gutter-spouts prove that at this very early period large buildings, at all events, were provided with more adequate means of carrying off rain water from the roof than was the large Sumerian palace of a later date excavated at Kish.

#### STONE OBJECTS OF UNCERTAIN USE Plate LXXV, Fig. 5

Stone objects of the kind shown in Plate LXXV, Fig. 5, were found at Jemdet Nasr in fairly large quantities. Their exact use has not yet been determined. It was at first thought that they were net-sinkers; but as stone is so rare in Babylonia, it is hardly likely that it was used for this purpose owing to risk of loss. Again, these objects resemble one another very closely in form and especially in size. The deep grooves which are carried down the sides as well as crossing one another at the tops of these stones strongly suggest that they were lashed to something, possibly to the ends of long cords to form a kind of bolas, which was thrown at an animal to entangle its legs.

These objects are mostly made of limestone, and average 6.30 cm in height, 7.80 cm in diameter at their widest part and 5.50 cm in diameter at the base, which is always flat (3397; Field. 3398; Baghdad). Exactly similar stones have been found at Susa, where they seem to have been unearthed in considerable numbers (*Mém. Dél. en Perse*, I, p. 80, Fig. 108; p. 84, Fig. 117).

#### PLUMB-BOBS OR LOOM WEIGHTS Plate LXX, Figs. 19–20

No. 19, 5.20 cm long, is somewhat roughly made of baked clay; it is irregular in shape (3458; Field). No. 20 is 4.90 cm long. Its surface is of bitumen, but it is possible that the object has an inner core of some other material (3459; Field).

#### SLING-STONES Plate LXX, Figs. 21, 26–27

Sling-stones are illustrated in Plate LXX, Figs. 21, 26–27. No. 21 is 4 cm long. Nos. 26 and 27 each average about 4.90 cm in length. Each is egg-shaped and slightly pointed at one end, and all are made of unbaked clay (3122; Baghdad).

3461; Oxford). The use of sling-stones of this description appears to have extended over a long period of time in Mesopotamia; the sling seems to have been a favorite weapon both in war and in the chase. Similar sling-stones both in stone and clay were found at Abu Shahrein (*Archaeologia*, LXX, Plate VIII).

#### REEL Plate LXX, Fig. 30

The reel-like object in Plate LXX, Fig. 30, is made of baked clay. It is 5.35 cm long and 3.80 cm in diameter at its widest part. It was possibly used for winding fine thread (3305; Oxford).

#### OBJECTS OF UNKNOWN USE Plate LXX, Figs. 1-2, 4-6

Figs. 1-2, 4-6 in Plate LXX illustrate a group of objects whose use has not yet been determined. With the exception of Figs. 1-2, they are made of pottery, well fashioned, and all appear to have been in common use.

No. 1 may possibly have been a jar stand. It is 4.60 cm high and 10.10 cm in diameter. The material is basalt, and the central hole, which is 4.40 cm in diameter, shows signs of wear and even a little polish. The base is flat, and its inner and outer edges are sharply right-angled, whereas the upper portion of the object is carefully rounded both inside and out (3414b; Field).

No. 2 is made of a semi-hard stone, being 5 cm in diameter and 1 cm thick. The small hole in the center of the disk is 8 mm in diameter, and the upper and lower surfaces are slightly convex. This object may have been used as a spinning-whorl, but the hole in its center seems too large for this purpose. It would, however, be very efficient as a light mace-head (3412; Baghdad).

No. 4 is 17.20 cm long, including the projection whose end appears to have been broken off. Both ring and projection have a flat base showing no signs of rubbing and a rounded top. The hole in the center of the circular portion is 6 cm in diameter and slightly worn (3438; Field). What may be a similar object was found by Dr. Campbell-Thompson at Abu Shahrein (*Archaeologia*, LXX, Plate X [B]).

No. 5, which is 8.40 cm. high, is composed of a light yellow ware, now in a very soft condition. In appearance it resembles a wheel with a well-pronounced hub on either side, but it is doubtful if it could ever have been used for this purpose, especially as its hole is conical. The circumference of this object has been damaged all round (3379; Baghdad).

No. 6, which is 14.80 cm in diameter, is another wheel-like object, whose conical hole suggests that it is scarcely likely ever to have revolved on anything. It may perhaps have been used as a mace-head, though the material of which it is made would hardly stand much knocking about (3380; Baghdad).

## IV. PERSONAL ORNAMENTS

In view of the fact that the site at Jemdet Nasr was never used as a cemetery few personal ornaments were found; for, when the buildings were burnt and deserted, their ornaments were either taken away by the inhabitants or removed in the looting that must have taken place. We were fortunate, however, in recovering a sufficient number of objects which give us an insight into what was worn at the period to which the site belongs. As most of those illustrated were found in well built rooms, they probably did not belong to the very poor. They were more likely lost or discarded on account of their broken condition than considered of insufficient value to take away.

### HAIR-PINS Plate LXXI, Figs. 8-12

These very interesting hair-pins are all made of bone. They are hand-cut; their irregularity shows that they were not made on a lathe. The majority are broken at the point, and they were very likely thrown aside for this reason.

It has been suggested that some of the articles in Plate LXXI (Figs. 1-4) are not hair-pins but needles, on account of their perforated heads. This may be so, but, on the other hand, objects that are undoubtedly hair-pins and yet were holed were found in numbers in the "A" cemetery at Kish. That Nos. 10-12 were used for the hair, there can, I think, be no question; they are of too ornamental a character to have been used for any other purpose.

It will be noticed that all the pins are short; they differ in this respect from those of later date found at Kish, which are very long. No. 10 is surmounted by what appears to be a bird's head, and in this respect resembles some of the predynastic hair-pins of Egypt. The head of No. 11 is ornamented with spiral grooves, which form of decoration is carried further in No. 12. In this latter pin, the grooves are well cut and doubtless helped to keep the pin in place in the hair.

All the pins show evidence of much use, and are highly polished. The bone of which they are made has withstood the damp and salt of the ground in which they were found surprisingly well. In fact, they are in a better state of preservation than any other objects from Jemdet Nasr, with the exception of those that are made of stone.

No. 8 has a plain rounded head with a line round it, and now measures 6 cm in length and 8 mm in diameter at the head (3089; Oxford).

No. 9 is 9.95 cm long and 1 cm in diameter. It is practically perfect (3088; Field).

No. 10 is oval in section, and now measures 4 cm in length. The lower portion of the pin is missing (3093; Oxford).

No. 11 is nearly complete and measures 5.60 cm in length. It is round in section (3092; Field).

No. 12. This pin is 9 cm long and 12.50 mm in diameter at the head. It is well made, and the spiral grooving is entirely cut by hand (3368; Baghdad).

Pieces of copper were also unearthed which might possibly be the remains of hair-pins. Unfortunately, a worse site could not have been found for the preservation of this metal, and we are quite unable to state with any degree of certainty that the inhabitants of Jemdet Nasr used copper pins for the hair. On the other hand, what may well be the head of a copper pin is illustrated in the lower right hand corner of Plate LXXV, Fig. 2. This object is spherical in shape with slightly flattened poles both of which are roughly inlaid with pieces of shell. It is 1.70 cm in diameter and made of slate. The fineness of the hole drilled through it proves that it was once affixed to a metal pin, and its form certainly suggests a pin-head (3376; Oxford).

#### BEADS Plates LXXII, Figs. 1-15; LXXV, Fig. 2

The comparatively few beads found at Jemdet Nasr had probably been accidentally lost. Only one complete string was found (Plate LXXV, Fig. 2, top row. 3133; Oxford).

On the whole, these few beads are roughly made and of little interest. Few of them attain the excellence of finish that is characteristic of the beads of later periods, probably owing to the scarcity of suitable stone in Mesopotamia precluding an extended manufacture. At this period beads, or the stones of which they were made, were not imported, as in later days. On the other hand, the dearth of materials for bead-making would have made necklaces much valued. On this account, they would either have been carried away on the persons of the people who occupied the site or else removed as loot. It should also be remembered that there were no burials—a fruitful source of beads—at the site.

The beads that were found are of the following materials: glaze, shell (rare), pink limestone, agate (rare), green felspar, alabaster, bituminous limestone, unbaked clay, brown limestone, crystal and bone. Of these the materials most commonly used were limestone, glaze, and alabaster.

Hard stones, with the exception of felspar and rock-crystal (the latter was commonly found in the shape of pebbles on the site of Jemdet Nasr), are conspicuously absent from the list of materials used. They either could not be procured or, what is more likely, no one was competent to manufacture beads from them. A very curious feature is the rarity of carnelian, a stone which may be said to have been the most favored material for beads from just before 3,000 B.C. down to comparatively modern times.

Another remarkable omission is lapis lazuli. Not a single fragment of this stone was found at Jemdet Nasr, though it is one of the materials most commonly used for beads in the "A" burials at Kish. Although former connections with Elam are proved by the resemblance of the pottery found at Jemdet Nasr to the wares of Susa and Musyan, yet lapis lazuli, which occurs abundantly in Elam, appears to have been unknown in Babylonia—at all events in the north—at that period.

With the exception of the green felspar, there must have been a striking lack of color in the stone beads worn at Jemdet Nasr, a dullness relieved, however, by the use of glaze. But this latter material, as far as we have been able to ascertain up to the present, does not seem to have been in very common use. The color seems originally to have been blue, but is now white.

The cutting even of the soft stone beads was very primitive. Their surfaces show a considerable amount of accidental faceting, and no attempt was made to attain special finish. The boring, however, was quite passable, showing that the drill was known and employed to good purpose.

A curious discovery made by Professor Langdon is a number of stone beads of a dark green color, which have been split in half longitudinally. They were found mixed with a few roughly made, disk-shaped carnelian beads which were all unbroken. The broken beads were barrel-shaped, and had all been successfully drilled, so that the drill appears not to have been the cause of breakage. They can hardly have been broken up by salt. It may be that they were placed on the lathe for a final polish and split in the process. The interior of the hole was in each case highly polished, showing that a very fine abrasive must have been employed.

Two unfinished beads were found. Though they were shaped and one even partly smoothed down, the holes had not been bored through them. In both the base is flat and the upper surface rounded. Longitudinally they are barrel-shaped. The same shape of bead, flat one side and rounded the other, is common at Mohenjo-Daro. It seems that the boring of the hole followed rather than preceded the shaping of the bead (Plate LXXV, Fig. 2).

It will be seen in the illustrations that the majority of the beads from Jemdet Nasr are ungainly in form. In fact, many of them look as if stones had been carefully selected as near the required shape as possible so as to minimize the amount of work necessary. Beads which were flatter on one side than the other so as to lie close to the neck seem to have been fashionable. Both this shape and a form of bead with both sides flattened were carried out in glaze, as also were barrel-shaped beads. The manufacture of beads from bituminous limestone, a material which occurs naturally and can also be produced artificially, was simple; for it is a soft stone and can easily be cut with a knife.

Shells were rarely bored for necklaces, and we found only one specimen (Plate LXXV, Fig. 2). It was a white shell dappled with dark red, and its apex had been cut off, and a hole bored through (3375; Baghdad). The glazed bead shown in Plate LXXII, Fig. 6, is a rough imitation of a shell carried out in a very unsuitable material (3372; Oxford).

That the people of Jemdet Nasr wore more than one string of beads is proved by the finding of a separator (Plate LXXII, Fig. 14). It is made of a wood resembling ebony, and measures 4.50 cm in length, 1.10 cm in width, and 4.50 mm in thickness. It is pierced with ten small holes to take the threads of the strings of beads (3332; Baghdad).

## PENDANTS AND AMULETS Plates LXXII, LXXIV

Pendants, which were either simple ornaments or amulets, seem to have been worn very frequently on strings of beads. The simplest of these found are shown in Plate LXXIV, Fig. 6. The second is made of bone, and the eighth of crystal (3309 and 3097; Baghdad).

Small natural pebbles were very often perforated to take a thread: for instance, the ninth in the group (3310) (see also Plate LXXII, Fig. 23. 3102; Baghdad).

Three of the group of four pendants shown in Plate LXXII, Figs. 16-19, are made of shell, a material which was rare at Jemdet Nasr (3311; Baghdad. 3331; Baghdad. 3355; Field). Each is provided with a small hole at the apex. Two of these curious amulets are also shown in Plate LXXIV, Fig. 6. No. 18 is glazed (3312; Field).

Figs. 20 and 21 in Plate LXXII are cylinder seals, which are fully discussed elsewhere. They are mentioned here, however, as they appear to have been worn on a necklace.

We were fortunate in obtaining a number of pendants which from their form were evidently definitely worn as amulets. The most curious of these are Figs. 27-29 in Plate LXXII, two of which also appear in Plate LXXIV, Fig. 6. The two smallest of these amulets are made of glazed paste, and the largest of a thin piece of mother-of-pearl with a natural curvature. Each of Figs. 28 and 29 is perforated vertically with a fine hole for suspension, or for the purpose of tying it down to a garment. Owing to its thinness, Fig. 27 could not be treated in this way, and a hole was bored through it instead (3358; Field). What these three amulets are intended to represent, it is difficult to say. They show a remarkable similarity to the inlaid heads of some of the twelfth dynasty daggers from Egypt, but it is not suggested that they were, or even could have been, used for this purpose at Jemdet Nasr. Both Figs. 28 and 29 are flat on one side and slightly rounded on the other; they average 8.50 mm in thickness (3006a; Field. 3006b; Baghdad).

The first object in Fig. 6, Plate LXXIV, may be a phallic symbol worn as an amulet. It is 2.25 cm long, and is made of aragonite (3313; Field). A very similar object has been found by Woolley at Ur.

The interesting female figure in Plate LXXIV, Fig. 6, the back of which is shown in Fig. 5, is undoubtedly an amulet. It is cut from a soft white stone, and is represented as nude, with the exception of a fillet worn round the head. Some of the hair is gathered in to a knot at the back, and a portion hangs down in what would appear to be plaits. A small hole for suspension is drilled through the figure at the nape of the neck (3315; Oxford).

What is undoubtedly a pig, shown in Plate LXXIV, Fig. 5, is cut from a piece of sandstone, and is slightly rounded on both sides. The very large hollow eye, which is quite unlike that of a pig, was doubtless once inlaid with another material. Unfortunately, the hindquarters of the animal are missing (3343;



Oxford). The pig seems to have been a favorite animal at that period; for, besides figuring as an amulet, it is represented in other connections (Plate LXXVI, Fig. 2). It was probably hunted for food. Indeed, the animal is still common in the marshes of Mesopotamia. In the filling of E-temen-ni-il, of the period of Ur-Nammu, an almost complete painted figurine of a pig was found, along with pieces of painted pottery of the Al 'Ubaid I type (*Antiquaries Journal*, 1925, p. 355).

In the middle of the group of amulets shown in Plate LXXIV, Fig. 6, there is what appears to be the figure of a bear made in slate and seated in a characteristic attitude. This figure is slightly rounded on both sides, but it seems to be unfinished as there is no hole for a cord through it (3304; Baghdad).

In the bottom row of Plate LXXIV, Fig. 6, is a representation of a bearded man with an animal's body, lying with his legs curled up beneath him. A suspension hole runs vertically through the body. This object is made of serpentine, and there appears to be a much effaced linear inscription on the back, which does not agree in style with the writing found on the tablets from Jemdet Nasr. It is possible that this figure is of considerably later date and was dropped on the site. The amulet is 4.20 cm long, 2.50 cm high, and 9.50 mm thick (3308; Baghdad).

The object in the lower right-hand corner of Plate LXXIV, Fig. 6, is also shown in line as Fig. 15 in Plate LXXII. It is made of bone with a hole for suspension and represents a bird with a broad flat tail (3314; Baghdad).

Another amulet found at Jemdet Nasr is 3.60 cm long, and represents a fish with a big dorsal fin. It is somewhat roughly cut with no details beyond the outline. A small suspension hole was bored through the nose of the fish (3440; Oxford).

The two curious beads illustrated in Plate LXXIV, Fig. 8, one of which is also shown in Plate LXXI, Fig. 13, should perhaps be regarded as amulets. Both are of bone and exceedingly well made and finished. They are incised with zigzag lines set close together. A small hole runs longitudinally through the center of each, evidently for a thread; and the boring of a hole through an object of such length, even if done from both ends, argues a certain amount of skill. Beads of this description were unknown in the "A" cemetery at Kish and in later times. They may therefore afford valuable evidence for dating other mounds (3091; Oxford. 3120; Field). A very similar bead to these was found in a rectangular shaft excavated in the "A" mound at Kish and mentioned on page 115 of this volume.

Figs. 14, 16-18 of Plate LXXI, two of which are pictured in Plate LXXIV, Fig. 4, seem to have been used as beads. They are either plain or have a shallow spiral line running round them. These objects were found in considerable numbers at Jemdet Nasr, and also in a very early building at Kish, as yet unpublished (see Map of Kish, this volume, No. 2). The spiral markings are explained by these beads being originally made in shell. The specimens from Jemdet Nasr are always made of fine baked clay, but the spirals were retained in imitation of the

originals. Two reasons suggest themselves for the substitution of clay for shell—either the latter material was no longer procurable, or it was too expensive to be used by ordinary people. These clay beads always have a fine longitudinal hole, which was probably made by the bead being formed around a length of straw or fiber, which burned away when the bead was baked (2596, 3306; Baghdad. 2599; Field. 2597; Oxford). These clay objects appear to resemble some found at Ur at a very early level (*Antiquaries Journal*, Vol. IX, p. 329).

EAR OR NOSE ORNAMENT Plate LXXI, Fig. 15

What might be an ornament either for the ear or nose is shown in Plate LXXI, Fig. 15. This object, which is 5.60 cm long and 9 mm thick, is nearly flat on one side and highly rounded on the other. It is made of slate (3087; Field).

## V. CULT OBJECTS AND PLAYTHINGS

### CULT OBJECTS Plate LXX, Figs. 10-14

The curiously shaped object, Fig. 10, is included in this chapter on the ground that it may possibly be a phallic symbol. It is 17.60 cm long and 4.45 cm in width at its widest part, and is roughly made of baked clay. It is round in section and tapers gradually toward the top which is slightly flattened. The base is flat with a slight hollow in the center (3409; Field).

Pottery cones, such as Figs. 11-13, were a common feature at Jemdet Nasr. They are all made of baked clay, are very irregular in shape and round in section, with either a flat or a rounded base. They average 8 cm in height and 2.10 cm in diameter at the widest part. The top of Fig. 11 has been carefully smoothed off, and the upper portion of Figs. 12 and 13 neatly pared with a knife or other instrument. Pottery cones similar to these have been found at Abu Shahrein in 1918 (*Archaeologia*, LXX, Plate X), at Ur (Ur Excavations [Al 'Ubaid], Plate XV), and at Mohenjo-Daro and Harappa in India, where they were found in very large quantities. Their exact use is an enigma. They were certainly not used for wall decoration, being too small for the purpose.

Fig. 14 is difficult to explain. It is 5.70 cm in diameter at the base and 5.40 cm high. It is hand-made and of baked clay (3462; Field).

### GAMESMEN Plates LXX, Figs. 18, 22, 28-29; LXXI, Figs. 19-27; LXXIV, Fig. 7

Fig. 18 in Plate LXX is made of limestone in the shape of a truncated cone, measuring 4.05 cm and 2.30 cm in diameter at the base and top respectively, and 1.55 cm in height (3404; Field).

Fig. 22 also appears to belong to a game, though the shape is very different. It is well made, of a black stone veined with white, and measures 2.90 cm in diameter and 1.65 cm in height (3356; Oxford).

Figs. 28 and 29 are somewhat similar to Fig. 22, but taller. They are both made of baked clay; the first (3059; Field) is 4.30 cm high, and the second 3.70 cm high.

The interesting objects shown in Plate LXXI, Figs. 19-27, some of which also appear in Plate LXXIV, were very common at Jemdet Nasr. Specimens were found all over the site. They are obviously gamesmen, despite the fact that they take a number of different forms.

The two specimens shown in Plate LXXI, Fig. 19, are made of brown sandstone. One is 2.60 cm high and 2 cm in diameter (3338; Baghdad). The other is 2.50 cm x 2.20 cm (3339; Field). Both are very well made with perfectly flat base and rounded top.

Two very interesting pieces are shown in Figs. 20 and 21. Each is beautifully made of slate in the shape of a four-sided pyramid on a flat square base.

Fig. 20 is 4.50 cm high, and its base is 2 cm square (3337; Field). Fig. 21 is 1 mm higher, but its base is the same size (3336; Baghdad). Pyramidal gamesmen with three sides and a base have been found in the Royal Tombs at Ur by Woolley. Very much the same type of piece is known at Mohenjo-Daro, but with the sides and base of equal size.

Another form is similar to a modern halma-piece (Plates LXXI, Figs. 22-23; LXXIV, Fig. 7). A considerable number were found, and they vary but little in size, averaging 2.50 cm in height with a small flat base. These also were made of slate. Yet another form (Plates LXXI, Fig. 24; LXXIV, Fig. 7) had a rounded base and conical top; it was made of slate, or of white or pink limestone. The rounded base would preclude these pieces standing on a hard surface, but they could be used on sandy or dusty ground.

Figs. 25-27 illustrate another, very common form, which has a rounded base and is flat in section (see also Plate LXXIV, Fig. 7). Pieces of this type could hardly have been intended to stand, and it is possible they were made to be thrown, the scoring depending on the direction toward which the narrow end pointed. Both slate and limestone specimens have been found.

In these gamesmen we see a very human side of the inhabitants of Jemdet Nasr. That the games played with these pieces were extremely popular is proved from the great number found. Moreover, the finish of practically all of them is extremely good.

#### ANIMAL TOYS Plate LXXIV, Figs. 2-3

Not many toys were found at Jemdet Nasr, perhaps for the reason that they were made of clay that was not baked and were therefore unable to resist the dampness of the soil. Fig. 2 in Plate LXXIV must be taken to represent a dog rather than a lion on account of its tail. It is of baked clay, being 7.20 cm high. This figure is well modeled, and the slight swelling at the neck is suggestive of the ruff which is seen round the necks of some of the present native breeds of dog. In fact, we have here the short stocky animal that is so often found among the sheep-dogs of Iraq (3123; Baghdad).

The head in Fig. 3 measures 7.55 cm across, and is of pottery. It shows the long forward-reaching horns of a cow rather than of a bull. Unfortunately, the body of this animal was never found (3100; Baghdad).

The small figure at the top of Fig. 3 is 3.10 cm long. It apparently represents a dog, but as it is made of unbaked clay, it has suffered somewhat from the damp (3119; Baghdad).

The lower figure is 6.40 cm long. This also is of unburnt clay, and is somewhat weathered on one side. It again is obviously the figure of a dog (3116; Oxford).

Other animal forms that were found at Jemdet Nasr were in all probability used as amulets, and not playthings; they are described elsewhere.

## VI. STONE AND METAL VESSELS

### STONE Plate LXVII, Figs. 34-40

The number of stone vessels found at Jemdet Nasr is very small, a possible reason being that they were removed when the building was sacked. A few, however, are shown in Plate LXVII, Figs. 34-40.

A striking feature of these vessels is their extraordinary thickness, which was unnecessary and must have added greatly to their weight. It is particularly noticeable in the deeper jars and suggests that great difficulty was experienced in drilling out their interiors. In Fig. 35 the grinder has left a great deal of horizontal grooving, which no attempt was made to remove.

It will be noticed that Fig. 35 has four lugs perforated horizontally. It is indeed very similar in shape to the four-lugged pottery. Fig. 39 has a pair of ledge-handles on opposite sides of the neck, a feature that also occurs in a fragment of pottery found on the site, which once must have belonged to a pottery vessel. This handle is shown in Plate LXX, Fig. 3, but the stone specimen lacks the curious projecting portion of the pottery handle.

The following detailed description of the stone vessels is given for reference:

Fig. 34. Porphyry. Broken and repaired. A very simple dish, well made, and possibly used for a cosmetic (2958; Oxford).

Fig. 35. Limestone. Has four lugs. Well finished outside, but inside roughly bored. It is possible that it is unfinished (3367; Baghdad).

Fig. 36. Gray granite. Several pieces missing (3377; Field).

Fig. 37. Hard gray stone. Found broken with fragments missing. Very clumsy in shape. Interior is just a straight boring (2959; Oxford).

Fig. 38. Limestone. Partially burnt. Very thick and clumsy. A curious feature is the banded rim (3043; Field).

Fig. 39. Limestone. Found broken and pieces missing. The straight neck is ornamented at intervals with sunken metopes somewhat roughly cut. Two ledge-handles on opposite sides of the neck. Very much blackened by fire (3410; Field).

Fig. 40. Calcite. Found broken and pieces missing. Bowl-shaped, thick and heavy for size (3470; Field).

It will be noticed that, with the exception of Figs. 36 and 40, none of these stone vessels resemble those found in the "A" cemetery at Kish (Plates LV, LVI, of this volume) nor can they be compared with any of the pottery from that site. It seems evident that at the period during which these jars were made stone-working presented some difficulty to the craftsman; though he had acquired sufficient proficiency to decorate a stone jar on the outside, he was still unable to shape its interior properly. Stone vessels with thick sides and base are also

common in the archaic graves of Al 'Ubaid (Excavations at Ur [Al 'Ubaid], Plate LXII).

METAL Plate LXXI, Fig. 31

Only one metal vessel was found, a shallow copper dish, which is 9.70 cm in diameter and 2.70 cm high. It has a peculiar incurving rim and a well formed base (2957; Baghdad).

## VII. SEALS

### CYLINDER SEALS Plates LXXII, Figs. 20-21; LXXIII

A considerable number of cylinder seals, the majority in good condition, were found on the Jemdet Nasr site. All are short and straight-sided, and in some cases the diameter exceeds the length, whereas the cylinder seals found in the "A" cemetery at Kish are in most cases considerably longer than they are thick. The shortness of the Jemdet Nasr seals recalls the form of the very early cylinder seals of Egypt, though the designs differ.

The seals are most frequently made of a comparatively soft stone, and it is of interest to note that only one specimen has been found of shell, a material very commonly met with in the early cemeteries at Kish. Though shell was known to the people of Jemdet Nasr, especially mother-of-pearl, its value for seal-cutting was apparently not fully realized.

Of the twenty seals found, nineteen are illustrated in Plate LXXIII. The remaining one was in too poor a condition to make a satisfactory photograph or even to make an impression. The stone most frequently used is limestone, of which twelve seals are made, five of a pinkish variety of the stone. Three are of marble of either a dingy white or gray color, and three of a coarse kind of alabaster. One seal is of glaze, and another of a hard dark-colored stone which it is difficult to identify.

All the seals are of primitive workmanship, and the art of seal-cutting was evidently not very far advanced. One would have expected that people who were capable of producing such beautiful and well-finished pottery as was found at Jemdet Nasr would and could have produced finer work in their seals. It is possible that the demand for seals at this early time was not very great, for the reason that, as shown by the tablets, the art of writing was just emerging from its infancy. As writing improved and spread, so would the demand for seals increase, with the result that more people would be employed in seal-cutting and better work be done.

The smallest seal found is 1.20 cm long and 1.40 cm in diameter, and the largest 2.30 cm long and 1.90 cm in diameter. Every seal is perforated, or it was intended to perforate it, to take a cord, with the exception of the two shown in Plate LXXIII, Figs. 30 and 31, each of which has a perforated lug at one end. The holes through the seals vary in diameter from 3 to 4 mm, and some of them show a considerable amount of wear through friction of the cord. As the greater number of the seals are made of comparatively soft stones, the holes were bored without difficulty; it seems to have been done from both ends, though the shortness of the seals would have easily permitted of their being bored from one end only.

Two seals, which were otherwise finished, were not bored through. Fig. 21 in Plate LXXIII has a small hole, 3 mm deep, at one end; and at the other end a tapering hole, 13 mm deep and 7 mm in diameter on the outside. This seal, which shows signs of much use, must have been fixed in a holder of some kind. The hole

through the seal shown in Figs. 9 and 29 was bored from both ends, where it is 9.50 mm in diameter. The middle of the hole is only 2.50 mm in diameter. It is possible that the ends of this seal were capped, possibly with gold, the metal being also used to fill in the deep lateral grooves flush with the face.

All the seals appear to be hand-made; they show no evidence of having been made on a lathe. Despite this fact they show a remarkable regularity, especially in the case of the harder stones, which was doubtless effected by rolling the seal along a groove in an abrasive.

As two seals were found, as mentioned above, which had not been completely bored through, though they were otherwise finished, it seems that the process of boring was performed last, and that the partially completed seal was not rounded by threading it and then rolling it. Some of the holes are worn at the edges, probably by the friction of the cord on which they were carried. But, on the other hand, some of the holes show no signs of wear whatever, an additional proof that unless the ends were trimmed down after the completion of the seal, the hole played no part in the making of the seal. It is possible that these seals were made from blocks of some length, which were cut into sections. If this be so, the supposition that the boring of the hole was the last stage in the making of a seal is all the more likely. The fact that the hole is always in the center of the seal shows creditable craftsmanship; for it is, of course, easier to make the seal true with the hole through it by the rolling or sliding method of shaping than to make the hole accurately through the center afterwards.

The designs on the seals, as will be seen from the plate, show no great variety. The favorite motive is the file of animals, all, it should be noted, facing one way. These animals are difficult to identify—they seem to be antelopes, but of what species it will be the task of a zoologist to determine. It will be noticed that they are represented sometimes as running, sometimes at rest. They are doubtless arranged in file primarily to suit the shape of the seal, but also owing to the artist's lack of knowledge of perspective. It should also be borne in mind that antelopes when frightened and on the move invariably appear from a distance to be in file. It is a moot point whether the animals represented on these seals are domesticated or wild. Some species of antelopes are capable of domestication, as, for instance, the eland of South Africa.

Seal 1 in Plate LXXIII is exceptionally interesting, because it shows how the designs were cut. They were probably first drawn on the seal and then marked out roughly with drill holes. Then the holes, which vary in size and depth according to the parts of the animal, are linked up by means of a chisel or similar instrument until the whole of the outline has been cut. The chisel would invariably leave a considerable amount of roughness, and in most of the seals this appears to have been removed by means of an abrasive. In a well worked seal the chisel marks and drill-holes entirely disappeared, the surface of the cutting being left as smooth as the surface of the seal, and in some cases actually polished. The abrasive used may have been emery; it was possibly applied with a small copper or wooden tool with a rounded point.



Seals 5-6 and 20 are somewhat difficult to interpret. Fig. 20 is perhaps the clearest; it apparently represents a shoal of fish. The objects depicted have been identified by some as lice. I think, however, that fish are more probable. Seal 5 evidently has the same motive, but the figures resemble turtles rather than fish. In Fig. 6 the detail is more clear, but still it is quite impossible to say whether we have here fish, flesh, or fowl. Fig. 21 is yet more elaborate, and the position of the objects in the upper and lower rows is reversed. They possibly represent an animal with two legs and two wings, perhaps an ostrich.

Every seal, it will be seen, is bordered with a line above and below, which in the majority is very roughly cut. Not one seal with a double register was found in the site, though this type of seal is common in the later periods. The reason is doubtless the shortness of the seals of this early period. The art of seal-cutting and designing shows a great advance in later periods; as, for instance, at the period of the "A" cemetery at Kish.

A noteworthy feature of the Jemdet Nasr seals is the comparatively large proportion which bear geometric designs, based, however, on natural objects. At least six out of the twenty found are of this description (Plate LXXIII, Figs. 7-8, 10, 16, 22-23). Fig. 7 appears to represent a group of trees with a border on one side. Fig. 8 resembles a very much conventionalized animal form with the addition of two intertwining lines. Figs. 10 and 16 are obviously purely geometrical, and the origin of their designs has disappeared. The motive of the latter seal somewhat resembles a design found on some of the pottery, but the absence of a midrib precludes this design having been derived from a palm leaf. In Fig. 22 we definitely have the representation of an animal of some kind, but regularly placed and set in panels separated by fine lines. The design of Fig. 23 probably represents human figures arranged in groups of two. This seal is peculiar in that its design is set at right angles to the axis of the seal, a feature which is also known in a seal found in the "A" cemetery at Kish, pictured in Plate XLI, Fig. 9, of this volume.

#### PRESS SEALS

Six press seals were found, five of which are pictured in Plate LXXIII. The remaining one was too badly worn to be reproduced successfully. Two of these seals were made of baked clay, two of limestone, one of which is pinkish in color, one of shell, and the last, which is badly worn, of alabaster. The designs are of a very simple nature, the most complicated being that in Fig. 14, which appears to represent a group of animals. Compare this design with that on a press seal found at Musyan (*Mém. Dél. en Perse*, VIII, p. 4, Fig. 7). These seals are invariably roughly made; they are round or slightly oval in form with a flat or slightly convex base and a domed top. Each has a hole for suspension. Press seals of this kind are common in the lower levels of Susa in Elam, and most of them resemble in form, technique, and, in many cases, design, those from Jemdet Nasr. All appear to have been made by the same people.

Fig. 11 is of unusual form. It is made of shell in the shape of a pig(?) or hedgehog(?), and was probably carried on a necklace. It is 2 cm long, and its base is flat

with four pits in it for the seal mark. The two eyes of the animal seem once to have been inlaid (cf. Delaporte, *Catalogue des cylindres orientaux*, I, Plates 1, 8a-b, and II, 4-5, 7).

The design shown in Fig. 25 is most peculiar; it seems to have some affinity with the svastika, except that it has three fringed arms instead of four simple ones (cf. *op. cit.*, I, Plate XXVII, No. 13). (Compare also with Plate XLII, Fig. 7, of this volume.) Fig. 15, though exceedingly simple, is a very effective design for a seal. A design such as this, simple though it may be, is, when made by hand, exceedingly difficult to forge; it is, therefore, in this respect, quite as effective as a more elaborate design. Simple hatching such as this is known on some of the archaic seals from Elam. (*Mém. Dél. en Perse*, XVI, Plate I, Fig. 1; Delaporte, *op. cit.*, I, Plates 38, 49, and 61.) The device also is seen on a certain type of seal from Mohenjo-Daro.

### LUGGED SEALS

Only two of this variety of seal were found (Plate LXXIII, Figs. 30-31). They are actually cylinder seals with the addition of a small perforated lug at one end to take a cord, and they were most likely worn on a necklace. Their designs are shown in Figs. 16-17. Nothing quite like these two seals has been found in later times in Mesopotamia. There is an unpublished specimen from Egypt that resembles them in the Edwards' Library at University College, London, dated to the late predynastic period. Two seals of this type are illustrated in Delaporte, *op. cit.*, I, Plates 19, Fig. 3b; 37, Fig. 6a. A similar seal may possibly be represented in Plate 63, Fig. 3a. All these seals were found in early levels at Susa.

These two seals from Jemdet Nasr are made of limestone: one is of a pinkish tint, and the other white. They are drawn full size in Plate LXXII, Figs. 20-21. If this form of seal eventually proves to be confined to one period, it will be invaluable for dating purposes, for by its nature it would not easily be destroyed.

The most interesting of the cylinder seals are those bearing human figures (Figs. 9 and 24). Fig. 9 is made of brown limestone, and is divided by deep grooves into three compartments, which is a most unusual arrangement in a cylinder seal. The design is also peculiar on account of the reversal of one of the scenes, which can hardly have been unintentional. The motive is the same in the three compartments—a woman seated on a mat making bread (cf. an almost identical one found at Susa in *Mém. Dél. en Perse*, XII, p. 105, Fig. 96; also a seal in the Louvre in Delaporte, *op. cit.*, II, Plate 69). That the figure is a woman is indicated by the length of the garment worn. Fig. 24 is of pink limestone and represents a procession of men or women, each carrying a long staff with a large round head and a weight near its foot (cf. Delaporte, *op. cit.*, II, Plate 69, Fig. 5). This object may have been used for crushing barley like the long pestle used for this purpose in modern Mesopotamia. The object on the head of each of the figures may represent a wig or hair with a cue hanging behind. (Compare with

Plate LXXIV, Fig. 5 [No. 3315].) It is impossible to say whether the figures are male or female, but the latter seems probable.

Two pieces of stamped unbaked clay were found at Jemdet Nasr, which evidently once belonged to one another, though they cannot now be made to fit. They are shown in Plate LXXVI, Fig. 13. These fragments appear to have been used to test a cylinder or a stamp seal, judging from the repetition of the impressions. An interesting feature about these impressions is the cross-patée motive, which is not found on the painted pottery from Jemdet Nasr, but does repeatedly occur on the wares of Musyan and Susa. For early seal impressions from Elam in which this motive appears, see *Mém. Dél. en Perse*, XVI, Plate III, Fig. 48. Also Delaporte, *op. cit.*, I, Plate XVI, Fig. 12.

### TABULATION OF SEALS

The seals in the appended list, as stated before, are all represented in Plate LXXIII, with the exception of the last one which was in too bad a state to reproduce. The registered number of each is given and also the museum to which it was sent.

#### CYLINDER SEALS

- Fig. 1. 23 x 19 mm. Limestone. Long-horned antelopes in file (3064; Oxford).
- Fig. 2. 16.50 x 14.50 mm. Alabaster. Antelopes in file, crudely portrayed as running (2580; Oxford).
- Figs. 3 and 28. 21.50 x 19 mm. Marble. Antelopes in file with long horns reaching well over the back (2578; Baghdad) (cf. Delaporte, *op. cit.*, I, Plate XXV, Fig. 7).
- Fig. 4. 16.50 x 17.50 mm. Pink limestone. Antelopes running through a thicket (?) (3357; Oxford).
- Fig. 5. 13 x 10 mm. Alabaster. Shoal of fish (?) (3109; Baghdad).
- Fig. 6. 15.50 x 14 mm. Limestone. In compartments not separated by lines—two fish (?), two unknown objects, followed by two antelopes running (?) (2575; Field).
- Fig. 7. 15 x 11 mm. Alabaster. Trees (?) separated by a ladder partition (3131; Baghdad). For a similar partition see Delaporte, *op. cit.*, I, Plate I, Fig. 11.
- Fig. 8. 18.50 x 16 mm. Gray marble. Two wavy lines crossing one another at intervals, enclosing a line of beads. Rough bead-like design above and below this central motive. The design may possibly represent a number of fish caught in a net (3302; Oxford).
- Figs. 9 and 29. 19 x 21 mm. Brown limestone. Divided into three compartments by deep grooves. Female figure in each seated on a mat making bread (2579; Oxford).
- Fig. 10. 12 x 14 mm. Broken zigzag line between two straight lines also broken (3130; Baghdad).
- Figs. 16 and 30. 15 mm long, with loop 20 mm long. Diameter 11 mm. Limestone. Chevron lines rather roughly cut (2583; Field). Cf. Delaporte, *op. cit.*, I, Plate XIII, Fig. 1.
- Figs. 17 and 31. 13.50 mm long with loop 20 mm long. Diameter 10.50 mm. Pink limestone. Antelopes with long horns running in file (3129; Baghdad).
- Fig. 18. 22 x 19 mm. White marble. Antelopes without horns running in file (3341; Field).

- Fig. 19. 15 x 14.50 mm. Dark limestone. Procession of long-horned antelopes in file (3036; Field).
- Figs. 20 and 27. 21.50 x 16 mm. Pink limestone. Fishes (?) arranged in three rows (3005; Baghdad).
- Fig. 21. 19.50 x 14 mm. Limestone. Unfinished. Design of fishes (?), an octopus (?), and ostriches (?) (2577; Baghdad).
- Fig. 22. 20 x 16 mm. Dark limestone. In compartments divided by vertical lines. Each compartment contains two objects difficult to identify, but which may be running antelopes (2576; Baghdad).
- Fig. 23. 20 x 14 mm. Hard black stone. Rough representation of trees or even possibly human figures, arranged lengthways (3342; Oxford).
- Fig. 24. 22.50 x 24 mm. Pink limestone. Procession of women (?) in long robes, each carrying a staff, or perhaps women crushing barley (3301; Baghdad).

## PRESS SEALS

- Fig. 11. 20 mm long. Shell. Flat base with four rough pittings (2584; Baghdad).
- Figs. 12 and 13. 18 mm long, 9 mm high. Limestone. Plain crossed lines (3132; Baghdad).
- Fig. 14. Base 26 x 28 mm, 12 mm high. Baked clay. Figures difficult to identify (3303; Field).
- Fig. 15. 31 mm in diameter, 19 mm high. Pink limestone. Base slightly convex (3086; Baghdad).
- Figs. 25 and 26. 40 mm in diameter, 23 mm high. Baked clay. Face slightly convex. Design sharply cut with a knife or similar instrument (2581; Baghdad). Compare with Plate LIX, Fig. 11, of this volume.
- Not illustrated. 38 mm in diameter, 23 mm high. Alabaster. Face slightly convex. Back highly rounded. Design a series of irregularly placed pittings (2582; Oxford).

## VIII. CONCLUSIONS

There can be no doubt that the culture which produced the pottery and other small antiquities of Jemdet Nasr was closely akin to that of the lower levels of Susa and of Musyan. The design on the seal seen in Plate LXXIII, Fig. 9, has an almost exact counterpart on a seal from Susa; and this motive is so unusual that it could not have been employed in two separate countries unless there were some connection between the peoples inhabiting them. Also, the two lugged seals found at Jemdet Nasr are of a very unusual type, yet we find that this form of seal was in use in the earliest period of Elam. And again, certain very curious press seals, of which the back is carved in the shape of an animal and the face is frequently very roughly incised, are a feature of early Elam. It was, therefore, interesting to find a seal of the same type (Plate LXXIII, Fig. 11) at Jemdet Nasr, with, moreover, similar pitted marks in its face. These circumstances alone prove definitely, I think, that the inhabitants of Jemdet Nasr and of early Elam were very closely connected; if, indeed, they were not the same people.

Another interesting point of resemblance lies in the technique employed in working vessels of stone. Unfortunately, but few of these were found at Jemdet Nasr, and we cannot, therefore, safely draw parallels between their shapes and those found in Elam. But the thick and clumsy nature of these utensils was duplicated in early Elam and also among stone vessels found in the Al 'Ubad cemetery II.

Other points of resemblance occur in the shapes of several types of pottery vessels found at the three sites. The thick red slip that is so characteristic of the painted ware of Jemdet Nasr is also seen on similar jars from Musyan.

I have already pointed out that although the painted pottery of Jemdet Nasr is probably of rather later date than that of Musyan and Susa II, the similarity of some of the motives employed in the decoration of all three wares also strongly suggests that they were made by people who were closely allied by race.

It is not only in the seals and pottery that parallels are found with Elam, but in other objects also. The very curious stone objects shown in Plate LXXV, Fig. 5, which are thought to be bolas balls used in hunting game, have also been found at Susa. So unusual are they in shape and grooving that they again could hardly have been invented independently; they alone would prove connection between the two sites.

The curious spatula-like objects shown in Plates LXXI, Fig. 29, and LXXV, Fig. 8, have been found also at Susa. The Jemdet Nasr specimens were, however, of hard baked pottery, and those at Susa of copper. But the similarity of shape again indicates a connection; the Jemdet Nasr examples are probably only models.

The only point of contact that I can find between the wares of Susa I and the period of the "A" cemetery in Mesopotamia is that among the designs on some of the cups from Susa I (*Mém. Dél. en Perse*, XIII, Plates V, Figs. 1, 3 and 6; VII, Fig. 7), there occur curious wand-like objects exactly similar to the copper wands

found in the "A" cemetery at Kish (this volume, Plates XVII, Figs. 5-6; LXI, Figs. 2-4, 10-11). Even the notched ends of these wands are carefully delineated on one of the cups (Plate LXIX, Fig. 7). There is therefore no doubt that this very curious implement of warfare or the chase was in use both in the early Susian period and later at Kish; and if the painted pottery of Susa I is greatly anterior in date to the Kish cemetery, these copper wands must have been used over a very long period of time.

The motive of animals in file is a common one on the Mesopotamian seals of very early date. In some cases the arrangement of the legs of these animals is remarkable; and this is so on seals from both Kish "A" and Jemdet Nasr. In Plate VI, Fig. 2, of this volume, two antelopes are seen, each with its legs bent in a curious way beneath it—whether represented as running or resting on the ground is a moot point; and exactly the same posture is seen in Plate LXXIII, Fig. 2, of this volume. It should not be forgotten, however, that seals may have been re-used, especially in early times when they commonly bore no inscription. Presumably there was nothing to prevent a seal being picked up at Jemdet Nasr or elsewhere and used again at a later period; it may have been by some one who was ultimately buried in the "A" cemetery. There are, it appears, no antelopes so portrayed on the early seals of Elam.

From the style of painting Woolley dates the Jemdet Nasr pottery before the time of the "A" cemetery at Kish. In this he is right. The thick red slip, the small perforated lugs, and in some cases the shapes of the vessels prove the pottery of Jemdet Nasr to be near in date to the Musyan and Susa II pottery. How near in date the Jemdet Nasr period comes to the Kish "A" period, it is at present impossible to say. Personally, I am of opinion that a somewhat lengthy period must have elapsed between the two, for the Kish cemetery overlay a large building whose plano-convex bricks and architectural features show it to be Sumerian in origin. This palace had fallen into decay before its site was used as a cemetery, and on a conservative estimate we should, I think, allow at least three hundred years between the dates of the building and of the cemetery. Only two small fragments of painted pottery were found in the chambers of the palace and they lay at a much higher level than the flooring of that building, so that they must be regarded as accidental. Nor are we at all sure that the palace in the "A" mound marks the beginning of the Sumerian civilization in Babylonia. It seems to have been too well built; and the use of round brick columns in its construction establishes an advanced civilization.

It is much to be regretted that no burials were found at Jemdet Nasr; but as that site was very much denuded, it is probable that the graves which must once have existed in the vicinity have disappeared from the same cause. Even with the smaller number of objects found—burials would undoubtedly have yielded more material—we are able to prove an advanced chalcolithic civilization in Babylonia at that very early period. The occupants of that site knew and practised the art of writing, employing the clay tablet as a medium. They were acquainted with weaving, as shown by the number of spindle-whorls that were found; the

small size of some of these suggests that it was a fine thread that was spun, but it may have been either cotton or flax. Cotton is quite possible as this fiber was in use in India, in or before this time.

The fact that fishing was an industry is proved by the well-made fish-hooks that were found, each with efficient barb and shank. The hunting of game is suggested by the motives on some of the cylinder seals and by the occurrence of what may be bolas balls. The inhabitants of Jemdet Nasr knew the art of working copper and made well shaped and efficient implements of warfare in that metal, as well as metal vessels.

The art of brick-making was well advanced, and efficient bricks, both in size and shape, were used in buildings that compare favorably with those of considerably later date. In fact, the bricks of Jemdet Nasr are actually superior to any others made in pre-Sargonic times. The masonry of the building or buildings at Jemdet Nasr was exceptionally good, and the alignment of their walls remarkably accurate. Such refinements as pottery gutters to carry off rain bespeak an advanced state of civilization, and baked bricks were used to pave some of the rooms.

In the working of stone, however, the people of Jemdet Nasr were not so proficient. Flint implements were limited to the roughest of agricultural tools and a few flint flakes; but it is possible that no use was found for them as the working of metal was so far advanced. Finely worked flint implements, such as arrow-heads, would seem to be associated only with the earliest type of painted pottery, as in the first period of Susa. That great difficulty was experienced in working stone is more conclusively proved by the crude manner in which stone vessels were hollowed out, though it must be confessed that the outsides of these vessels were on the whole well done. The degree of a man's skill in stone-working is perhaps best illustrated in the making of smaller articles, such as cylinder seals; and the seals found at Jemdet Nasr are very primitive both in design and execution.

That agriculture was practised is proved by a store of wheat (*Triticum vulgare* or *T. compactum*) discovered by Professor Langdon, which, though badly carbonized, is still readily recognizable. According to Professor Percival, the wheat found at Jemdet Nasr is *Triticum turgidum*. The professor states that the seeds are small, dark red, with blunt ends and that they have a dorsal hump characteristic of this species. It is the most prolific of all the numerous kinds of wheat and its straw is rank and extremely tall. (Letter from Professor Langdon, the *London Times*, Jan. 29, 1927.)

The craft in which the people of Jemdet Nasr chiefly excelled was the manufacture of pottery. They used the wheel and produced pottery that compares favorably with that of later periods, both in form and in the use of colors and colored slips for its decoration, an art which disappeared early in the history of Babylonia.

Judging from the figure in Plate LXXIV, Figs. 5-6, the women seem to have worn their hair in plaits down the back. This would explain the shortness of the

few hair-pins found, compared with the long pins which were used at a later period to keep the hair piled upon the head.

A certain amount of jewelry was worn, but it does not compare favorably with that of the later periods. The art of glazing was practised; and beads made of this material and used in conjunction with green felspar provided a certain amount of color, but the majority of the stones used were dull and uninteresting in nature with the exception of crystal, which was evidently well known. Amulets were, of course, greatly worn, as is common to all Eastern peoples, and they show an interesting diversity of form.

In their pleasures the people of Jemdet Nasr were probably very simple. The children played with model animals made of baked or unbaked clay, while the older people appear to have whiled away their spare time with games whose pieces resemble draughtsmen and skittles.

These various accomplishments place the people of Jemdet Nasr on a level with the present Arab tribesmen of Iraq. They would seem to have been long established in the land; they were not wandering pastoralists constantly on the move and requiring utensils that were not easily broken or damaged.

We now find ourselves face to face with the exceedingly difficult problem of the race to which the inhabitants of Jemdet Nasr belonged. Were they Semitic, Sumerian or another stock? Before attempting to answer this question, it should be remembered that the crude mud bricks of the buildings at Jemdet Nasr were of unexpected size and shape. Instead of being an early form of the plano-convex brick, which has hitherto been thought by archaeologists to be the earliest type of brick used in Mesopotamia, we found bricks of rectangular shape with flat base and top, measuring either 20 x 8.50 x 8 cm or 23 x 9 x 6.50 cm. Of the former size, both baked and unbaked bricks were found, and of the second, which was probably used for tiles, only baked specimens were found.

A very noticeable feature of the burnt bricks was a series of three holes running diagonally through every one of them (Plate LXX, Fig. 25), whether used in wall or pavement. The holes were made with a stick, and are fairly regular, averaging 1 cm in diameter. The bricks are well made with the sides narrowing slightly toward the top; they were shaped in a frame mold.

A few larger bricks of a different type were also found in the mound. These measure 29 x 16 x 5 cm, are baked, and bear on the under side the impression of the reed matting on which they were made, as is the case with Nebuchadnezzar bricks. These larger bricks also are perforated with three holes.

The presence at Jemdet Nasr of these well made rectangular bricks with the upper surface perfectly flat raises the question why this type of brick gave place later to the less efficient plano-convex type. It is possible, of course, that the two patterns were used side by side; but if so, they would probably have been found together at Jemdet Nasr, which was not the case. Are these very early rectangular bricks, then, the product of entirely different people from the Sumerians as we know them at Kish and elsewhere? From the striking evidence we have before



us in the shape of the bricks they used and the pottery they made, it would seem so. It is possible to see in the building and objects found at Jemdet Nasr traces of a people who may have inhabited Babylonia and Elam before the arrival of the Sumerians; the latter would seem to have been at first less cultivated in some respects than the people of the country they entered.

A very striking feature of the numerous tablets found associated with the painted pottery at Jemdet Nasr is that they are inscribed with extremely archaic characters, that I am assured by Professor Langdon are Sumerian. If this be so, it should follow that the people who wrote these tablets were also Sumerians. Of what race, therefore, were the invaders who introduced the plano-convex brick and apparently adopted the writing of the people that they conquered? We have no evidence that they were Semites; indeed, later inscriptions prove the contrary. The fact that the use of the plano-convex brick extended over a considerable period of time proves that the occupancy of the country by the people who introduced it was also a very long one.

Before weighing up these considerations, there are still other problems to be noted. Among the beads found at Jemdet Nasr, carnelian was very rare and lapis lazuli was entirely absent, but we have proved from the "A" cemetery at Kish that both stones were extremely common at a later date, approximately 3000 B.C. or a little earlier. The inhabitants of Jemdet Nasr were not distinguished by the good quality of the beads they made, whereas the people of the "A" cemetery at Kish produced or imported beads of very fine workmanship. Again, shell, which was extremely common in the "A" cemetery, was rare at Jemdet Nasr. Only one cylinder seal made in that material was found there, though shell was by far the most popular material for seals during the later periods. The art of glazing beads and other small objects seems, however, to have been common to both places.

Except for a few details, the pottery from Jemdet Nasr does not resemble the pottery of the "A" cemetery at Kish either in mode of decoration or in shape, though there is a feeling that the pottery of the "A" period was in some indefinite way influenced by the pottery of the earlier period.

With these facts before us, we may have to reconsider the racial origin of the inhabitants of Jemdet Nasr and to conclude that they were not themselves Sumerian, but were conquered by Sumerians, and that the latter people did not previously know the art of writing, but borrowed it from the conquered race.

Many of the objects recently unearthed at the chalcolithic sites, Harappa and Mohenjo-Daro, in India are allied in character to similar objects found in early Sumer. Resemblances may also be traced between objects from Jemdet Nasr and the Indus Valley civilization. I cannot here anticipate the reports on the investigations in the culture of prehistoric Sind, but many of the motives on the decorated pottery of Jemdet Nasr resemble those on the painted ware of the Indus Valley civilization, as also the motives on the painted wares of Musyan and Susa II. It may even be found after extended investigation in Mesopotamia that the three great civilizations of Jemdet Nasr, early Elam, and prehistoric

Sind were closely allied with one another. The early culture of Baluchistan is probably to be regarded as related to that of Sind.

Professor Sayce (*Who were the Amorites? Ancient Egypt*, pt. III, 1924) has shown that the Murru, or Amorites, occupied Babylonia in very early times; and two passages in the very old legend of Enmerker and Lugal-sanda show definitely that the Amorites once occupied both Sumer and Akkad (*Oxford Editions of Cuneiform Inscriptions*, I, pp. 5-8. "In Sumer and Akkad altogether the wicked Amorite [Mur-ru] shall he expel."). They were subdued, not without trouble, by the Sumerians, and eventually became reconciled to their conquerors, as we know from various inscriptions. As Sayce puts it, "they enjoyed equal rights and privileges with the native Babylonian in historical times." The occupation of Babylonia by these Amorites must, I think, have taken place after the conquest of that country by the Sumerians and not before. It is indeed possible that it began soon after the Sumerian entry and that the civilization that is represented at Jemdet Nasr was disturbed by enemies that entered the land both from the south and north. All this is, of course, pure conjecture; but the Semitic element in very early Sumer must be accounted for, and it seems to me certain that the prehistoric inhabitants of Babylonia were not Semitic.

It has not yet been decided from what direction the Sumerians came, but Sumerian tradition itself points to the south. The very extensive use made by the Sumerians of shell and mother-of-pearl, materials plentiful in the Persian Gulf and Indian Ocean, strongly supports the idea that they entered Babylonia from that quarter.

It has been suggested that the temple-tower, or ziggurat, was introduced into Babylonia by the Sumerians and that it is to be regarded as a proof that they came from a hilly country. Whether this be so or not, I would point out that the material from Jemdet Nasr shows that, as compared with the early Sumerian, the inhabitants of that place were comparatively poor workers in stone; so also were the people of the Indus Valley civilization. The art of working stone would be naturally confined to the people of those countries where it could easily be procured, or to migrants from those countries; and we cannot expect to find the art practised at all extensively by old inhabitants in an alluvial country, such as Babylonia, where stone is entirely absent.

## ADDITIONAL NOTES

### BEADS Plate VII, Fig. 7

A bead very closely resembling this one, described by Mr. Gordon Childe in his "Most Ancient East," p. 191, as "two axially gadrooned globulars united by a segmented tube," has been found at Byblos in Syria, where it was dated to the period of the IV-VI dynasties of Egypt.

### HANGLES Plate XLIII, Fig. 2

A long glazed bead said to have come from an Old Kingdom mastaba in Egypt and now in the Edwards Library, University College, London, resembles both in material and decoration these handles from Kish. The dating of the two also approximately agrees. And in the Ashmolean Museum at Oxford there are very similar objects to those from Kish, which were found in Egypt and dated to the eighteenth dynasty.

### POTTERY RINGS Plate XLIV, Fig. 2

Many of these pottery rings have been found at Mohenjo-Daro, where they were at first thought to be stands for pottery. No pottery has been found, however, for which they could have been used. The pottery rings from Kish would only be suitable for vases with round bases, and even this type of jar would rest very insecurely on them. I still think that they must have had another use.

### POTTERY ANIMAL Plate XLVI, Fig. 3

This model of a ram which once had wheels was found in the débris of the "A" palace at Kish, and in all probability should be dated to the period of the "A" graves. A very similar figure, found in the lowest levels at Ur, Woolley describes as a zoomorphic vase, a category in which it seems to me it can hardly be included. The great similarity between these two models certainly suggests their belonging to the same period, but I should hesitate to date the Kish example even as early as the Jemdet Nasr period (*Antiquaries Journal*, Vol. X, No. 4, Plate XLIIa).

### POTTERY DISH Plate LII, Figs. 25-26 (see also Plate XLIV, Fig. 12)

A dish almost exactly similar with inturned handles has been found at Ur and dated there to the Jemdet Nasr period. The two specimens from Kish, unfortunately, were not found in the graves and therefore cannot be exactly dated; but I should hesitate to regard them as belonging to the Jemdet Nasr period since no relics of that date were unearthed from the "A" mound. Possibly, however, this type of dish was so useful that it persisted from that time down to the period of the "A" graves. Indeed, Woolley has stated in his guide to the British Museum Exhibition for 1930 that dishes of very similar type are actually in use at the present day.

### IMITATION SHELLS Plate LX, Figs. 3-4

These imitation shells from the "A" cemetery, which are of lapis lazuli, closely resemble in shape two shells carved in ivory which were found by Mr. Guy Brunton in predynastic settlements in Upper Egypt. The same, or closely allied, species of seashell seem to have been copied by the two peoples (The Badarian Civilization, Plate XLIX).

### BRICKS Plate LXX, Fig. 25

Bricks very similar to these both in shape and size have since been unearthed from very early levels at Ur, but made of some kind of cement instead of mud. The Jemdet Nasr type of brick was therefore not merely a local variety, but was probably used at that time throughout Mesopotamia (*Antiquaries Journal*, Vol. X, No. 4, p. 333).

### PINS Plate LXXI, Figs. 11-12

The spiral grooving on these two pins is very curious, and, though one would hardly expect to find this form of ornamentation in any country at such an early period, it occurs

also on an ivory rod found by Mr. Guy Brunton at Badari in Upper Egypt (The Badarian Civilization, Plate XXIV, Fig. 6). The ornament on these two examples from Jemdet Nasr and the one from Badari may have originated independently, even though they may belong to approximately the same period. One is led by these examples to wonder whether the invention of the screw is rightly attributed to Archimedes, and whether it was not known much earlier, even though in its early stages it was perhaps merely a form of ornamentation.

GAMESMAN Plate LXXI, Fig. 24 (Plate LXXIV, Fig. 7)

From the description given, even including the material (pink limestone), it seems that a pointed, pear-shaped, marble-like object of predynastic date, found at Hemamieh, Upper Egypt, closely resembles some that have been unearthed at Jemdet Nasr (The Badarian Civilization, p. 60 (128)).

THERIOMORPHIC JAR(?) Plate LXXVI, Fig. 2

On further consideration, it is to be doubted whether this pottery animal should strictly be called a theriomorphic jar. I am now inclined to regard it merely as a model of a pig and to doubt whether it was ever intended to be filled with a liquid. In the process of baking a vent had to be provided for the escape of gases, and what more natural place than the mouth of the animal? In posture this animal can be compared with the steatite animal, also of the Jemdet Nasr period, lately found at Ur (*Antiquaries Journal*, Vol. X, No. 4, Plate XL1b).

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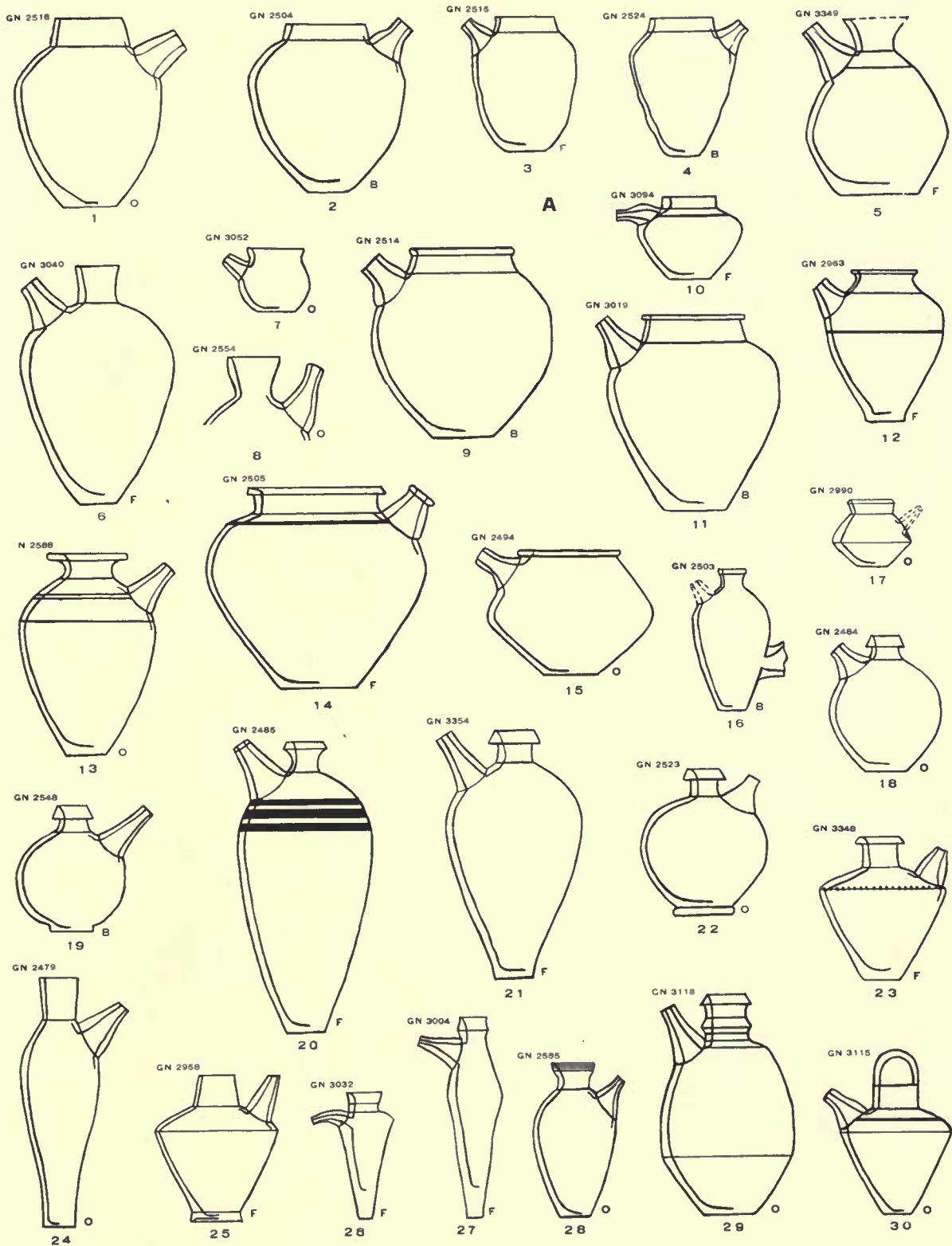
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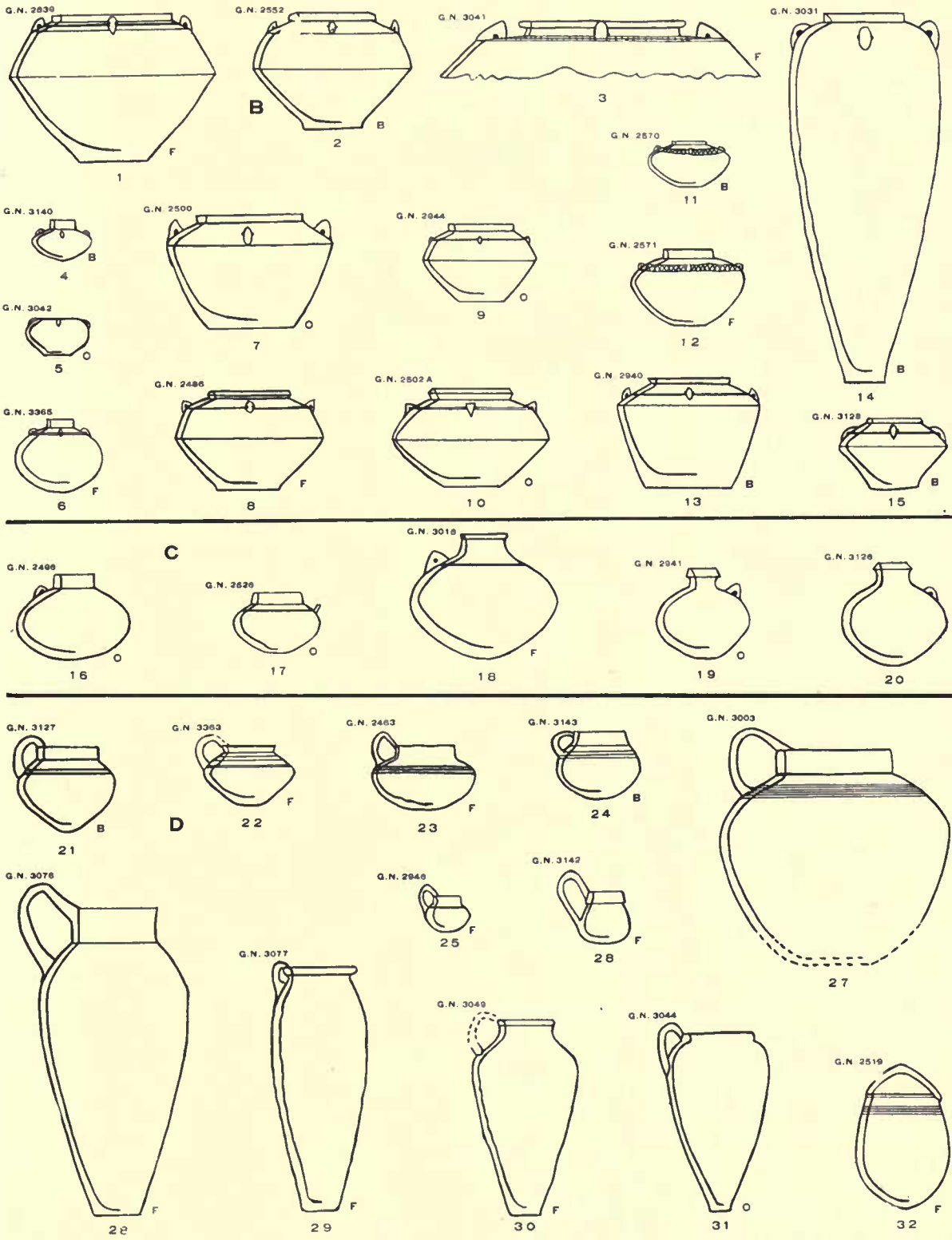


SPOUTED POTTERY, TYPE A  
Scale 1:6

B SIGNIFIES BAGHDAD  
F SIGNIFIES FIELD  
O SIGNIFIES OXFORD

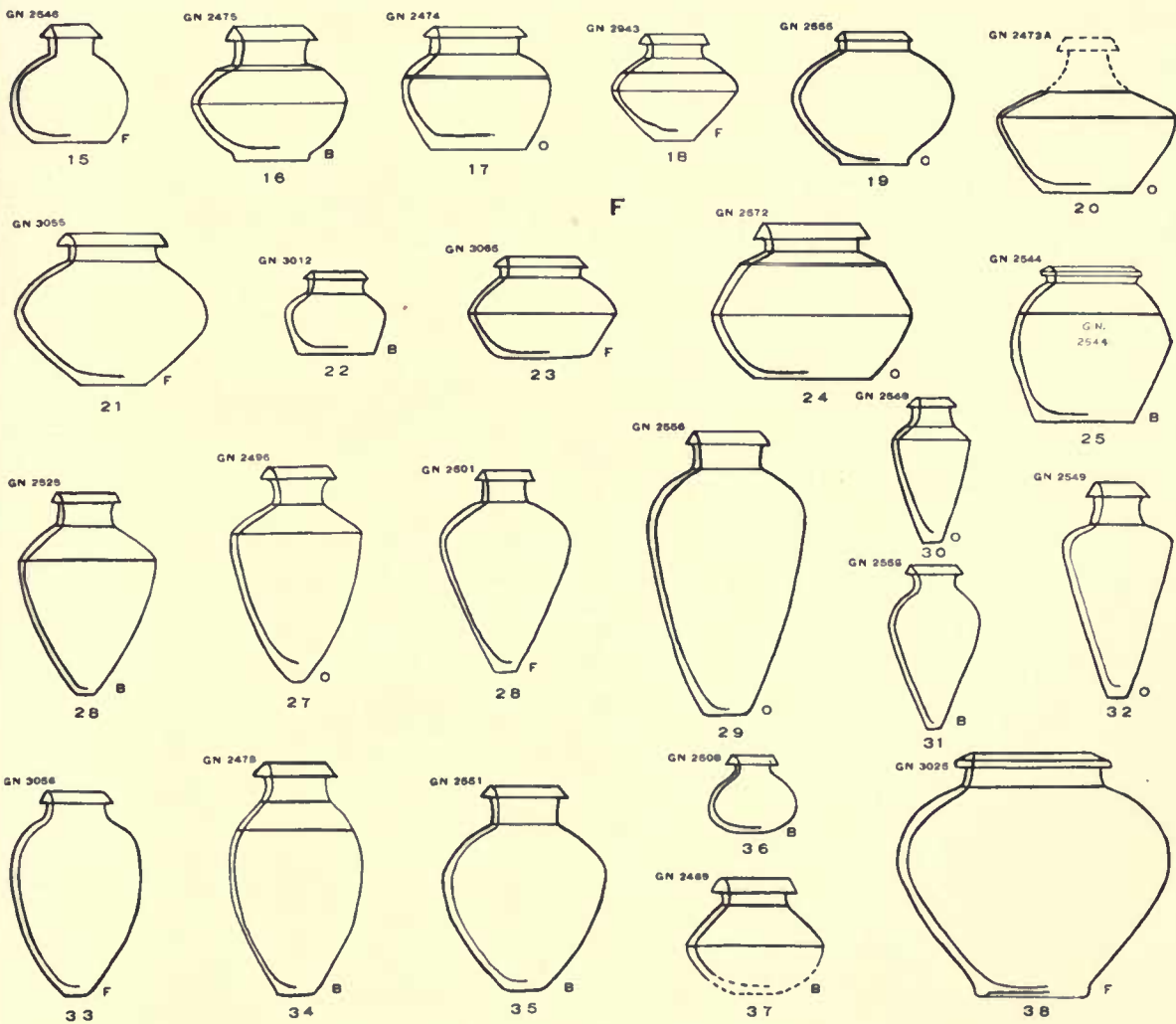
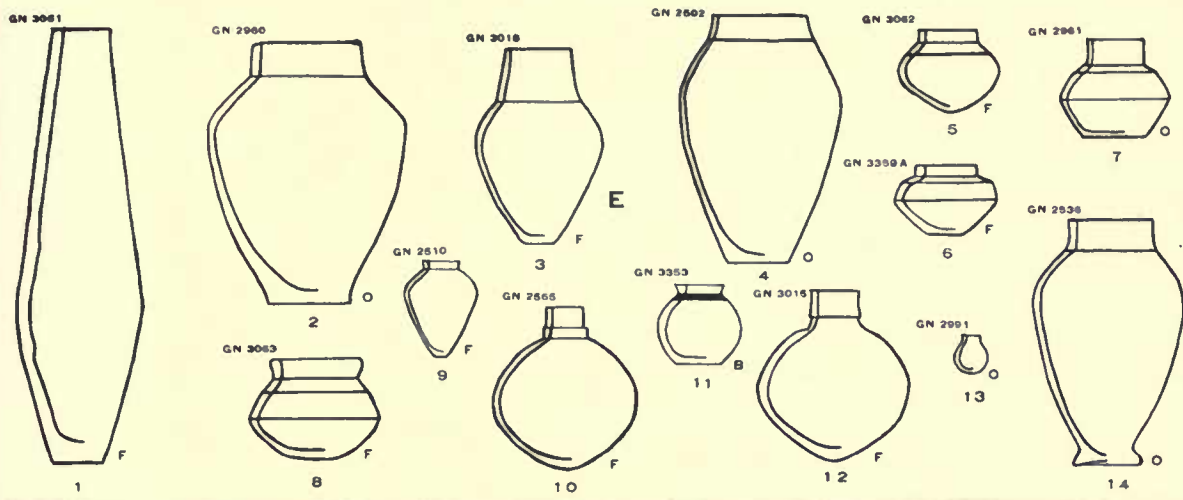






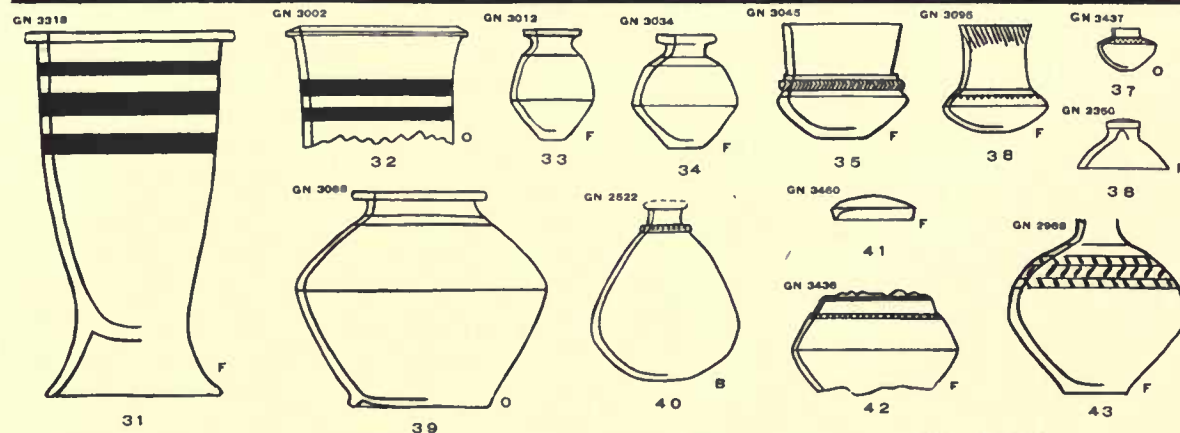
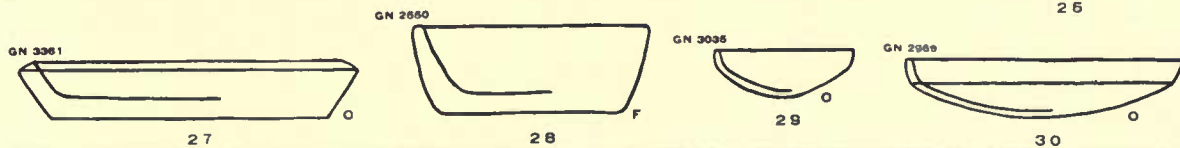
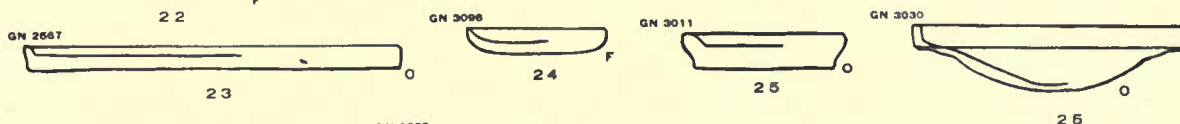
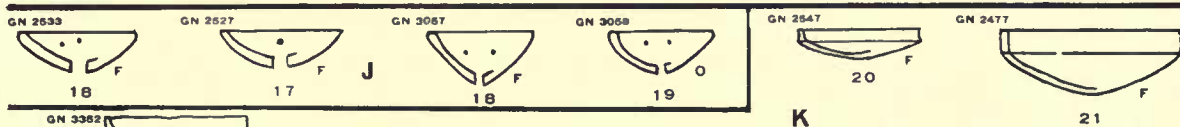
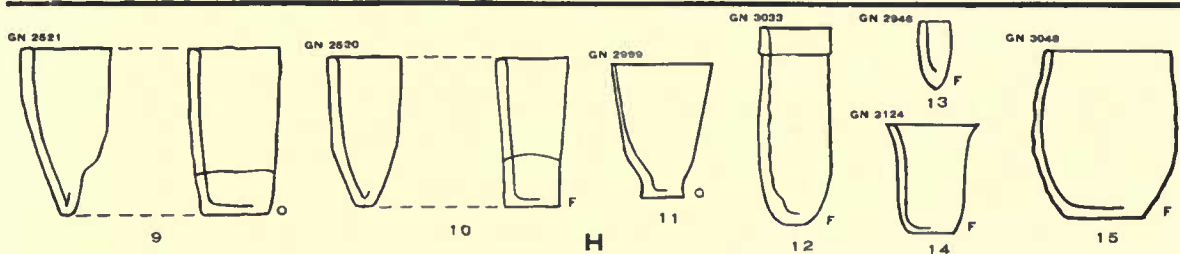
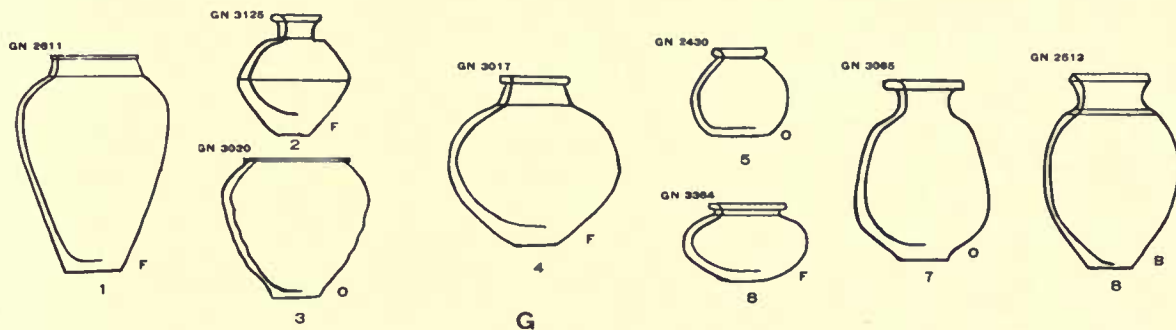
LUGGED AND STRAP-HANDLED POTTERY, TYPES B, C, AND D  
Scale 1:6





POTTERY WITH PLAIN AND OVERHANGING RIMS, TYPES E AND F  
Scale 1:6





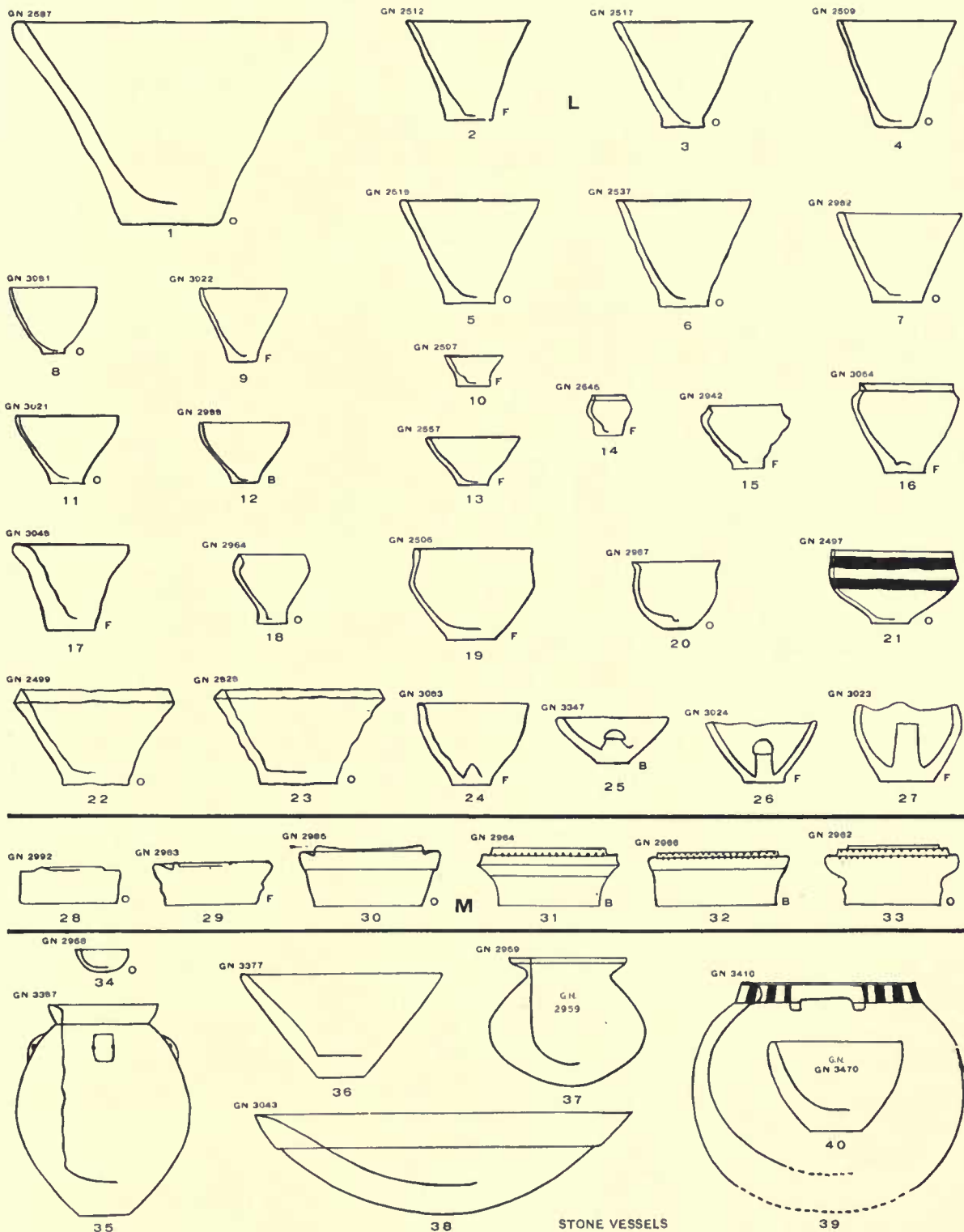
UNUSUAL TYPES

BEADED RIMS, BEAKERS, STRAINERS, DISHES, PANS, AND UNUSUAL TYPES

TYPES G, H, J, AND K

Scale 1:6





POTTERY CUPS, JAR STANDS, AND STONE VESSELS, TYPES L AND M

SCALE: Pottery 1:6; Stone Vessels 1:4







MONOCHROME AND POLYCHROME DESIGNS ON POTTERY

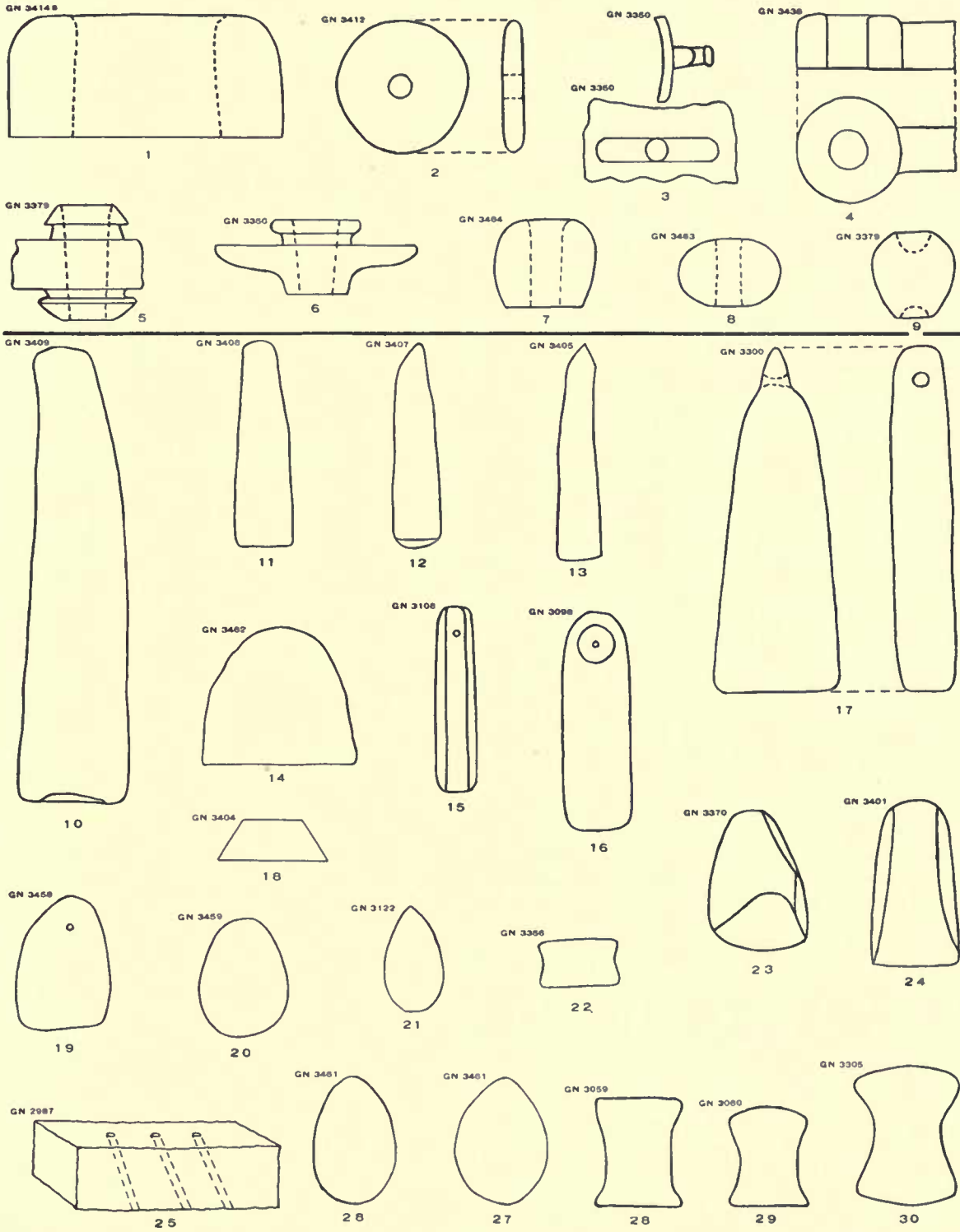
Scale 1:2





POLYCHROME DESIGNS ON POTTERY  
Scale 1:2

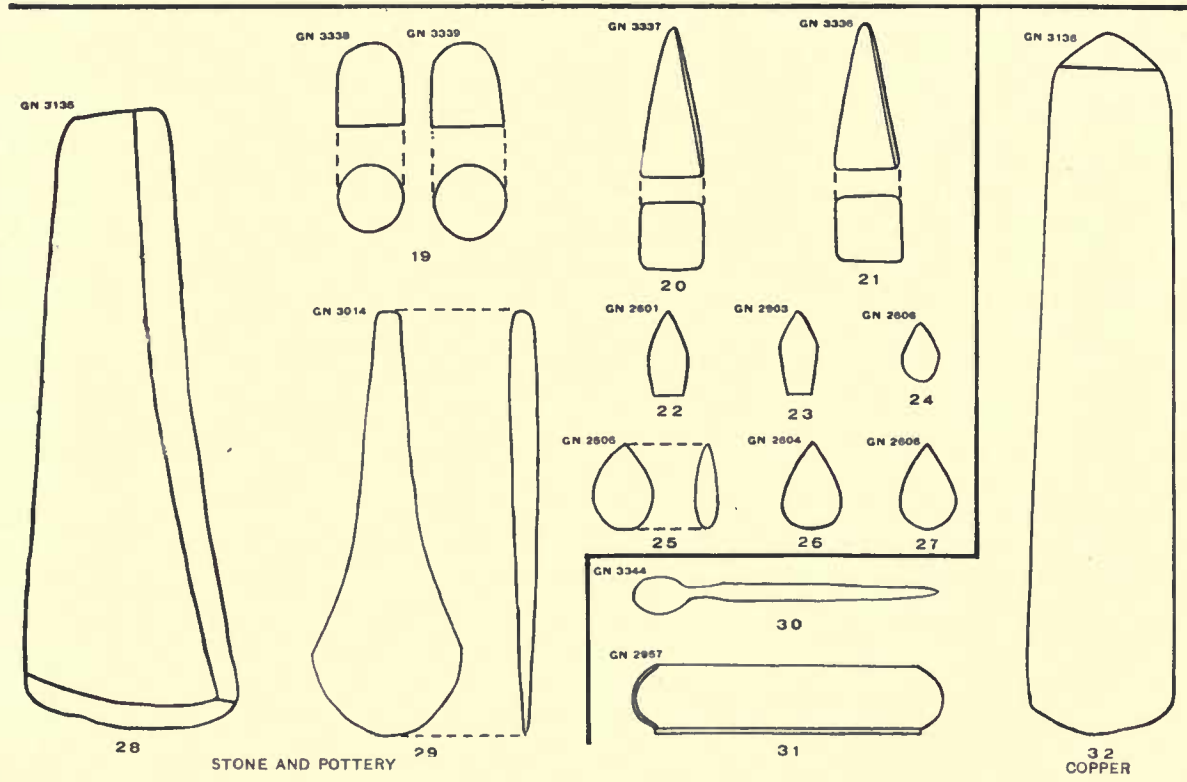
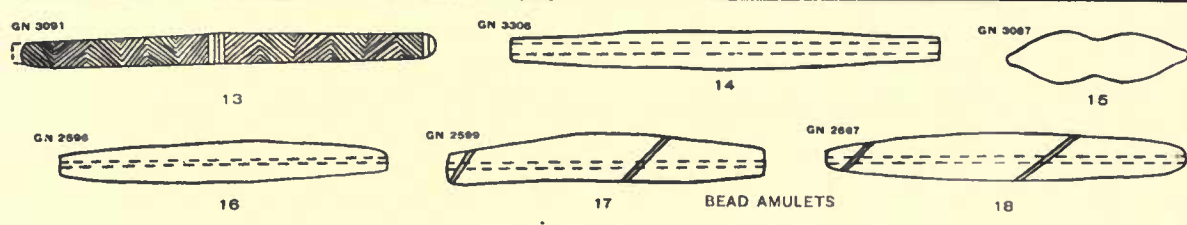
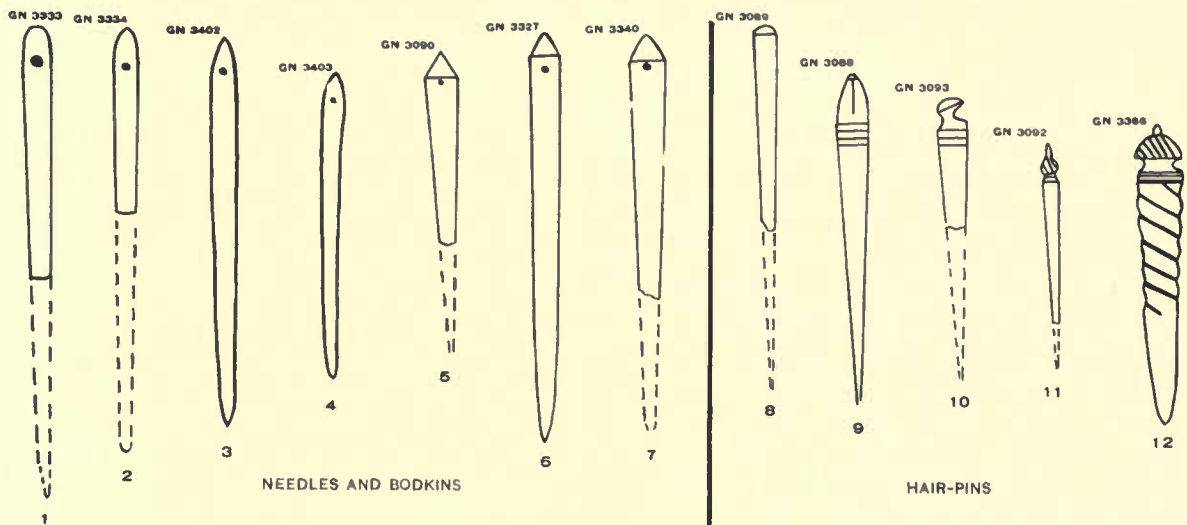




TOOLS AND IMPLEMENTS

SCALE: Figs. 3, 4, 7, 8=1:6; 5, 6, 9=1:4; 14=1:8; Remaining Figs. 1:2



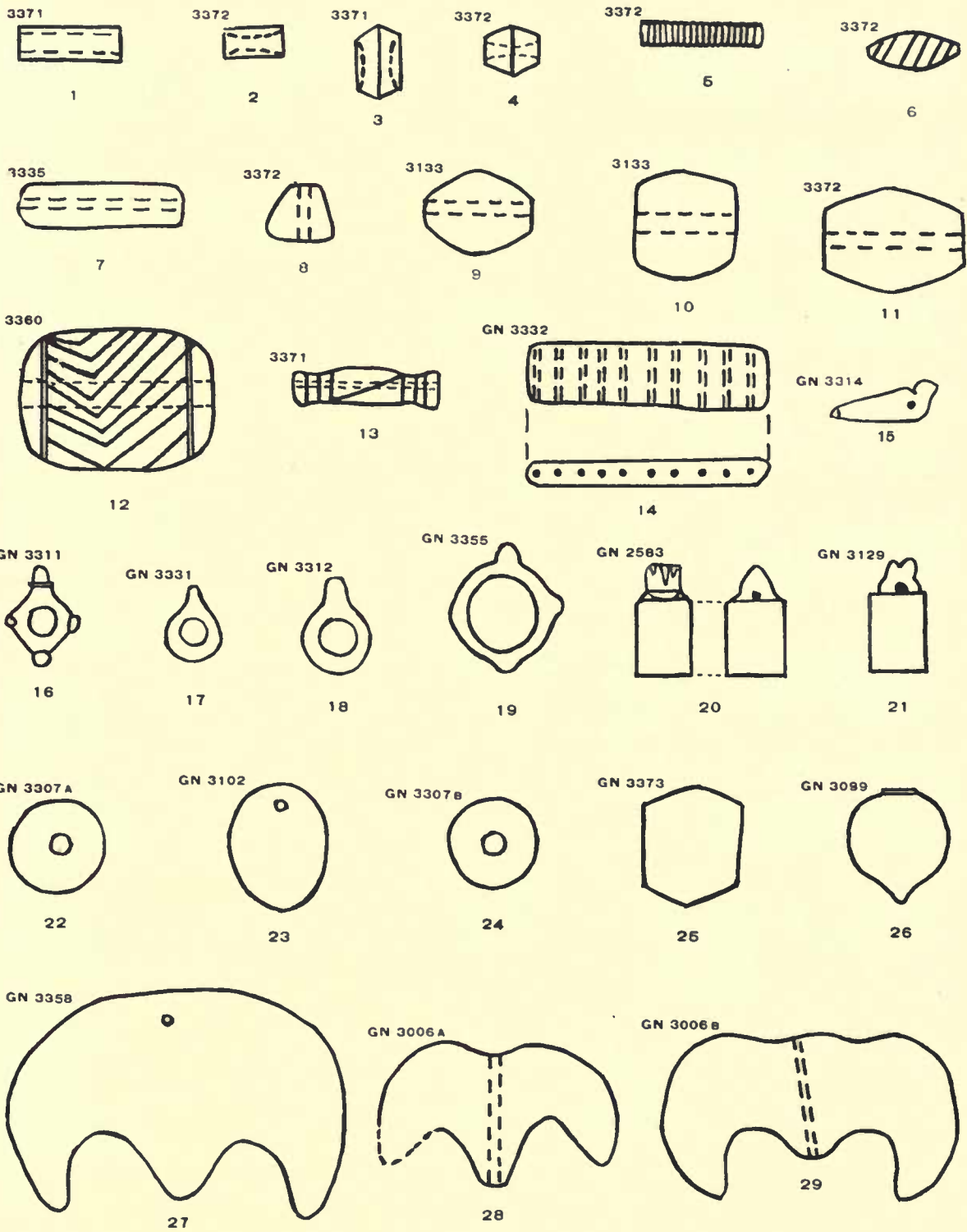


NEEDLES AND BODKINS, HAIR-PINS, BEAD AMULETS, STONE, POTTERY AND METAL OBJECTS

Scale 1:2







BEADS AND AMULETS  
Scale 1:1



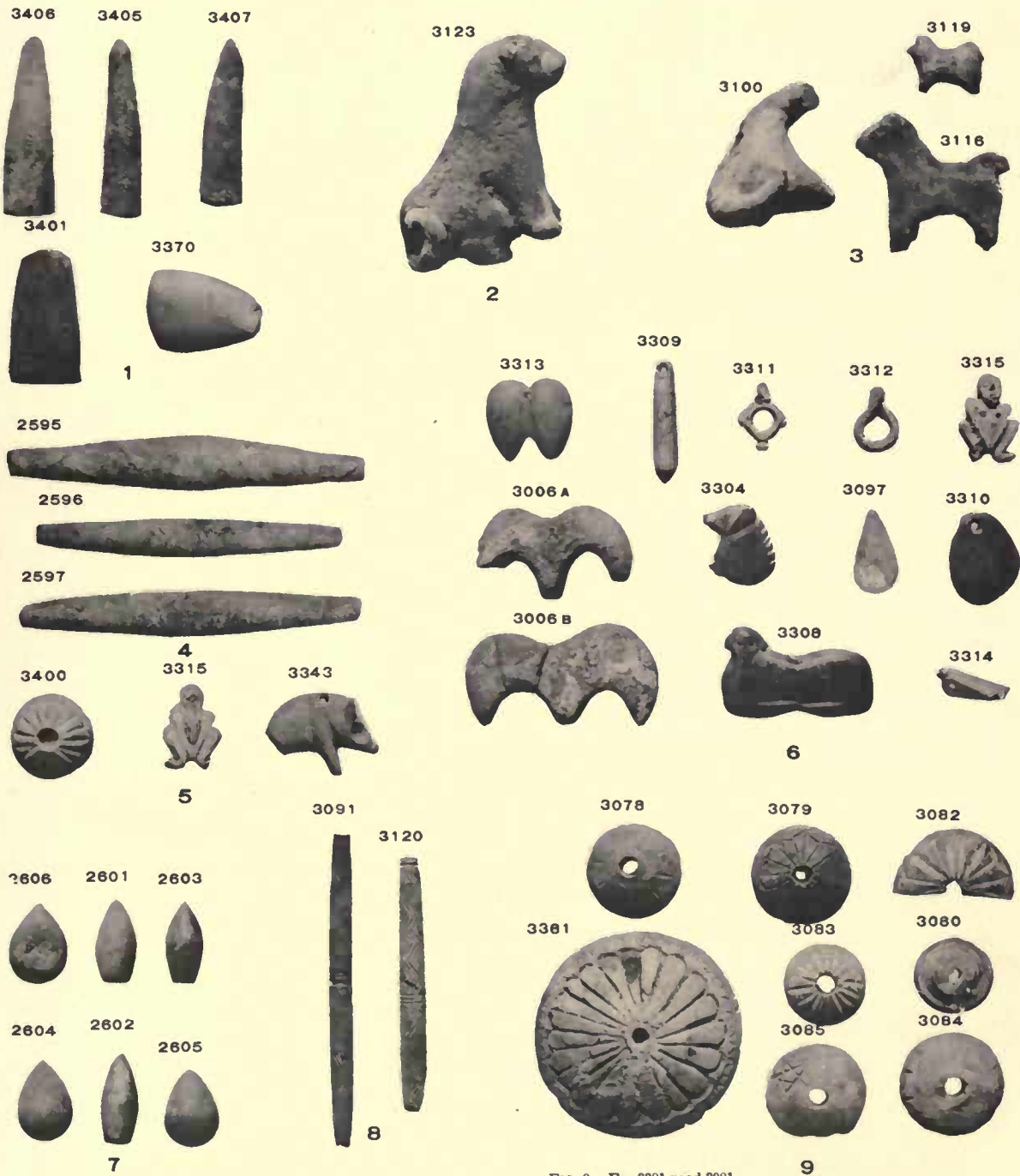


FIG. 9. For 3381 read 3081

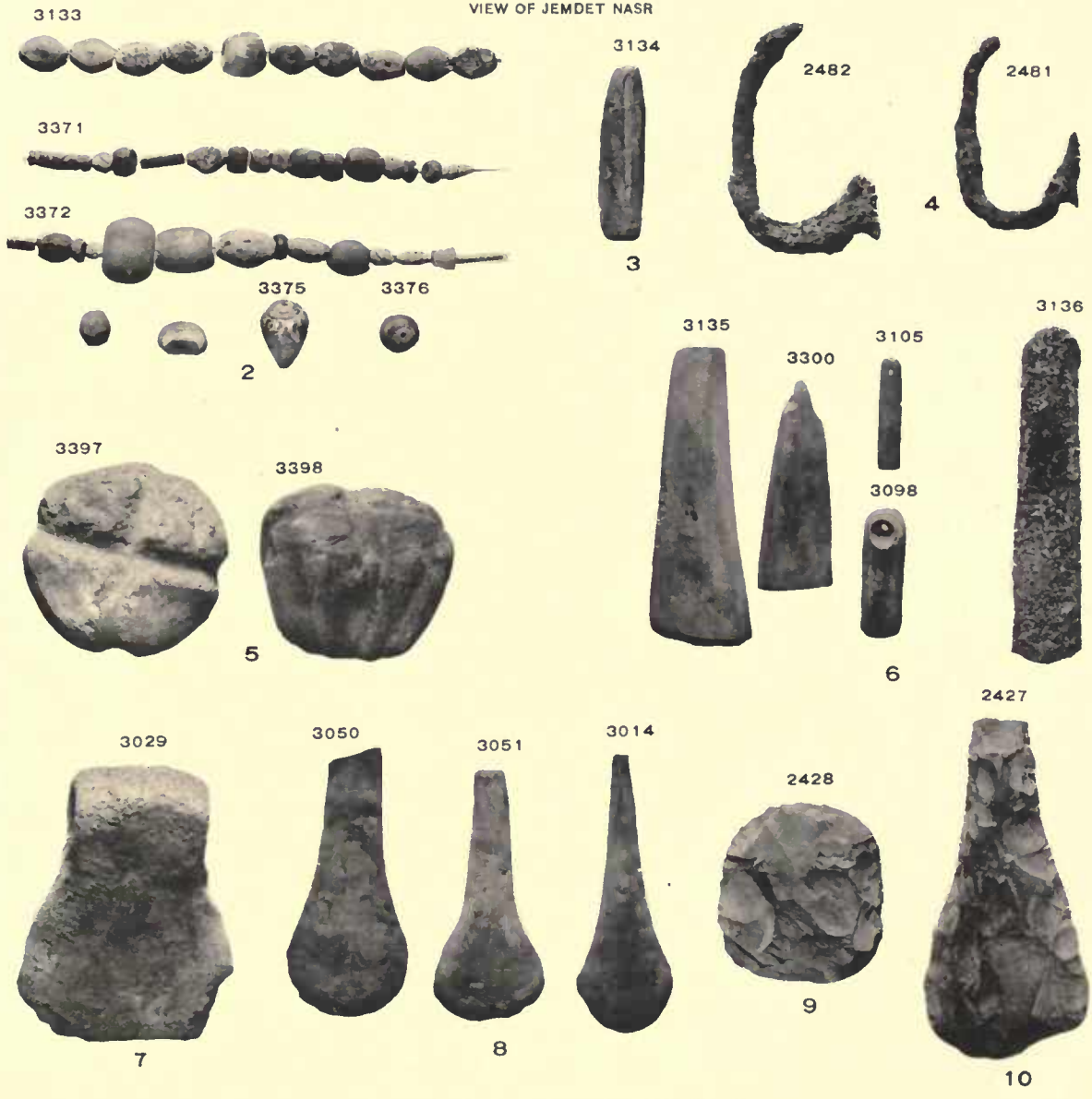
POTTERY ANIMALS, AMULETS, SPINOLE-WHORLS





1

VIEW OF JEMDET NASR



OBJECTS OF STONE, POTTERY, AND METAL





1



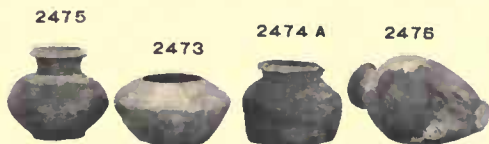
2



3



5



4



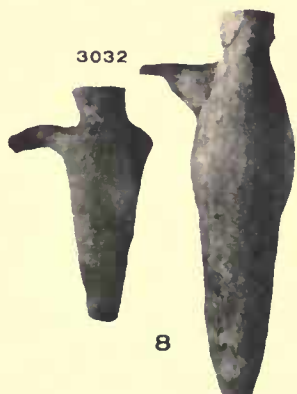
7



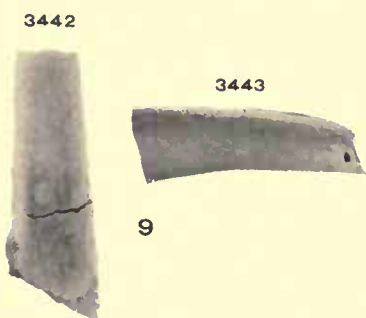
6



10



8



9



2993 B



11



12



2993 A



13

POTTERY







1



2



3



4

RESTORED PAINTED POTTERY





1



2



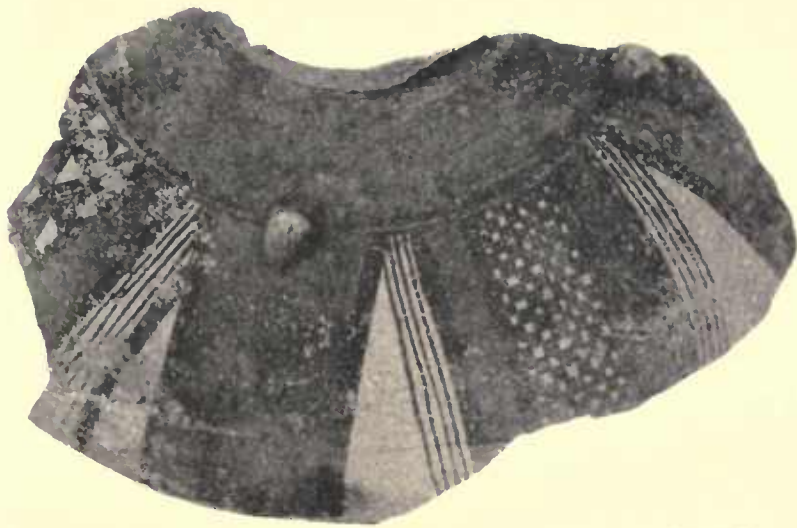
3



4

RESTORED PAINTED POTTERY





1



2



4



3



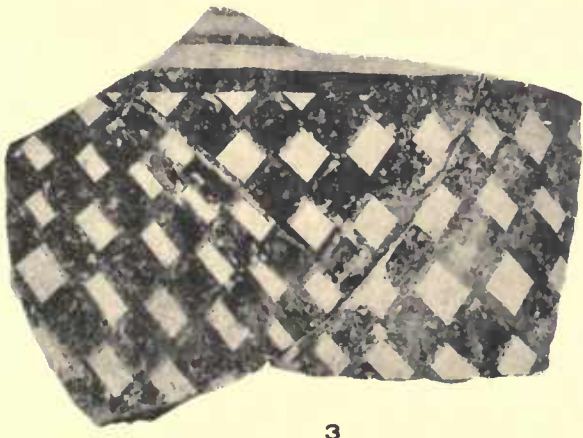
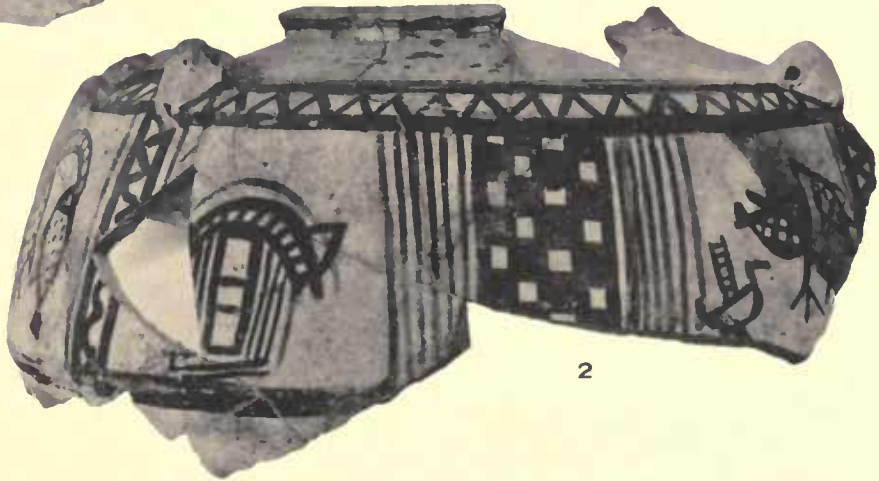
5



6

RESTORED PAINTED POTTERY





FRAGMENTS OF PAINTED POTTERY















