EXCAVATIONS AT KISH

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EXCAVATIONS AT KISH

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EXPEDITION TO MESOPOTAMIA

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with Epigraphical Notes,

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PREFACE

This volume, in which M. Louis Charles Watelin has explained his discoveries in the deep stratum north of the greater stage tower and east of the temple Ehursagkalamma, is the last contribution of that distinguished archaeologist and excavator. M. Watelin died on board a French vessel off the coast of Chile, January last, from pneumonia contracted while he was exploring the interior of Patagonia. We were unable to return to Kish for the season 1933-4 owing to the unfavourable attitude of the Department of Antiquities of the Government of Iraq in regard to the division of archaeological objects and other threatening regulations, which would harass the work of an excavator. In the hope that these proposed regulations might be withdrawn next season, we decided to discontinue for one season, and permit M. Watelin to accept an offer to conduct explorations in Easter Island. Attention has been called to the remarkable similarity between the early Indus Valley script of Harappa and Mohenjodaro and the script employed by the early inhabitants of Easter Island. This suggestion aroused interest in France; consequently Watelin was commissioned to explore that island in the western Pacific off the coast of Chile. The Oxford-Field Museum Expedition appreciates the fine work accomplished by him at Kish. We have lost a great excavator who was master of the complicated problem of excavations at Hursagkalamma and the whole area to the north-east. We had hoped that he would continue his work on the early sites at Jemdet Nasr and Umm-Jerab, and excavate the Sassanian palace at Barghuthiat.

The name Hursagkalamma became current for the whole of Eastern Kish some time between the period of the dynasty of Agade and the first dynasty of Babylon (1). Since it was only this part of Kish that was occu-

(1) See *Journal of the Royal Asiatic Society*, 1930, 601-2.

pied in the late period by the Parthians, Sassanians, Arabs of the Bagdad Caliphate and Ilkhani Mongols, if the place survived under any name in the Christian period it must have been as *Hursagkalamma* and not *Kish*. Coins of the Seleucids, Parthians, Sassanians, Caliphs of Bagdad and the Ilkhani Mongols (1) (at Abu Sudaira) as well as a great number of Roman coins have been excavated in Eastern Kish or found on the surface. It is certain that coins were not issued from this place under the Mongols, 1266-1352 AD. Dr. Milne of the Ashmolean Museum has identified Roman coins of the emperors Arcadius (395-408), Constantine I (306-337), Valentians, Theodosius (378-395), Honorius (395-423). The latest coin is one of Justinian I (527-565). Roman coins were current, therefore, at Hursagkalamma during the greater part of the Sassanid period.

Three dated coins of the Bagdad Caliphate have been found in Eastern Kish ; two from the reign of Monṣûr, dated 151 of the Muhammedan era (768 AD), minted at Abbasiyah, a place located by the Arab geographer Yakut near Bagdad between the Sarat canals ; a gold dinar of Mustanjid dated 564 of the Muhammedan era, i. e. 1168-9 AD (2).

The name of Eastern Kish would have survived into the Parthian, Sassanian and Arab periods, if it became a place important enough for the issue of coins. It became a provincial capital of the Sassanians ; the discovery of a Sassanian palace and an extensive Sassanian quarter just east of the temple Ehursagkalamma has proved this. Coins of the following Sassanian kings have been excavated there ; Shapur II (310-379), Bahram Gôr (420-438), Peroz (459-484). There are many others which are mostly illegible.

Among mint monograms of Sassanian kings the group *HRZ* attracted my attention. It will be found in W. H. Valentine, *Sassanian Coins*, p. 26, No. 99. Here the monogram is identified with *HR* and *HRA*, both said to be Herāt in Khurasan (modern Afghanistan). These are Mordtmann's identifications, who reads *HRZ* in Pehlevi characters as *HRI*, and identifies it with Herāt also. Whether *Herāt* was important enough to be a mint centre under the Sassanians as early as Bahram IV (see Valentine, p. 19), 386-397 AD, is a question which specialists must settle. J. de Morgan was the first to read the Pehlevi monogram as *HRZ* and this is clearly

(1) For the coins found by Gerald Reitlinger at Abu Sudaira, see Sir Richard Burn in *Journal of the Royal Asiatic Society*, 1933, 831-844. Mints found on Mongol coins, here, are Bagdad, Hillah and the Mongol capital in northern Persia, Sultānia. The majority are from Bagdad and Hillah.

(2) D. S. Margoliouth, *JRAS*, 1927, 845.

possible (1). I suggest that *HRZ* is the true reading and that it means *Hursagkalamma*. *HR* may refer to *Hursagkalamma* also. For *HRZ* in the time of Hormazd IV (578-89), see VALENTINE, p. 24, No. 269. It is certain that *HRA* on the Muhammedan coin of Salim ben Ziad, EDWARD THOMAS, *Journal of the Royal Asiatic Society*, XII (1850), 294, means Herāt and the date AH. 26 = AD 648 is an error for AH 66 (2) = AD 685. On the coins from Eastern Kish only one mint monogram can be read AI (Airan), the most common Sassanian mintage, on a silver coin of Peroz I.

It is a great pleasure to recognize here the generosity of DR. WELD and SIR CHARLES MARSTON, whose contributions have made the publication of this volume possible.

S. LANGDON.

Oxford, Nov. 12, 1934.

(1) See D. J. PARUCK, *Sāsānian Coins*, 157-8.

(2) THOMAS, *ibid.*, corrected this error, but MORDTMANN, *ZDMG*, VIII (1854), 155, edits this coin as though AH. 26 is correct. This mislead PARUCK, p. 155, into the false argument that *HRA* cannot be Herāt, on the ground that Khurasan was not in possession of the Muhammedans as early as AH. 26.

INTRODUCTION

A description of the Neo-Babylonian temple, Hursagkalamma, as reconstructed by Nebuchadnezzar, and completed by Nabunidus has been given in detail in volume IV. I shall now take account of the larger and deeper excavations on the temple mound, which are gradually elucidating the history of this ancient city. Since the deeper trenches reveal discoveries of the remote period, hitherto unknown, I am unable to cite parallels on many important points. In the same year that I excavated the Neo-Babylonian temple, practically on the top of the central part of the great mound (1), I also removed the top parts of a mound north-west of the great ziggurat, being the southern part of the great *tal* north of the two stage towers. At the top and sides, near the surface, were found Neo-Babylonian graves, similar to those found elsewhere on this great conglomeration of mounds and in mound W (2). No late burials were found above the walls of the Neo-Babylonian temple, but they occur in all places where the walls of that period already lay in ruins and covered by debris. The whole *tal* except the large area covered by the temple must have been in ruins, certainly as early as the Persian period.

Mound Z contained above plain level the remains of a badly preserved building Pl. V, 1 and Fig. 6. The walls that remained were low and not very thick. The chambers, arranged on a regular plan, contained a few tablets of various periods which afford no information concerning the

(1) See Vol. III, Plate I and general plan of Kish. Vol. I Pl. XXXIII. [To orientate the reader on the location of the work, I refer to the plan in Vol. I and another by MACKAY in *Report on the Excavation of the « A » Cemetery*, part. I, Pl. VII. See also H. DE GENOUILLAC, *Premières Recherches archéologiques à Kish*, Pl. 39. I am now excavating the huge ruins, seen as they originally appeared on the photos, Vol. I, Pl. II, 1 ; Pl. III, 1-2. « Old temple area », of the plan, Pl. XXXIII. Pl. III of Vol. IV shews the Neo-Babylonian temple which lies partly between the two ziggurats, E-F. Mound Z, the scene of most of the work described here, may be seen on the photographs, Vol. I, Pl. II, 1 ; III, 1-2 ; V, 1-2, just to the left (N-W) of the great ziggurat].

(2) See Vol. I, pp. 89-91.

date of the building; its foundations lay on the same level as the floors of the Neo-Babylonian temple, that is generally five metres below the surface of the *tal*. A trench run between the great ziggurat and this mound by Mackay in 1925, below the level of this building (which lay in the central part) revealed traces of an older monument. Consequently at the end of the season 1925-6, the work of exposing the building beneath on the west side was begun, and it was finished in 1927 (1). Having planned and studied this building it was demolished in 1928. In removing the mound by layers to plain level eight metres below the surface of the mound, the foundations of this older building were found to be separated from plain level by a variable thickness of earth. This earth immediately beneath is designated as the *Red Stratum* (2). The thickness of the red stratum is irregular, and it is made of broken baked plano-convex bricks, not laid in any order. A foundation box made of convex bricks was found in it, but no inscription.

I removed the red stratum in this area and proceeded deeper. Below the red stratum (averaging 1 ½ metres in thickness) was encountered a sterile layer, mixed with fragments of pottery. This layer is somewhat irregular and apparently the result of earth having been heaped upon a layer beneath, which is almost perfectly horizontal. This horizontal layer consists of clay precipitated in thin layers, or of ashes and other substances foreign to the soil above and below; it contains also pottery sherds all lying horizontally. This layer is sure evidence of an enormous inundation, whose waters lay over the land for a long period. It was caused by the overflow of the river; for in certain parts lay skeletons of fresh water fish evenly precipitated in the sediment, and in lower parts of the layer, blocks of pure clay, formed in cavities from which the water had filtered away. [This layer averages a half metre in thickness, but differs greatly in various parts, being found all over the mound below plain level]. Below the deluge stratum I came immediately upon buildings right down to the water table, which is six metres below plain level. Pl. IV and Pl. V, 2. Buildings rest upon buildings down through this long and consecutive period, and I was able to follow them with great care. These habitations extend southward and pass beyond the limits of the mound in that direction.

(1) In this building MACKAY found the headless statue with the inscription of Alu-ilum son of Sarginna (Sargon) (?), published in *JRAS*, 1930, p. 602. It belongs clearly to the Sargonic period. [S. L.].

(2) See Fig. 7.

The level of the present water table has probably remained constant since a remote period ; for the tombs and graves cease immediately above it. But it had already in those days risen more than three metres above the virgin soil, on which the first inhabitants of the Euphrates Valley founded their earliest homes in remote antiquity. The excavations proceeded downward to virgin soil, by means of a hydraulic pump, Pl. VI, 2, Pl. VIII, 2, three metres below. It is from this deep level and the beginning of civilisation there, that I now proceed to describe the various archaeological stratifications in their details.

Professor Langdon, who has rendered my volume into English from the Franch manuscript, has kindly undertaken, at my request, to bring the discoveries into relation with Sumerian and Babylonian sources wherever he found it possible. The references will be found in his notes. Occasionally the texts appear to contradict my observations and to be opposed to the deductions which I have based upon my study of the discoveries. Nevertheless I have requested him to set down his views based upon the inscriptions that this book may contain all the material necessary for discussion.

L. Ch. Watelin.

CHAPTER I

Paleolithic period. — Culture of the Jemdet Nasr period. — Earliest brick buildings. — Objects. — Pottery.

A) THE EARLIEST TRACE OF HUMAN OCCUPATION on the soil of Kish is marked by microlithic implements, found with ashbeds only 0.30 meter thick on the average. This lowest stratum contains few pottery fragments, at least according to my present researches (1). Here for the first time microlithic industry has been found *in situ*. Although this industry has been found in the northern part of Mesopotamia, as I am informed, it is entirely absent in the south ; it has not been found at Ur, which at my request has been thoroughly examined on that point. This industry, therefore, represents a stage in the progress of the earliest inhabitants from the north toward the south ; inhabitants moving southward, I believe, from the Syrian desert who, when the Syrian desert became arid, moved west and east. Apparently Kish represents the extreme southern occupation of that prehistoric Syrian invasion, being arrested here by the marshes of the lower valley. In the earlier period the Persian Gulf extended farther north. But the rivers heavily charged with sediment encroached regularly upon the gulf and lay down an alluvium, progressing southward through the ages, and at the same time the resistance of the sea caused a bar to be formed in the vicinity of Ur. Marshes became fertile soil, and marshes formed again southward. Probably then in that period the marshes arrested the descent of that very ancient migration.

Material for making implements was rare on this alluvial plain, and

(1) The reader should remember that M. Watelin was naturally unable to excavate the whole wide area here below water level, but only an area 6×10 meters square. [S. L.].

if this does not explain the paucity of stone implements, it is clearly proved by the poor quality of the flint flakes, which lend themselves but little to the production of large pieces. I have already called attention to the fact that the microlithic industry is found at higher levels in this mound (1). After patient study of the stratifications I am confirmed in my opinion that the microlithic implements in the upper strata are not *in situ*, but have been removed from below.

The majority of these implements (more than 50 percent of the total gathered in the deep excavations, either natural or worked) consists of simple or double *borers*, the two points being either on the same side or on opposite sides; they are both flat and *bombé;* they vary from 1 to 6 centimeters. The points of the borers are made to emerge from the bodies by retouching. I have no explanation of their use. The remaining flints consist of thin flakes and atypic chips, always of small dimensions. In fact I am unable to affirm that these layers of ashbeds contain any pieces of sickles, which have been found at higher levels. These two forms of implements (borers, etc., and sickles) do not harmonise chronologically. The civilisation which succeeds the microlithic industry employed flint sickles, and it is certain that fragments of these penetrated the soil beneath, but I am not able to conclude from the fact that they are found near the ashbed level, that they were in use there, and that these primitive inhabitants had already turned to agriculture.

In the ashbed layer were found fragments of white quartz intentionally broken and mixed with flint matter in the proportion 2 kilos 400 grams to 26 kilos 600 grams of the total material. There are no traces of stone or paste beads, but only of rare fragments of *unio* fresh water mussels, all bearing traces of artifaction and sometimes pierced. Occasionally fragments of shell strengthened by bitumen are found by the ashbeds. The bitumen was probably obtained from Hit where these nomads had discovered the bitumen springs in their migration southward from the Syrian desert. Exceedingly few objects were found near virgin soil, which proves the inferior state of culture of these people of the stone age. They have apparently no connection with the culture which is represented in the stratification above. This problem can be settled, however, only by similar deep excavations on other sites or by devoting an entire season to this

(1) *L'Industrie lithique de Kish, L'Anthropologie*, Vol. XXXIX, par L. Ch. Watelin.

low level beneath the water at Kish. The pottery fragments are too rare to permit any definite conclusion.

B) THE CULTURE OF THE JEMDET NASR PERIOD. — Immediately above lies a layer 1.50 meters thick in which occurs monochrome and polychrome

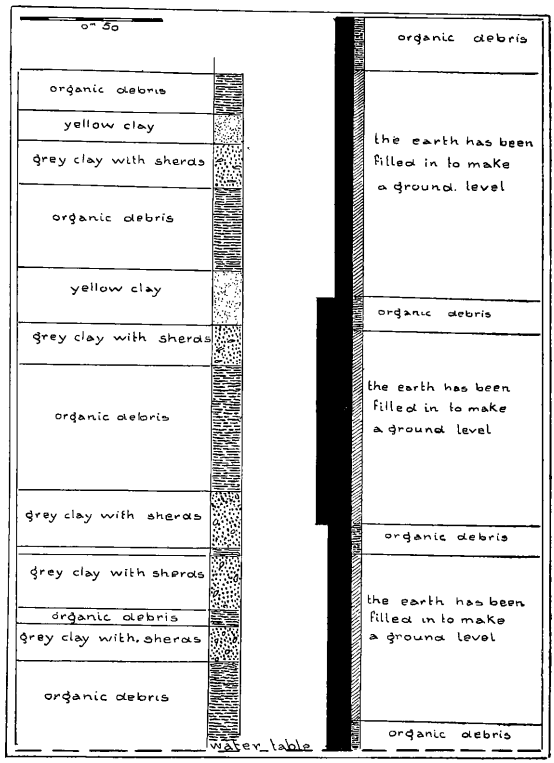


FIG. 1. — Section through the first town area from water table to cemetery y level. All plano-convex bricks. (See pp. 5 ff).

painted ware precisely similar to that found at Jemdet Nasr. Pl. VII, 3, 4. This pottery is accompanied by objects which prove its identity with the Jemdet Nasr ware. In the first place there are circular blocks of baked

and sun dried clay, wheel turned, ornamented with one or two rope bands in deep relief separated by a groove. Pl. VII, 1. These circular blocks are invariably thick and low as seen in Pl. VII, 1, at the right. Since they are invariably found with the pottery I conclude that they served as supports for the jars. They abound at Jemdet Nasr where they also occur with the same ware. See MACKAY, *Jemdet Nasr*, p. 250, type M. Among other objects which characterise the two cultures should be mentioned the flat cornelian beads and bitumen beads which have the form of two truncated cones joined at their bases ; there are also beads of white paste (1), Pl. VII, 5 ; teetotums of clay 3 centimeters high ; clay jar stoppers, 11 cm. in diameter and 5 cm. high ; bottoms of jars made of baked clay, occasionally pierced ; fragments of stone mortars with pestles ; sickles of baked clay ; cylinder seals of white paste decorated with a geometrical design (2) (Pl. VII, 2) ; and finally implements of a stone age which I designate as Flint II, since they represent an advance on the implements of the lowest layer. Few objects from this layer could be expected, taking into consideration the small area which we were able to excavate by hydraulic method to virgin soil.

The fragments of painted ware from the Kish stratum found with these objects have geometrical decorations in red and brown, or in brown only ; the decorations, so far found, are confined to the necks and shoulders of the vases, descending to the point of greatest diameter and often lower. These vases are made of clear yellow clay, but of mediocre quality. See Pl. VII, 3, 4. The designs are composed of rows of lozenges roughly drawn, parallel lines, lines crisscrossed, chequer board patterns, palm leaves, stars with five rays. It is certain that the variety of designs is greater than those represented by the fragments recovered, and reveal a clear identity with the painted ware of Jemdet Nasr. The vases recovered here belong to the carinated class, Pl. VIII, 1, with four pierced lugs placed at proportionate distances on the shoulder, the so called lugged vases found prolifically at Jemdet Nasr, and on which the artists of the period did their best work. The lips consist of a large flat rim. In addition to the coloured line decorations, there is another method consisting of a red slip, irregularly burnished apparently with a bone. Pl. VIII, 3.

As to the unpainted ware, it is difficult to make any definite statement, for no specimen was found in appreciably good condition. The frag-

(1) Field catalogue KM 207.
(2) Field catalogue KM 92.

ments are of variable thickness, and in a proper sense there is no well made pottery of this type. Fragments of large dimension prove that they belong to jars of great dimensions. The bellies are decorated by a line of regular thumb impressions running right around the circumference. All the pottery of this layer is wheel turned. In the wet earth below water level it was impossible to follow the walls, but they exist. Foundations of rooms could be discerned by ashes spread in layers, and hearth fires could be identified by the fire toughened clay near them. One fragment of this fire toughened clay bears the impression of a palm leaf, proving for that period the cultivation of the palm. Such is the total archaeological harvest from the small area excavated to this depth. One important fact is determined. The painted ware ceases entirely above this layer and is *confined to it.* It does not appear again until we reach a higher level and an age which is definitely historical. It will reappear there in a different style and form.

C) THE FIRST BUILDINGS. — Above the painted ware layer but still below the water table, is a layer of mixed earth of no definite character. See Fig. 7. There are irregular stratifications of charcoal containing fragments of pottery and stone implements, but no clear evidence for fixing the nature of this layer. Finally above this almost sterile and irregular layer, a half meter below the water table, appears the oldest horizontal cylindrical drain and the first foundations of buildings which can be examined without being continually embarassed by the influx of water, Fig. 2. It is obvious that these are not the oldest buildings; for at Jemdet Nasr the people of the painted ware period made elaborate buildings, which certainly existed in the painted ware period below at Kish. Here they have been completely reduced to wet clay by the rise of the water into this lower layer.

When we reach the level where walls can be examined, the rooms are found to be arranged on each side of a street. Fig. 2. There is no doubt concerning the existence of a street; for all the drains empty into this street from the houses on each side; not one of these drains made of baked clay, traverses this street. The plan which I have prepared reveals lacunae, since the humidity of the soil has ruined many of the walls, some of which, being thin, have collapsed. The plans of the buildings on either side of the street do not agree. On the southern and eastern side (1) the rooms are more numerous and smaller. On the western side (2) the rooms

(1) To the right of the street looking North on Pl. IV. On this side lies the great stage tower.
(2) To the left on Pl. IV.

are much larger. In few places could the communications between the rooms be defined, nor the doors giving on to the street. It is probable, however, in view of the regularity of the walls, that the street doors were placed at regular intervals as in the Sumerian and Babylonian buildings which could be planned, and that numerous rooms communicated with each other in each building. There can be no doubt concerning the nature of these constructions. They are well planned human habitations. The drainage system, the cisterns arranged at fixed spaces along the street, the presence of sinks protected by bitumen prove an admirably designed sanitary installation. Pl. IX, 1 and Fig. 2, *h*. The rooms have pavements of baked plano-convex bricks, in contrast to the walls of sun dried plano-convex bricks ; in some rooms the pavements consist of the kitchen débris, layers of ashes and quantities of domestic pottery. Flint flake implements, large borers, scrapers, fragments of flint sickles made by embedding the short teeth in bitumen are common here. It is clear that now the inhabitants had found some flint deposit from which they obtained large lumps, of good quality and easier to work than the specimens found in the earlier paleolithic culture. Here the microlithic implements are no longer found ; polished implements do not yet appear.

Save for the copper found in the tombs at this level, copper appears but rarely here. It is found as yet only as a casing for bitumen cylinder seals and at the same level in another part of the mound some oxidized particles of copper have been recovered, weighing in all only 30 grams. This almost complete absence of copper is peculiar ; for here we are above the painted ware stratum, synchronous with the Jemdet Nasr culture, where copper was in common use. It is certain that copper was employed with the flint implements.

The bricks of the walls are sun dried, plano-convex (1), and measure $19 \times 13 \times 6$ centimeters, being extremely *bombé* (2). The masons laid them on their flat sides in layers and not in herring bone fashion as in the faces of the stage tower. The bricks of the pavements, baked and unbaked, measure $23 \times 15 \times 7$ centimeters. The size of the pavement bricks correspond to some found at Nippur. The walls still stand 0.80 meters high, and on them stand walls in absolutely the same lines. The superimposed walls

(1) In the Jemdet Nasr period the bricks are small and rectangular, $20 \times 8.50 \times 8$ cm. and $23 \times 9 \times 6.50$ cm. See MACKAY, *Excavations at Jemdet Nasr*, p. 268.

(2) The earliest plano-convex brick used in the palace is more pronouncedly *bombé* than the later type. See MACKAY, *The « A » Cemetery* II 108.

stand also 0.80 meters high, and again on these walls in the same alignment a third series of walls one meter high. The soil in the street above the pavement differs from the soil on the pavements in the rooms. See the sectional drawing, Fig. 1. In the street, beds of organic débris alternate with layers of sand gray and yellow. Apparently the soil of the street has been laid down by sediment precipitated in standing water, the result of an inun-

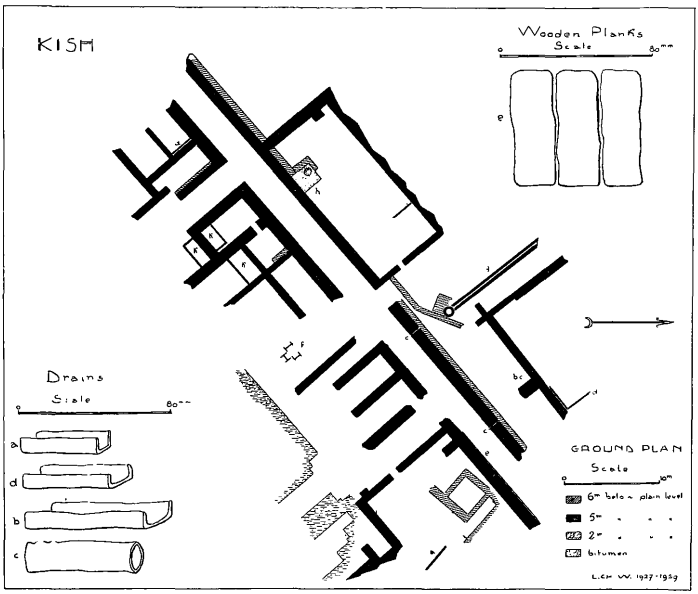


FIG. 2.

dation caused by an overflow from the river (1). At the bottom of this soil the layers of gray clay are not covered by the yellow sand because the waters flowed rapidly. There is evidence of several inundations, and they are of various durations. The layers of organic débris lying over the gray sediment sand layers prove that after the inundation the people returned to occupy the city (2). There is, therefore, no agreement between the organic

(1) Kish in this period stood beside the Euphrates.

(2) In those cases where yellow sediment (precipitated by standing water) lies above the gray sediment, the inundations were of longer duration.

layers in the street and the soil on the floors of the rooms. In the streets the débris would accumulate more quickly because the débris was thrown in the street and is, therefore, deeper. Inside the rooms the alternating layers of organic débris and riverine sediment do not occur. The explanation is that the intruding waters of the inundations did not gain access to the interior of the houses. To bring the foundations of the rooms to the level of the street the inhabitants after each inundation seem to have laid earth on the floors. After each serious inundation the walls were rebuilt wherever destroyed.

It is difficult to estimate the time intervals between the reconstructions of the walls. The system of drainage is horizontal in the houses. The drains are either rectangular, two sides forming a trough with the base as in Fig. 2, *a*, *d*, *b*, or tubular, Fig. 2, *c*, formed by joining several sections. The tubular drains were employed for passing the water through the walls, whereas the open rectangular drains run along the walls in the rooms. Pl. IX, 2.

What purpose then did the open drains serve ? In another part of the mound lay a receptacle made of three pieces, a rectangular long open trough closed at each end. Pl. X, 2. This leads me to conclude that the open drains provided water for fowl, sheep, goats and small animals kept by the inhabitants in their houses, as the nomads do to the present day. The excavations at higher levels prove that if there was a system of evacuating water from buildings, it must have been by means of more solid drains than the open drains found in these deep layers. Similar open drains or troughs were found at Ur and Ashur (in the stratum F) (1). As the foundations grew higher and the buildings were extended upward, naturally the drains were relaid at higher levels, so that I was able to study four drains, superimposed one above the other. Pl. X, 1. Here the two lower drains are open rectangular, the two above tubular. The open drains pass beneath the floor of the room, the two tubular drains above pass into a wall built at a later date.

In the chambers no stone or brick sockets for the door posts were found, either because, stone being rare, they were re-used at higher levels, or the posts were held in place by mats. In studying the débris in the rooms, I concluded that it is the remnant of daily use and was not regularly cleared away. Consequently the floors rose slowly. One can distinguish

(1) ANDRAE (WALTER), *Die archaischen Ischtar Tempel in Assur.*, Leipzig, p. 95 and Figs. 68, 69.

clearly layers of ashes, pottery and mats mixed with kitchen débris. Life at that time was, therefore, extremely primitive.

At the second stage of reconstruction I observed a series of boards placed against the wall, and joined perpendicularly as closely as their rough hewn edges permitted. Pl. XI, 1. The end of this board panel has not been found and I am unable to explain its purpose. The remnant of this board panel is so thin that its thickness must be expressed in tenths of millimeters. The boards are wide and were obviously cut from large trees which grow in the Lebanons, on the Persian plateau, and in Kurdistan.

There is no architectural difference in the three reconstructions of the city, represented by the three sections of superimposed walls defined on page 7. What I have written of the lowest series of buildings applies to the two reconstructions above. I now take up the *objects* found in these *First Buildings*, omitting the pottery which will be studied subsequently. I have already mentioned the flints, but other objects are rare. Firstly there are fragmentary asphalt statuettes. They have at first sight a cruciform appearance, the foot of the cross being hollowed to permit the figure to stand upright. The lines of the extended arms and shoulders form the horizontal section of the cross, and the head forms the top. The modeling is primitive, the body being cylindrical, with no attempt to delineate the legs ; perhaps this is done purposely to shew the dress. All are figurines of bearded men with long hair. Pl. XII. The faces are all characterized by a high long nose separating the large eyes. The face is rudely executed, but the types are distinctively Sumerian. The figurines (1) No. 1 and 2, Pl. XII, have long flowing beards, and the luxuriant hair falls on the shoulders in two long locks. No. 3 is obscure (2), the beard being indicated below the chin by a bulge of the clay pierced with holes. It is also possible that this is the figure of a woman and the bulge with holes represents a necklace. The body is too mutilated to afford any decision concerning the sex. No 4 is too mutilated to permit any further observations. No. 5 (3) is bearded, the hair does not fall on the shoulders, the eyes are surrounded with white paste.

It has been argued that the types with beards represent a race not identical with that represented by the cleanly shaved heads (4). The fea-

(1) Field catalogue V 238 et K 642.
(2) Field catalogue V 246.
(3) Field catalogue K 616.
(4) C. L. Woolley, *The Antiquaries Journal*, Oct. 1928, VIII, p. 417.

tures of these two types of tonsure have, however, too much in common to admit this theory as permissible. The long prominent nose and large orbits common to both classes indicate an identical race (1). At Jemdet Nasr was found a small group in which there is a man cleanly shaved. The types found in the buildings described above are bearded and wear long hair, precisely as on the inlay figures of the palace of later date (2). The mosaic standard at Ur of later date shews the men with shaved heads (3). Both types have such certain physical similarity that the racial identity appears to be certain.

A terra cotta head (4) of unsual type was found in another part of the mound at water level. Pl. XIII, 1, 2. Nothing similar has been found in any period. The nose is so mutilated that it affords no evidence. The base begins above the eyes. The eyes are represented by two flat clay pads, precisely parallel leaving a crease one millimeter wide. They pass over the forehead to the right and left, ending before the ears. These crude slits represent the orbits of the eyes. There is no indication of the mouth. The face is shewn with oval cheeks ending in a pointed chin. In profile the line from the eyes to the chin appears concave. Of the hair there remains only the circular support of what may have been a tuft of hair ; in any case the hair was short ; for there are no traces on the sides of the head and shoulders. The neck is extremely thick and sturdy. As to the place in which this head was found, it lay at a level which separates two Sumerian types. Unless it represents a foreign type, one would suggest a mask. But if this head be taken as contemporary with a certain type of pottery it may be explained in this level after the manner stated below (5).

The figurines of animals are difficult to identify, being rarely complete. They are all domestic animals, equines, ovipara, caprids and canines. The legs, rudely designed, are supports rather than legs. Fig. 3, Pl. XIII shews one of the best examples. Pl. XIV shews a chariot attached to animals of various sizes. These are probably asses, in any case equines. I make this statement because the long ears which fall from the heads (these have now mostly fallen away, being made from fragile clay) prove the equine

(1) The bearded figures of Lagash and other sites which bear Sumerian inscriptions and which are extremely common prove that this type is Sumerian. Heads with complete tonsure accompanied by Sumerian inscriptions are so common as to need no comment on their racial character. See *Archaeologia*, Vol. 70, 150. [S. L.].

(2) See Vol. I, Pls. XXXVI-IX. These, however, have the pigtail and otherwise shaved heads.

(3) See *Museum Journal*, XIX, pp. 224, 226 ; XX, p. 28.

(4) Field catalogue KM 138.

(5) Another head of the same type was found by MACKAY, see *Antiquity*, December 1931, p. 459.

character, and I should not like to employ either the word horse or ass definitely. The attitude of the heads shews that they are guided by reins, and their relatively slender bodies excludes any other class definition. The group is a toy, which gives the impression of great pains to render a naturalistic effect, both in the animals and in the driver, who with arms akimbo drives the team. This toy was removed *in situ;* five animals in front and two behind on either side of the pole. Can one believe that the five animals in front belong to the team and reveal a custom of driving chariots ? All other representations of chariots shew one or two animals on either side of the pole, and it is possible that the row of five animals found stuck together in this position is entirely accidental. These five animals are probably only a supplement to the toy. The chariot, which is complete, will be studied with real chariots found in the tombs.

The cylinder seals recovered from this stratum are few, and belong to series already well known. The designs, executed in outline and synthetically, represent animals and ornaments. Pl. XV, 1, 2, 3, 4. V. 653 and KM 92 (1) belong to the same type. V. 651, has a group of antelopes on the galop, the animal file motif, confined to the early period (2). V. 653 (No. 1) has a file of *cerfs* with long branching antlers. This latter seal has the form of a truncated cone, slightly concave, and is of a fine baked clay ; all the others are made of white paste (as Km. 92), of a hard stone, or marble. These correspond in stratification to those found at Susa. Good examples are published by L. DELAPORTE, *Musée du Louvre, Cylindres Orientaux*, I, Pls. 13-29.

Among miscellaneous objects, attention is called to a small white marble bas-relief, Pl. XIII, 4, extremely friable, representing a small kneeling animal. The body and posterior parts are distinct. The relief gives the impression that it is a goat. It belonged apparently to a larger monument, of which the frame is visible behind the animal. Another relief of the same kind in translucent alabaster represents the legs of a nude person. A copper needle, 20 cm. long, with eye, is the only metal object in this layer. I have already remarked on the absence of metal here in the houses. Copper as a precious metal was laid in tombs beside the dead. The only objects of decoration are beads of paste and cornelian scattered in

(1) KM 92, found in 1929-30 (eighth season), belongs to the period of painted ware, 3 meters below water level.

(2) This *motif* does not occur on any seals found at Kish below water level, but it is common on the Jemdet Nasr seals. Their absence here is surely accidental.

the rooms. Lapis lazuli was known then. The skeleton, No. 426, in trench Y, lay on a pavement apparently outside the tombs, in view of the abnormal disposition of the body, which lay on its back with knees drawn high. With this body, near the right wrist, lay a bracelet of lapis lazuli and cornelian beads. Pl. XI, 2. There was also a large flint borer by this body, the long point parting from a mass large enough to fill the hand has a double cutting edge like an auger. Lapis lazuli appears to have been imported from the north-east.

Although I found obsidian flakes I could not be certain that they belong to this level, but I believe obsidian was known at that time, and may have been common, considering the fact that there were clearly relations with the north, where obsidian was known. Bone and terra cotta spindles, clay and bitumen balls, jar stoppers mounted in shell, were encountered here.

The Pottery

The study of pottery (1) must begin with the level in which fragments were found corresponding to the Jemdet Nasr ware. See pp. 3 ff. In the excavation by hydraulic methods which reached that level, I found only two jars sufficiently complete to restore the shapes. They belong to the class which have large flat neck brims, slanting toward the exterior, instead of having the rounded edge.

The necks are short and rest on shoulders which slope downwards at an angle slightly more than 90 degrees. The shoulders end with a ridge which carries four pierced ears, regularly set at equal distances around the ridge, the so called lugged pots of the period. The bellies slope downwards and inwards at a gentle angle and join the bases. I found no jar with base, but by analogy with the those of Jemdet Nasr this base was flat without edge. The diameter of the largest jar is about one half the height; in the smaller it is a third more than half the height. These two jars, therefore, are true to the Jemdet Nasr type; it was found there in great numbers. This type has variants; for example the brim may stand directly on the shoulder, as in Fig. 3, Pl. VIII; the shoulder may be very short and the belly join it below in keel form. These are particularly mentioned, not to speak of types quite unusual of which I found only small fragments (2).

(1) See Pls. I, II.

(2) The various types all appear in E. Mackay's. *Painted Pottery from Jemdet Nasr.*

As to the colours, one specimen is monochrome, and the design is composed of sections which contain checquer board figures, lozenges and slanted lines in uniform brown red. The colour is laid on a clear clay base. A second specimen is polychrome in red and brown on the same base, with similar

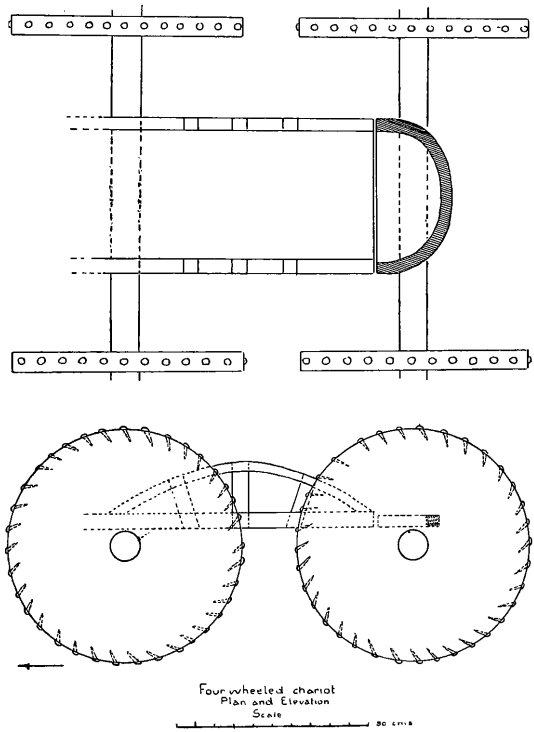


FIG. 3. — (See p. 30-31).

designs. In both specimens the paint covers the brim and extends for a short distance inside the mouth. On the other fragments there are five more designs and clearly the geometrical decoration was not the only one in use.

The stratum above the Jemdet Nasr ware at Kish yielded fragments which depart so much from standard types that a classification is difficult, both for the forms and the method of fabrication. The Jemdet Nasr

stratum is covered by a layer of mixed soil without any peculiar characteristics. Above this, after the painted ware entirely disappeared, appear other types of ceramic which will be studied in order ascending to the surface of the mound.

A) A ceramic represented by fragments having coloured reserved slips. Although these fragments are numerous no complete vase could be assembled, and no conclusion can be obtained here except by referring to complete examples found at Ur. These are straight necked rimless jars, and have oval bellies (1). They have slips over the entire surface ; a comb was then run over the slips so as to leave only parallel lines. The colour is always clear brown. It cannot be said that the lines are parallel at the top and diameter or oblique ; for although they are oblique on the specimen from Ur, that may be due to the fact that it has a lateral protuberance for pouring, which may have modified the direction of the lines.

Aa) The long narrow goblet, Pl. XVI, 4, was rarely found complete. These occur in compact masses and are confined to a layer one metre thick immediately above the water table. It corresponds to a stratification at Ur and Al'Ubaid II, which is extremely slight (2). The type occurs at Tepe Alyabad but no information has been communicated concerning the stratification there. This type was in use at one period only and is ephemeral.

B) The next series is a vase with uniform red slip, poorly laid on a badly baked clay texture. These vases are often found smashed in the ash layers. Pl. I, 8.

C) The incised ware extended over a considerable period and is ubiquitous. Most of the specimens have the same flat large mouths as the lugged painted pots decribed above (p. 12). The bellies are higher, having neither ridges nor lugs on the shoulders, but there is an imitation of a handle, consisting of a flat rectangular piece of clay set parallel to or perpendicularly upon the shoulder. The incisions are made in geometrical style between the shoulder and the collar, in triangles and points ; these occur in registers separated by parallel lines. Pl. I, type 9. This kind of decoration, taken directly from the incised vase, occurs in reliefs, composed of lumps of clay on the bellies, stuck on with the thumb or with a round stick. They occur at regular intervals ; these lump projections are never parallel to the axis. The incisions usually made on the surface sometimes

(1) C. L. WOOLLEY, *The Antiquaries Journal*, October 1930 (Vol. X, No. 4), p. 339.
(2) C. L. WOOLLEY, *op. cit.*, p. 339.

cut deeply into the texture, even piercing it, and causing a decoration « *à jour* ». The designs are always triangular. Since this manner of decoration diminished the solidity of the objects, it was applied to thick textures only. Pl. I, 16 and Pl. XVI, 5.

To this incised ware belong the censers or *niknakkus* (1). Pl. I, 15 and Pl. XVI, 6. These objects attain a height of 0.60 meter and a base circumference of 0.30 meter (2). The diameter of the top, which widens from the body, as does the base, is naturally larger than the diameter of the central part. The diameter of the top is 2/3 that of the base. Pl. XVI, 6, shews the lower part of one of these censers recovered at water level. They are hollow from top to bottom and are without bases. Parallel ridges run around the circumference at regular intervals, double or in triplets, and the spaces between them are pierced by triangles, usually passing entirely through the texture, leaving apertures at regular points along almost the entire surface, except in the spaces above and below the uppermost and lowest ridges. These triangular apertures are made with a metal blade, or a sharp flint knife. The apertures suggested a censer. This is possible, but I do not understand why the apertures occur both below and above, the object of a censer being to permit the incense to escape as near the top as possible ; nor do I understand why the top is open. Such an arrangement would cause rapid combustion of the incense. Both of these are objections to the identification with a censer. My opinion is that they are supports for vases and bowls. There is another difficulty in the explanation ; they never occur except in the tomb stratification, below the flood layer (3). Objects of this kind were found at higher levels at Assur, Fara and Tepe Alyabad.

(1) Sumerian *nig-na*, Accadian *niknakku*, *niknaku* (CT 16, 35, 18). This ideogram occurs in the late period only and probably refers to the tall slender stands usually mounted by a cone, GRESSMANN, *Texte und Bilder*, figs. 534-5. On Fig. 533, *ibid.*, the top is flat and flames issue from it. In Assyria the part which contains the incense seems to be the cone shaped or rectangular receptacle on the top. But since the shape has apparently descended directly from the early Sumerian type, these tall stands with widening bases may really be hollow from the base upward and the incense was as placed on coals at the bottom. The early Sumerian censer permits the fumes to issue by apertures along tne sides beginning shortly above the fire at the bottom, whereas in the Assyrian derived types the fumes escape by a cone shaped colander at the tops only. See JRAS 1930, Pl. IX, No. 4 and p. 604. The ancient Sumerian word was *masab*, usually made of reeds ; STRECK, *Assurbanipal*, II 282 n. *g*. [S. L.].

(2) The large specimen found by MACKAY in 1925, and now in the Ashmolean Museum, is 0,78 meter high with base diameter 0,45 meter.

(3) The explanation for the total disappearance of these well made objects, which I regard as censers, is that in later Sumerian and Babylonian times the *masab* (latterly called *nigna*) was made of reeds, and necessarily the reed fabric was protected from the fire by pitch. In no case could the fire consist of more than a coal placed on inflamable but slowly burning incense. Assurbanipal made one of gold and *pasallu*, STRECK, *ibid.*, II 282, 27. For the reed *ma-sa-ab* in late Sumerian, see FÖRTSCH in the *Hommel Festschrift*, p. 33, Pl. V, Obv. 1-3 ; VIROLLEAUD, Z. A. 19, 385 ; B II 9. A Kish syllabary gives a long list of the *gi-ma-sá-ab*, made of rumex

D) There is also another incised ware in which the vases are without collars. Pl. I, type 4. They may be classified as follows.

a) The mouth is protected by a ridge attached directly to the collar, and there is no neck.

b) The ridge of the mouth is lower than *a)* and is attached directly to the shoulder. This type has four pierced lugs and there is also a ridge on the shoulder. They have no collars. Second design of type 4 below.

c) Pl. I, type 5. These jars have short collars, without rims, but the edges have perpendicular creases.

All these three incised types have thick walls made of a fine and hard baked clay. But not one of them has been recovered whole. The forms have been reconstructed from fragments.

E) There is also a kind of pottery, found strewn irregularly in this layer, made of a black paste fired at high temperature. The fragments obviously belong to tall goblets ; they are decorated with lines rubbed on by means of a bone or piece of hard wood. Pl. XVI, 1, 2, 3. The lines are regularly arranged to imitate the petals of a flower around the ovary, or they are merely parallel. The work is negligently executed, due to the labour of rubbing the lines on a hard surface, which prevented firm and true motion. Had the ornamentation been executed before firing, the lines would have been deeper. This method has been found at Jemdet Nasr and Ur, but this kind of ware at Kish can hardly be assigned to the earlier period of the painted ware ; this would mean that the products of that isolated period have survived into a later layer (1).

F) I should note also several fragments with creased collars differing from the type 5 described above under *Dc)*. The creases are closed at the top by the rim, which is as large as the ridges separating the grooves. This style is found in the ware designated as Susa II (2). Conjointly with this ornamented ceramic there is an extremely rough kind, consisting for the most part of cups poorly fashioned, and of dishes. See Pl. I, types 1 and 1*a*. These are domestic pottery and they continue over a long period, being found mixed in the earth of all levels.

wood *(umṣatu)*, tamarisk *(ašlu)*; the *masab* for filling with incense *(ṣênu)* ; for expiation *(puṭṭuru)*. A Tammuz ritual orders a [gi]*ma-sá-ab* to be filled with grain, REISNER, SBH. 77, 30. In view of the Assyrian forms of the censer, which clearly descended from those of the ancient period, it is difficult to deny this identification. All reed or wood censers have naturally perished. [S. L.].

(1) The Jemdet Nasr civilisation did not end with the period of the painted ware, as my own excavations there have proved. This site seems to have been reoccupied for a short time.

(2) J. DE MORGAN.

CHAPTER II

The Y Cemetery. — The Tombs. — Method of Burial. — Furniture of the Tombs. — Chariots. — Domestic Life. — Epigraphy and Glyptique. — Layer of the Flood.

Through a depth of four meters below the Flood Stratum, the earth is full of interments on the east and south side of the street which traverses the constructions on the lower level (1). This important fact led me to believe that the burial area was well defined and limited and that the burials do not belong to the period of the houses. The excavations of 1930-1 caused me to modify my opinion. For in case of burials 625 and 688 I found walls built above them at a subsequent period. This proves that these tombs were placed in buildings contemporary with the burials of the dead. In other words the dead were buried in buildings of their own period. This conclusion is substantiated by the fact that the pottery *in* the tombs is precisely like that in the earth *outside* them. For example the red slip ware is found *in* tombs and *outside* them at the same level. A subsidiary fact should be mentioned ; the earth outside these lower burials contained pottery of the types 4 and 5 together with the reserved slip pottery which is never found in the tombs between 3-6 meters below plain level.

The Construction of the Tombs

No burial was recovered in the soil sufficiently well preserved to permit me to reconstruct it in detail, particularly with reference to the manner of closing it. The burials lay in the rooms of houses, Fig. 2, K ; these were

(1) That is on the side nearest the *ziggurat*.

either the living rooms of those who died or rooms specially built for interment. The burials usually lay in a corner so that two walls provided two sides of the tombs. The other sides consist of a wall made of a single layer of bricks ; so burials 491, 480, 479, 496. If the rooms had no paving, the floors of the tombs were made of bricks or pottery sherds. The whole was covered by a vault ; the vaults were invariably crushed so that I could not determine how they were supported on the walls. The area of the ruined houses could not be planned with sufficient detail to determine precisely what parts of them were reserved for burials.

The sizes of the tombs were variable ; most of them conform to the size of the body ; those containing a large amount of furniture were larger, 2.40×1.80 meters in the case of Y 494. The bricks of the tombs measure $23 \times 14 \times 9$ centimeters.

Method of burial

The burials follow a definite custom and are the same in all the tombs. The body was wrapped in a mat, remnants of which are found about the skeleton ; the bodies lay in a half drawn up position, placed on either the right or left sides indifferently, and without any definite orientation whatsoever (1). The hands placed near the heads grasp a cup from which the dead where supposed to drink. All around the body, without any consistent order, lay the personal belongings of the dead, weapons, jars, ornaments. Traces of cloth tissue, attached to a metal vase by oxidation in grave Y 529, authorize the statement that they were wrapped in their garments. The objects most dear to them were wrapped inside the mats. At Kish there is only this one kind of burial in the Y cemetery. At Fara (Shuruppak), which shews the greatest affinity with it, the same custom prevailed, but there burials in sarcophagi are found in the same period. At Ur the excavators observed wooden coffins also. It is possible that the custom of burying in wooden coffins existed in the same Y cemetery at Kish ; for I also noted traces of wood here.

The position of the body was the natural one of a person in sleep. The rituals which attend the burial reveal a belief in the future life, and that the person might not suffer in the after life they equipped his body with all the objects which might alleviate his existence in the « land of no return »,

(1) The same is true of the bodies in the great cemetery A.

and which he had made use of in this life. Existence in the life beyond was conceived in material terms, largely, and they provided the body with the objects familiar to the period, particularly copper objects. The absence of gold and silver may be attributed to the poverty of the inhabitants, or to the accident that the richer tombs have not been found. It cannot be inferred that they were not acquainted with those metals. The dishes and vases contained the usual cereals, meats and drinks of daily life.

I come now to the human sacrifices which undoubtedly existed at Kish and Ur. They resulted from the belief in the necessities of life in the after world corresponding to those which the individual had at his disposition on earth. In case of a great person he possessed not only his personal furniture but servants, chariots and teams. He must preserve the dignity of his position in the next world. Human sacrifice was not a necessary liturgical rite but the continuance of a dignity ; only the beings which the person had in his service, servants and soldiers, dancers, musicians, accompanied him in death. I cannot say whether his wife or wives came into this category. Apparently most of the tombs contained but one skeleton. Few contained several skeletons and these belonged surely to princes who alone had servants and driving animals. Here alone are encountered chariots and abundance of copper.

Furniture of the Tombs

The quantity and value of the tomb furniture depended entirely upon the affluence of the person, and I think that they buried with him the most important of his personal belongings. The strictly necessary things consist of a jar or cup which he grasped in his hand and two or three jars designed to contain his provisions. There is, therefore, no relation between the duration of the journey to Arallû and the quantity of provisions. The dead had either little or much to eat and drink. Although the length of the journey to the place of last repose was the same, religious belief was strong enough to remove doubt concerning the sufficiency of the provisions in either the luxuriously equipped or the poorest burials. Neither was there a fixed rule concerning the forms of the jars ; there are the usual jars which correspond to the bottle, glass and plate of our modern tables ; at a later period the champagne dish appears to be necessary (1). The journey was entirely by

(1) Objects found in the palace cemetery, MACKAY, *Cemetery « A »*, I, Pl. I, B 29, 32, 33 and Pls. XI-XII. See *ibid.*, pp. 24-7. MACKAY calls them braziers.

land; no trace of boats for voyaging by water has been found (1). I observed no burial equipment near the bodies of servants sacrificed with their masters, probably because as in life they supposed that their masters would provide for them in death. In all these details I observed no material difference in the burial rites of the tombs; slight variations in the pottery exist attributable to a temporary fashion, but they all belong to the same period, regulated by indentical superstitions.

I do not, therefore, describe the burials one by one, selecting only certain typical examples. I particularly regret not being able to include any tomb with a chariot, because their larger dimensions exposed them to greater damage than the smaller ones. Excepting the positions of the chariots, I could not fix the allocation of the objects with certainty. In the ordinary tombs observations on the positions of the objects and their forms could be made; more often the jars and skeleton were in such state of disintegration that it was impossible to remove the clay and copper vessels. Ordinarily each burial contained at least two or three large spouted jars and a variable number of bowls without weapons or ornaments. The large jars might be replaced by bowls and dishes whose number could be increased to contain the habitual quantity of provisions. So in burial Y 381. The bowls and dishes of type 1 and 1*a*, Fig. 4, are made of rough paste, badly baked; often they have been piled one in the other, and consequently contained nothing at all.

Y 390 contained the copper support of a vase which stood upon a frog (Fig. 4 *bis*), and several copper vases or bowls whose shapes were hard to define. A section of the vaulted roof was intact. The floor consisted of the pavement of a room.

Y 463. Fig. 5 *b*. The skeleton lay on its left side, the hands placed to the face; fifteen jars and bowls lay about it; at its feet lay a copper mirror and a shell. Behind and near to the head lay a stone cup which should be grasped by the hands. The neck had a necklace of beads, and the waist a bead girdle.

Y 494. Fig. 4. The hands held a stone bowl to the face, and the skeleton lay on its right side; the equipment lay almost entirely in front. In the centre lay a copper trellis wire support, (Pl. XXI), and a cylindrical support

(1) The souls of the dead, however, led a miserable existence in Arallû, the land of silence, dust and sleep. « Their food was dust and clay their nourishment ». But those certain ones who had lived well and righteously or had died in battle slept on couches and drank pure water. Only those souls who had descendants to pour water at their graves lived in peace. See *Descent of Ishtar*, 8-11; *Epic. of Gilgamish*, XII, Col. VI. [S. L.].

(Pl. XXI), each holding a stone vase. There were also a copper basin and ewer, a stone vase, a shell lamp, and the usual clay pots.

The bases from pots of type 5 are not counted with Y 463 (Fig. 5 *b*) ; they had fallen into this tomb and do not belong to the priod. The same

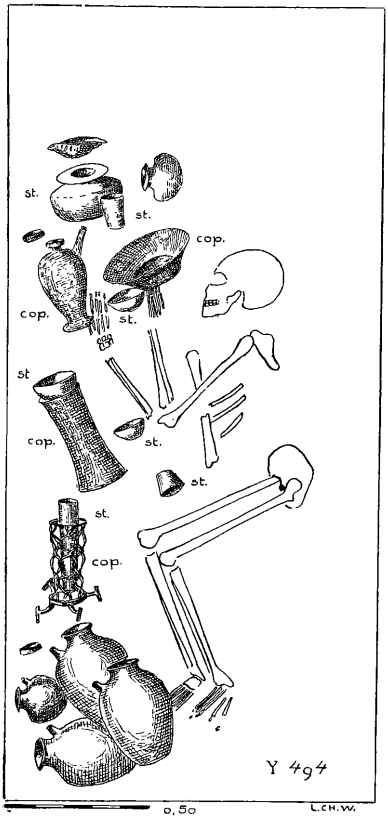


FIG. 4. — Grave Y 494. (See p. 20, and pp. 22 f., p. 27).

holds good for other tombs into which fragments of the surrounding deep layer had fallen. For the period of these goblets, see page 16 and Pl. XVI, 4. Such are the general remarks, serving to illustrate the burials and I now take up an investigation of the objects in detail.

The weapons

The inhabitants of the first period used flint weapons, after which they forged metal weapons, when copper became known to them, but both classes existed contemporaneously ; copper was still rare and flint was still the prevailing material. One cannot say that the forms of metal weapons were derived from those of stone. More probably the forms were the result of practice. Not until much later did they apply mechanical and aesthetic principles which caused them completely to abandon the stone models. The tombs and graves contain daggers, lances, axes ; a dagger (Y 529) 38 cm. long, forged in two pieces, has the blade driven into the handle, which is 18 cm. long and 7 cm. thick, and supported by two lips. There is no tang. The handle has a concave shape to facilitate the grasp, and is forged in lozenges like open lace work. A pommel not exceeding the thickness terminates the handle, and is decorated by a rosette with eight petals of open work. The blade is large and heavy (1) (Pl. XVIII, 1). Nothing similar has been found at Kish, but daggers were also found in the A cemetery (2).

The lances are flat and of variable sizes. They have a short tang driven into the handle, which must have been strongly wrapt with bands, for there are no signs of rivets. These lances reveal no trace of longitudinal ribbing ; the base is always rounded. If this weapon was used in close combat, the wooden handle must have been quite heavy, so that it could hold the blade securely and give force of penetration to the muscular blow of the combatant. If it was used for fighting at a distance, it may have been attached to a reed and thrown as a lance or spear. The richer tombs always have one specimen.

One cannot say that the copper axe was derived from the stone celt in a manner so obvious as those of Susa I (3). The Kish axes of cemetery Y are flat and short, the cutting edge hardly issuing from the mass. The heels end in a round point. The method of attachment to a handle cannot be suggested as no figured monument affords any aid. These flat axes have been found at Jemdet Nasr (4) and at Tepe Alyabad ; at the latter site it is found with the axe having a hollow socket (5). They seem to be derived

(1) This dagger is now in the Field Museum.
(2) E. MACKAY, *Cemetery « A »*, Part I, p. 40 ; LANGDON, Vol. I of this series, p. 78.
(3) J. DE MORGAN, *Memoires.*, T. XIII, p. 11.
(4) See MACKAY, *Report on excavations at Jemdet Nasr*, Field Museum, Pl. LXXV, No. 3136.
(5) J. E. GAUTHIER et G. LAMPRE, *op. cit.*, p. 87.

from the so-called stone peduncular axe (1), commonly used in Mesopotamia and Elam. The shape of the peduncular axe is more evolved than the primitive massive celts. The peduncle served as a projection for attachment, which leads one to suppose that these small copper axes were driven into a wooden handle and secured somehow. Only one is found in each burial.

The existence of the bow and arrow in this period cannot be affirmed ; no traces of bundles of arrows, of bows and arrow heads were found. Certainly had they been in use quantities of arrow heads would have been found in the tombs. Neither do they occur in the contemporary civilisation of Shuruppak (Fara).

The sling must have been known, judging by the oval clay balls which occur in great numbers. No stone or metal mace heads figure among the antiquities here, which is incomprehensible ; no weapon is easier to make or more effective.

Implements of flint and bone

In the ruins of the city just above the water table flint implements abound (2) ; borers made of a simple chip, with point produced by artificial means ; scrapers with notches, made from flakes, serving to work bone ; sickles, whose flint teeth are in sections embedded in line in bitumen, mounted on wood (3), the primitive flint sickle. I cannot understand why the flint sickle displaced the baked clay sickle, which does not occur above the Jemdet Nasr stratum. Flint sickles are found on the pavements *in situ* at the bottom of the tomb stratum. The shaping of the wooden frame and of the flint teeth, the setting in bitumen attached to the frame, offer great difficulty and do not provide a sickle capable of offering any greater resistance than the baked clay sickle easily made in a single piece. There is certainly nothing to chose between them in point of utility. The problem must be judged in the light of the mentality of the period. The flint knives are numerous, and the edges are well disengaged from the nucleus. Beside these characteristic implements there are numerous formless fragments and rare celt axes, unpolished. The axes are too few to afford a basis of

(1) Found at Jemdet Nasr, 1929. See DE MORGAN, *La préhistoire orientale*, T. III, p. 70 and *Mémoires*, T. XIII, p. 20, fig. 94.

(2) L. CH. WATELIN, *L'Industrie lithique de Kish*, *Anthropologie*, Vol. XXXIX (1927), pp. 66-76.

(3) *Ibid.*, p. 73, No. 8.

study. Bone implements undoubtedly had many shapes but only piercers have survived (1). These are made from the distal end of a sheep's metapode. Those made from ribs of mammals must have existed, but they perished in the wet soil. As remarked, not one of these flint implements has been found in the burials. They have been mentioned, because I believe that flint was worked, commonly, in the period of the Y cemetery.

Metal implements

The most characteristic implement is the hand-saw. (Pl. XVIII, 2). It has the shape of a lance with rounded base to which is attached the tang, never more than 7-8 cm. long. The tang has no trace of rivets and one may well ask how it was sufficiently secured to resist the pull and shove against the wood. Pl. XVIII, 3. Oxidation has left so little trace of the teeth that they cannot be measured. One can see that they are small and crowded closely together. The effect is rather that of rubbing than cutting, and the handle could be secured firmly enough for that. The longest copper saw found measures 50 cm. ; the sawn planks so far found, those used in the chariot wheels, are of less diameter than the length of this saw. The saws were thin enough to be flexible. They were found only in burials Y 357 and Y 529, where there were chariots. The copper gravers or chisels of variable length have rectangular bodies thinned to a cutting edge, and were in common use. Noticeable is the fact that the head never shews signs of having been struck with metal or stone hammers. Unless the instrument is a graver the force necessary to cause it to cut material must have been obtained by a wooden mallet (2).

Other implements were so badly oxidized that they cannot be defined.

Goads used to urge animals are represented by metal heads with two prongs ; these have round tangs, set into long wooden shafts. Formerly these were erroneously taken for heads of javelins, but the two prongs would be an obstacle to penetration (3). See Pl. XVIII, 5 ; they were found with chariots only.

(1) L. Ch. Watelin, *L'Industrie lithique*, p. 69, Nos. 1-2.

(2) For chisels from the « A » cemetery of a later period, see Mackay, *ibid.*, p. 42.

(3) Found also in cemetery « A » ; Langdon, *Excavations at Kish*, Pl. XVIII, No. 3 ; p. 77, taken for forks.

Household Utensils

The only object which I assign definitely to this class is the copper spoon, Pl. XVIII, 4. This model affords the evidence for the use of wooden and consequently bone spoons by the Sumerians, more easy to make, but these have perished in the damp soil.

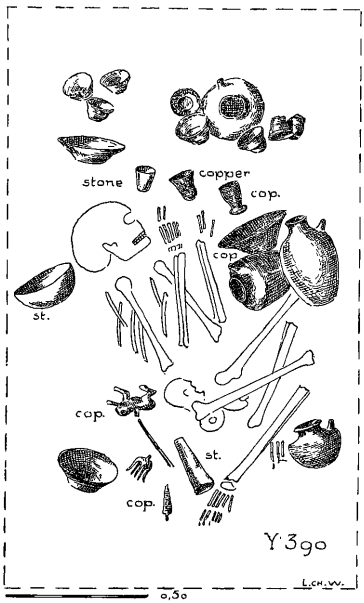


FIG. 4 *bis.* — Grave Y 390. (See p. 20)

Lamps ?

Archaeologists have given this name to large sea shells which have been scooped out, and whose shapes are sometimes reproduced in copper. Pl. XIX, 7, 8, 9, 10. This is possible, but if so they should shew traces of the slowly burning wick which would have lain upon the convex projection, of calcination at the bottom and of particles of the combustible substance, at any rate in the copper specimens. At Kish I have never observed

anything of the kind, although the shells occur frequently in the graves of the Y cemetery. Why should the Sumerians have employed such rare and precious substances, when they could have modelled as many as they desired from clay ? Moreover the shells have round bottoms rendering it impossible to set them on a table which also leads me to reject the idea that they are lamps. At a later period occurs a similar receptacle of alabaster, often ornamented with a bearded bull's head. But alabaster withstands fire less than almost any materiable conceivable ! I think that the definition of this object should be held in abeyance until further definite evidence.

Harpoons

In view of the great size of the fishbones recovered here, it is astonishing not to find harpoons, but only large *fish hooks*. Also a few stone net sinkers, pierced or provided with a crease, proves at least the existence of net fishing at that time. There is reason to infer that they caught the large fish, now vulgarly known as Fish of Tobias, which still swim the rivers and streams of the plain, by hand, when they came to warm themselves in the low waters of the banks. The dimensions and malleability of the copper fish hooks would render them unsuited to land fish of this size with hook and line.

Receptacles

Copper vessels of various forms are frequently found in the burials. Pl. XX. In many cases oxidation had eaten away the walls of the vessels, causing them to collapse. The series comprises goblets, plates, basins, and ewers with long spouts, but without handles. The only attachment for lifting them occurs on two similar jars which have four pierced double ears on the sides, through which a cord passed. Pl. XX, 2, 3. There is no connection between the shapes of the metal and clay receptacles ; for the shapes of clay vessels did not lend themselves to the solidity necessary for metal, and the founders of metal had a tendency to distinguish their products from those of the potter and availed themselves of unusual shapes not possible in pottery. The forms of the copper vessels are, therefore, more capricious.

Supports

The copper supports served to keep stone bowls and jars in position. The jars were, themselves, provided with bases sufficient to enable them to stand alone ; the supports were only luxuries, employed also in our times. The support most commonly used has the shape of a hollow cylinder, widened at each end, the bottom being of greater diameter than the top. Five specimens of this object were recovered, two of which could be preserved (1).

Pl. XXI, 1, shews a support standing on a frog of natural size ; the frog is founded in a single piece, an unique object (2). Its back supports a stem 30 cm. long in three pieces. At the top it spreads into five petals representing a flower (3). The stone bowl was placed between the petals. This support was never used as a candle stick as has been thought. Here the representation of the frog occurs in very early times and appears later as an amulette. The ability of this amphibian to live under water and on land excited the admiration of the ancient Sumerians, as it did that of the Central American who also commonly represented it in art. The pose of the animal, position of the legs ready to plunge are remarkably well conceived, and the body has a natural expression wholly extraordinary. The eyes protruding from near the top of the head have bone or shell pupils encrusted in the copper. At the beginning of all artistic movements details are eliminated, whereas in the period of decadence the abundance of details renders the subject unnatural. This is especially true of plastic art. The sculptors, who had behind them the traditions of sculpture in small stone attained immediate success when they moulded in metal. Henceforth sculpture, while retaining a fine standard, will become essentially conventional, and even in the best period of Assyrian art never again shall be found the power of expression seen in this frog or in the figurines set on the rein guides of Kish and Ur.

Also the copper wire support (Pl. XXI, 2) in burial Y 494, presents a pleasing work of art. Its height is about 26 cm., but it was slightly crushed. This burial was particularly rich in objects ; it contained another

(1) Now in the Field Museum, in the Bagdad Museum and in the Ashmolean Museum.

(2) Now in the Field Museum.

(3) This flower style is extremely ancient, being found also as a decoration on the pottery, Susa I. It was derived from the lotus which floats on the waters of the marshes.

cylindrical support, a large copper basin with ewer and several copper vessels. Pl. XXI, 3.

Ornaments

These consist principally of stone and paste bead-necklaces and girdles. The necklaces, Pl. XIX, 4, 5, 6, are single strings of beads, but several strings are sometimes found on the neck ; there are no long beads pierced by several holes which would indicate necklaces of several rows. The waist bands are often decorated with beads separated by cores of large sea shells. These cores are either natural or creased horizontally. The girdles have several rows, since the weight of the shell cores pulled the girdle downward. I suppose that the bead rows were attached to a leather or cloth belt ; in any case the position in which they are always found on the waist of the skeletons proves that they are girdles. Bead bracelets are also common. The beads are fashioned from quartz, cornelian, or lapis, in form of thick rundles rather than balls ; the beads are pierced by large cone shaped holes, the points of the cones meeting at the centre from each end. The lapis beads are larger than the cornelian and quartz beads, since they are easier to pierce. The disposition follows no colour scheme, nor are the largest beads used to create points of division. Some necklaces shew an order in the sizes of the beads, and some have beads entirely of the same kind. The paste beads are covered with a thin glaze produced by melting one of the substances of the paste. These occur in graves of the poor only and are usually found disintegrated by water.

Small cardium shells (1) containing colouring matter, sulphur, antimony, iron oxide and malachite, prove the use of paints for colouring the face, but nothing is known about the disposition nor the choice of colours.

Ear-rings and finger-rings of metal or bone were probably worn, but their minute size rendered preservation impossible. Burial Y 499 contained two copper hair pins to whose heads were attached rosettes.

Mirrors

The Sumerian women used copper mirrors to aid themselves in applying paints to their faces ; certainly there is every evidence that these metal

(1) Also in « A » cemetery, MACKAY, *ibid.*, p. 14.

objects are mirrors. I do not believe that they are palettes for paints ; for they have handles, useless on a palette, and never bear traces of colour substances which leave indelible traces. The furniture of tombs containing these objects clearly appertains to women and they are never found in burials which are obviously those of men, as the presence of chariots and other objects proves. Burials Y 370, 469, 463, 481, 522 where mirrors were found with necklaces and often paints, contained no weapons. The mirrors have variable sizes, the largest being 29 cm. in diameter. Pl. XIX, 1, 2, 3.

Stone *Mortars* and pestles were found in the graves, always of small dimensions.

Press and Roll Seals

The presence of seals in the burials similar to the seals found in the houses of the city ruins is another evidence that the burials belong to the same period as the buildings, a fact already deduced from the pottery. The seals belong to the type called roll seals with animal file decoration, deer, antelopes, batrachia. Pl. XV. They are engraved by simple tracing with a sharp implement. The seals are either very thin and long, or short and thick. Only two alabaster press seals were found, both from one tomb (1). These formed part of a necklace much worn by use and may belong to an earlier period ; preserved as ornaments.

Stone Vessels

I have not classified these vessels with the copper and clay vessels because the forms are peculiar to the material ; they may be classified into a limited number of forms. The material is usually a soft stone, greenish steatite, white or rose tinted limestone, rarely alabaster. Although the sculptors produced perfect shapes, they had not yet the means of cutting harder stones such as obsidian and lapis lazuli as did the sculptors of later periods. They made the best use of the means at their disposal and stone vessels are not rare in the burials. See Pl. XXII. The series consists of elegant

(1) The two press seals found in the Y burial are published in JRAS 1930, p. 604, Pl. X, No. 2, upper left and right corners. It is obvious that these two seals are extremely primitive, and so far as evolution of culture is concerned they are more primitive than those from Jemdet Nasr, of an earlier period. Moreover all the seals found outside tombs in the Y cemetery are more elaborate and less crude. This is extremely difficult to explain. [S. L.].

bowls, long goblets, jars with wide flat rim and large belly. The bowls and goblets were intended to contain liquids, and very often the hand of the skeleton grasped a stone vessel, being always the vessels held by the copper supports.

Chariots

Three of the tombs contained chariots. Pl. XXIII, 1, 2. Two two wheeled chariots ; Y 357 one four wheeled chariot ; Y 529, three two wheeled chariots, Pl. XXIII, 2, or possibly one two wheeled and one four wheeled ; for it was difficult to be sure in this burial. Only Y 237 produced a specimen which could be studied in detail. This is the one described here. This one lay five meters below plain level. It lay on a pavement made of baked plano-convex bricks, which were sadly decomposed in the soil near to the water table. The platform of the chariot, supported on the two axles had been placed on a pile of bricks beneath it. Toward the front on each side of the pole there were two pairs of skeletons of equines with their leather harnesses, and about it, except behind, lay at least five human skeletons. Since the skeletons of the equines lay on a higher level than the chariot, I suppose that the chariot was first installed with the brick support (1), the humans sacrificed were then laid with the dead man beside it, and then the four equines were slaughtered.

This tomb had a vaulted roof, which like all the others had collapsed under the weight of the ten meters of earth above. The platform of the chariot was made of wood, 45 cm. wide, terminating at the rear in a second small platform surrounded under the back end by a copper band. On each side of the platform attached to the rail stood stout spokes attached to an arc band to protect the load of the vehicle from rubbing against the wheels. I am unable to give the length of the platform, since it was totally decayed in front. The wheels fitted on to the ends of the axles have a diameter of 50 cm. The axles are 90 cm. long. and have a diameter of 8 cm. The wheels were kept in position by wooden pegs, and are made of irregular pieces of boards held together by transverse boards attached to them by wooden pegs. The irregularity of the boards is explained by the size of the copper saws found with this chariot ; they are only 26 and 35 cm. long.

(1) The tomb was constructed so as to permit the chariot to descend to the bottom on an inclined plane ; the animals lie on this incline and consequently lie at a higher level than the chariots.

These were not long enough to saw a log of the diameter of the wheel. The circumferences of the wheels have rows of copper pins five millimeters apart, driven into a leather (?) felloe, which protected the wooden wheels.

The dimensions of the pole could not be determined, and its form, straight or curved, was not evident. Apparently it was longer than the ani-

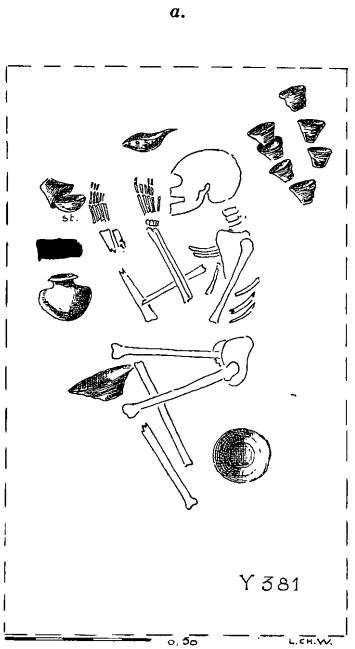


FIG. 5. Grave Y 381. (See p. 20).

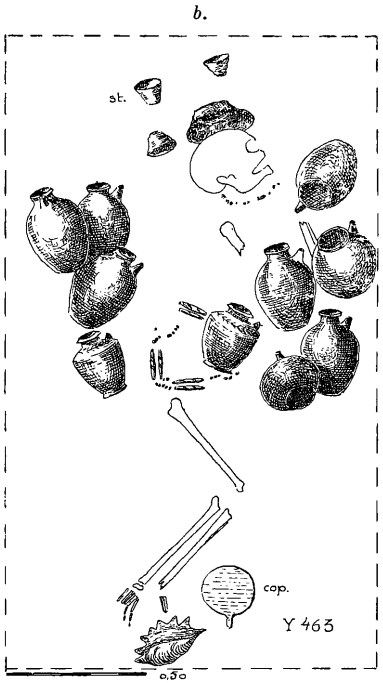


Fig. 5. Grave Y 463. (See p. 20).

mals, consequently three meters. The end had a pommel or bulge furnished with a metal case which I could examine. Fig. 3, page 13.

Behind the withers of the animals the pole supported a wooden yoke five millimeters thick ; the yoke is square in section, curbed in bow fashion right and left. The rein-guides were in place on the pole in front of the yoke. The idea of a pivoting front team had clearly not occurred to them

and the driver had to turn in a wide circle, or in case of restricted space must turn the chariot by hand. The manner of harnassing has been studied by COMMANDANT LEFEBVRE DES NOETTES (1) from whom I communicate the following remarks. The equipment based upon the pull from the neck includes the collar strap, the yoke, pole and bridle, connected so as to form a control of four elements, traction, guide, backing and driving. The principal element of traction, the collar, was a large pliable leather band attached to the yoke above the withers by leather straps ; this band encircled the neck at the point where the trachial artery lies near the hide. The leather band by which the team could back the chariot passed around the breast behind the elbow and joined the yoke at the same point as the collar.

The element of traction, control and backing was the yoke, a wooden bar, straight or curved, fixed to the fore part of the pole by a bolt and a leather thong, and placed across the withers. It rested upon a pad placed on the withers of the two animals beside the pole and at each end received the collar bands and the backing strap which passed behind the elbows. The bridle, instrument of driving, consisted of the bit and the reins. All of these requirements I observed in the excavation of the chariots. M. LEFEBVRE then goes to say : « As the team moved forward they pulled the collars and consequently the yoke, the pole and chariot. Then the collar pulled on the throat and hindered the respiration ; consequently the animals lifted their heads to relieve the throat muscles as they moved forward. The attitude of all draught animals on ancient monuments rests upon this principle. But this is a most defective position ; for it throws the centre of gravity backward and prevents the animal from pulling its full weight. Under such conditions the curious collar arrangement of the ancients obtained only a small proportion of the animal's power ».

As I have stated, the details of the front part of the chariot must remain obscure ; to explain it the figured monuments must be utilised. For this purpose the following sources supply information ; a cylinder seal and an inlay fragment excavated at Kish (1929), see Pl. XXIV, 2-3, a model clay chariot from Kish, from 4.03 metres and the mosaic standard from Ur (2). The Kish seal and the Ur standard have the same figuration for the fronts of the four wheeled chariots, but the two wheeled chariot of

(1) Author of *La force motrice animale à travers les âges*, Berger-Levrault, Paris.
(2) See p. 10, note 3.

Pl. XIV, 2 has the front or splash-board more inclined toward the pole. In this period there were, then, different styles of splash-boards. The Ur standard shews that the four wheeled chariot was employed in war and the extremely tall splash-board served as a means of protection. Two wheeled chariots were used as ordinary means of traffic, and could turn more easily in the streets (1). Because of the decay of the wood I am unable to give more precise details, but the remains suffice to illustrate in real manner the designs hitherto known from the monuments only.

The copper nails of the felloes are 4 cm. long and 2 cm. thick at the head. They are driven into the wood obliquely and there are about 55 on the circumference, 1.52 metre in length.

The rein-guides, which were hitherto unknown until they were found simultaneously at Ur and Kish, were fixed to the pole behind the necks of the animals, according to the Ur mosaic standard ; and so also is the evidence from Kish. Pl. XXIV, 1. The semi-circular base sat upon the round pole, and was secured by a thong which ensured firm hold by means of a spur at the end of each side. Three rods rise from this base supporting the two rings through which passed the reins. The specimen Pl. XXV, 1, has only one rod, and the number of rods is an ornamental detail. Specimen 2 has small double loose rings on each stationary ring, thus lessening the friction of the lines. Specimen 3 after being treated chemically in the Field Museum revealed a stag with large antlers. This came as a great surprise ; for no one had surmised the domestication of the stag in that period ; it is hoppled by the nose to the foot. The stag was hardly employed as a draught animal, but the hoppled animal seems to shew that it was occasionally used for some purpose as the reindeer was habitually used in other climates. The stag probably came from Syria or the forests of northern Persia. It inhabits the Syrian forests between Aleppo and Palmyra to the present day.

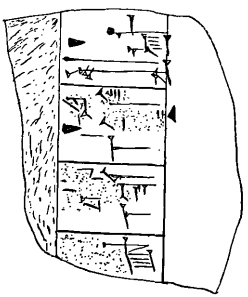
The animals on 1 and 4 are equines, more specifically the wild ass or the horse of Prevalsky which may have been imported from Asia. The proofs which deny the existence of the horse in that period are negative and there is not the slightest reason to suppose that the horse was unknown in early

(1) But for a two wheeled chariot of the same period with extremely high splash-board, see LÉON HEUZEY, *Restitution matérielle de la stèle de Vautours*, p. 20. This is clearly a war chariot; for the armed driver is followed by soldiers carrying weapons. Gudea's war chariot on this *stèle* probably has four wheels (*ibid.*, p. 15). The two wheeled chariot of the Gudea period, *ibid.*, p. 21, may not be war chariots. A four wheeled war chariot from northern Syria is reproduced by HEUZEY, *Rev. d'Assyr.*, VII, 116. The poles of both chariots on Pl. XIV, 2-3 are *curved*. [S. L.].

times (1). The ears of the animals on 1 and 4 are not those of the ass. It may be argued that oxidation may have diminished the length of the points of the ears, and that the animal on a rein-guide of Ur is clearly an ass with large head and long ears (2). But leaving the ears out of the discussion, if one compares the Kish animals with Ur rein-guides, the bodies of the Kish figurines shew much more motion, the neck and shoulders are more sleek, especially in No. 1 and they reveal similarity to the carriage horses on the seal, KM. 17, Pl. XXIV, 2, which certainly are not asses. In my opinion there is no difficulty in assuming that the horse was known in the period of the Y cemetery.

Epigraphy

A fragmentary tablet belonging to the oldest buildings immediately above water level has been found. The writing is not pictographic, nor so old as the Jemdet Nasr tablets (3). Since epigraphy is the surest guide in determining the age of stratifications, and the tablet may be regarded as found *in situ*, i. e., above the painted ware stratum, it is important, and a copy is reproduced here. This is a fragment from the oval face of a tablet which carried at least two columns. The linear strokes have become slightly cuneiform ; the stage of evolution belongs to that of the Fara texts published by Professor Anton Deimel.



(1) See OECT. VII, p. VII, and sign list, No. 129. The pictographs of early Elam also have the horse. Hence it was known already in the period of painted ware below the water table. For a lion on the head of a chariot pole, see Heuzey, *Restitution matérielle*, pp. 21-2. [S. L.].

(2) Reproduced in *Museum Journal*, 1928, Vol. XIX, p. 17.

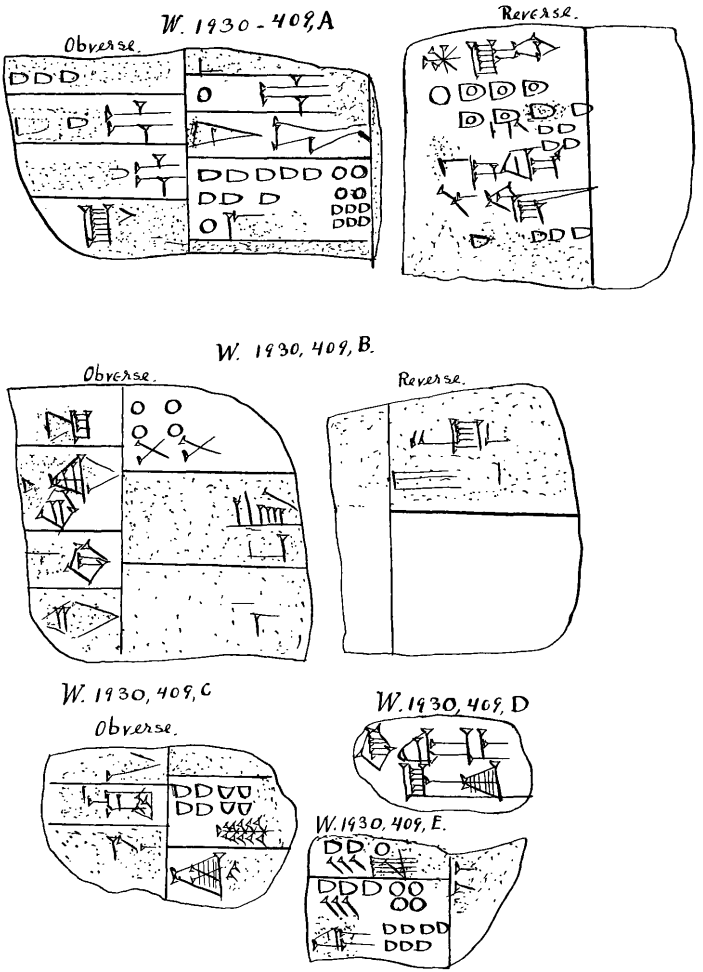
(3) See Professor Langdon's, OECT. VII.

Here follow PROFESSOR LANGDON'S copy and discussion (1). « The tablet seen here was found 5.50 meters below plain level. This season (1929-30) a good many tablets have been found in trench Yw of the tomb stratum about 3 meters below plain level and 1 meter below the upper flood stratum. The chronological problem and the nature of the interruption in the civilisation produced by the great inundation can be illustrated by the few tablets found below the flood stratum. The best evidence, however, is provided by the seals. Pl. XXXVIII. The deepest fragment is the one given above. All the others communicated here lay just below the flood stratum. They are mere fragments yeilding little information and even the shapes of the original tablets cannot be determined. Only this is certain ; among these tablets the large almost square type of tablet with rounded corners, characteristic of the period immediately before Sargon, found also in the Red Stratum and the old palace, is represented. The epigraphy is not much older than Lugalanda and Urukagina (2). The shapes are entirely different from those of the painted ware stratum of Jemdet Nasr. I give here in the first place copies of all the tablets found just below flood level. »

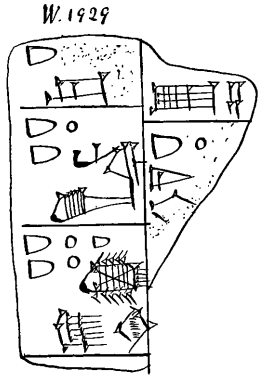
« With the five fragments on p. 36 were found clay jar-stoppers with seal impressions. The photographs are faithful reproductions of what may be seen on the impressions. Pl. XXXVIII, XXXIX and XL. The impression Pl. XXVI, 4, is composed of two large scenes occupying the height of a large seal. Of the scene on the right only the figure of a lion, erect with head turned toward a human ? figure is visible. On the left a nude person seizing two stags. The ears and hair of the person are crudely represented by curving lines. There are traces of an inscription ; from the form of the signs they are clearly older than the epigraphy of Lugalanda to whose seals the seals of Kish below the flood stratum shew great similarity. The signs on this seal which I can definitely decipher are  and  . These are entirely linear. The first of these signs seems to be a new form of DEIMEL, *Fara*, sign list, No. 497. The second is *GIM*, *ibid.*, 481, and LANGDON, OECT. VII, sign list 202. The epigraphy here is even older than the Fara period and difficult to reconcile with the later writing on the tablets found with this seal. Below the inscription is a smaller scene, two

(1) JRAS. 1930, pp. 607 f.

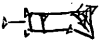
(2) The observes are flat and the reverses pronouncedly convex in all tablets at the top of the tomb stratum.


W. 1930-409, A
Obverse.
Reverse.
W. 1930, 409, B.
Obverse.
Reverse.
W. 1930, 409, C
Obverse.
W. 1930, 409, D
W. 1930, 409, E.

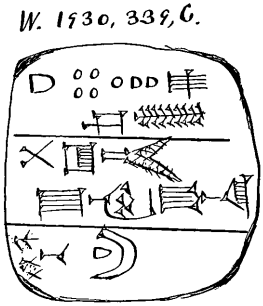
stags and two lions crisscross. The similarity of this and other seals below the flood stratum to the Fara seals is unmistakable. See OTTO WEBER, *Altorientalische Siegelbilder*, *Abbildungen*, 105-107. The groups seen on Pl. XXXVIII-XL again illustrate the striking similarity with the Fara seals. The crude linear curve method of representing the hair and face, the same motifs and distribution of scenes are especially noticeable in Pl. XXVI, 3. On *ibid.*, No. 2 there are traces of a purely linear inscription on which the sign  is visible. This is the sign OECT. VII, sign list, No. 396. If the sign before it is the end of *SAG* then it corresponds to *TUN* here, in the group *SAG-TUN* as already on the Jemdet Nasr tablets. The word is here a title as often ; cf. CLAY, *Miscel.* 12 IV 12 ; a kind of scribe or secretary as in *Inventaire des Tablettes de Tello*, II 907 ; see OECT. I 13 n. 9. However on this seal the sign is slightly different from any early form, and resembles the Sargonic type, THUREAU-DANGIN, *Recueil des Tablettes*, 141 I 3.



The tablet communicated here, was found below the flood stratum, at about the same level as those above but not with them. In the third case of Col. I the sign *BABA* has a form more archaic than any previously known example, THUREAU-DANGIN, REC. 88 ; DEIMEL, *Fara*, No. 153. In case two the last sign is probably REC. 300 and *Fara*, 472. Note again the resemblance to the Fara sign, *ibid.*, Vol. II, No. 56, Col. III 3. The

sign for slave on 1930, 409 C, is  . The form is earlier than the Lagash pre-Sargonic type.

A well preserved baked tablet, equally convex on both sides, is given below although it was found above the Red Stratum in the Sargonic period. The convexity of this tablet is pronounced and the script proves that is extremely ancient. Like other objects of the early period at Kish it is evidence that some of the early antiquities were preserved after the inundation. So for example the tablet and the red stone fragment, OECT. VII, Nos. 13 and 149 ; the oldest known inscription was found in the palace with antiquities belonging to the Red Stratum, LANGDON, *Excavations at Kish*, Vol. I, Pl. XXXI. The painted head, Pl. XXX, in this volume, found above the Flood Stratum clearly belongs to the age of painted ware thirty feet below where it was found.



If then the author concludes that the inundation is the cause of the obvious change in the type of pottery and other antiquities, these survivals from below must be explained as having been brought to the city from other sites which the flood did not destroy. In my opinion the Flood Stratum has little to do with change of civilisation. It is a purely local phenomenon and in itself could have effected no break in the continuity of the culture, a break which is in reality proved by the sterile layer above it. The clay tablet given here from above the Red Stratum both in shape and epigraphy is as old as any fragment found in the upper tomb stratum. The reverse is uninscribed.

The amount of information concerning the language of the people of the tomb stratum is disappointingly slight, at least in the area so far exca-

vated. That it is Sumerian and the direct descendant of the epigraphy and language of the older tablets of the painted ware stratum there can be no doubt at all. Above the Flood Stratum and the sterile layer the same language and same epigraphy (in a more advanced stage) will reappear again. Whatever arguments and conclusions concerning cultural changes may be made from the archaeological evidence this one element remains unchanged throughout the ages from below the water table right up to the Semitic inscriptions of the dynasty of Agade. It is clear that the epigraphy and glyptique agree with tablets and seals of Fara. This again agrees absolutely with the evidence. The Fara texts and seals are later than those from Jemdet Nasr, and the stratum of painted ware at Kish, representing that layer, lies considerably below the tomb stratum. For the jar sealings see also my chapter at the end of this volume. »

Domestic Life

From the discoveries in the old city level and in the tomb stratum some light can be thrown upon the domestic life of the period. The inhabitants were agriculturists and shepherds rather than warriors, and they had commercial relations with the peoples of the upper Euphrates valley, and by this intermediary with the Mediterranean sea board (1). From the north they obtained wood, stone and bitumen, for which they exchanged leather, dates, sea-shells and reed baskets. This trade was extended to the western shore of the Persian Gulf whence they obtained copper (2), and to the Persian plateau which supplied lapis and malachite.

There is no evidence that they hunted wild animals ; for not a tooth of carnivorous beasts was found, nor tusks of wild boars generally preserved by primitive hunters as souvenirs of their prowess. Fishing provided them

(1) This is the period when the plano-convex brick was introduced. It must be remembered that the plano-convex brick was not employed in the earlier painted ware period. The palace at Jemdet Nasr is contructed entirely of small rectangular bricks. Since the inscriptions of Jemdet Nasr and Kish of that period are Sumerian and so are also the tablets and seals of the tomb stratum, it is obvious that some racial infusion must be held accountable for the introduction of the plano-convex style. The people of the Jemdet Nasr period I designate as *Proto-Sumerian*. The people who introduced the plano-convex brick may not have been Sumerians at all and the strange heads discussed, pp. 9 f., may represent the invading race necessary to explain this new style of brick. In no case can it be assumed that the civilisation of the tomb period was not Sumerian. The most probable explanation is that the Sumerian civilisation was seriously modified by a new race, and apparently a race which used the sexagesimal numerical system. [S. L.].

(2) The early Sumerians obtained copper from Oman, as the analysis of the Anthropological Section of the British Association, through a committee, has determined by a study of early copper from Kish and Ur. The Sinaitic Peninsula is definitely excluded. See H. PEAKE, *Antiquity*, 1928, pp. 452-7. [S. L.].

with an important part of their diet. They possessed pack-animals and draught animals, flocks of sheep and goats, which they protected under their own roofs. As early as the period of Jemdet Nasr they harvested wheat (1) and cultivated certain vegetables as the onion and broad bean. A system of irrigation had already been completed.

The craft of the potter had been developed and latterly that of the metal workers. But Kish has not yet furnished smelting furnaces as at Jemdet Nasr (2). See Pl. XXVII, 1. The products of other crafts, weaving, basket making, shaping flints, bead making, etc., were trades carried on in the household, and wheel-wrights were employed in the houses of the great.

They lived in brick paved rooms or the floors of stamped earth were covered with skins and mats. They sheltered under mat roofs and for doors they had mats. On one side of the room was a ledge of earth covered by a bitumen layer on which they placed their pots. Pl. IX, 1. We were unable to locate the fire places. The poor made use of rough vessels of baked clay ; the wealthy possessed utensils of copper and stone, and perhaps low tables ; for we found a copper foot with other indications of luxury such as the vase supports which excite admiration. A passion for ornamentation is evident and developed in both classes. The absence of ostrich eggs, or of fragments of them, causes me to doubt the use of feathers in dress decoration in that period, at least in the period of the first town, which is earlier than the tombs of Ur where ostrich eggs occur.

The Flood Deposit

All the remarks which I have made concerning the first city and the Y cemetery apply to the stratum between the water table and a flood sediment, clearly defined, averaging 30 cm. thick. Since this sediment is

(1) A quantity of charred wheat was found at Jemdet Nasr, pronounced to be *triticum turgidum* by PROF. PERCIVAL, « The Times », London, Jan. 29th, 1927, but *triticum compactum*, by O. F. PHILLIPS, *Chairman of the Board of Review of Grain Supervision*, Chicago, in *Modern Miller*, Feb. 12th, 1927, p. 18. In the tomb stratum and in rooms eleven and thirteen meters below the surface, that is in the oldest buildings above water level, MR. HENRY FIELD, assistant to MR. WATELIN in 1927-8, found barley kernels in three separate jars. These also were completely carbonized. The kernels from the higher level are slightly different from those in the two jars at lower level. Those in the jar at eleven meters are smaller than those in the two jars at thirteen meters. The barley characteristics are much more pronounced in the two lower jars. All are pronounced to be barley by C. E. LEIGHTY, C. F. PHILLIPS, H. P. ENGLISH and A. F. NELSON of the United States Department of Agriculture. Also H. V. HARLAN concurs. [S. L.].

(2) Several were found at Kish in the old palace, in the period following upon the Y cemetery. See MACKAY, *Cemetery « A »*, Part II, pp. 115-6.

not pierced by the construction of houses nor for burials it covered uniformly and for a long time all that constituted the civilisation of Kish. If it is broken in certain places that is caused by the foundation of later buildings, which reveal a new type of brick (1). But the foundations of these buildings never reach a depth which would indicate that they had been affected by the overflow of the river. In very early times, and indeed after the neolithic culture, the Tigris and Euphrates filled their courses with sediment very considerably and formed a wide alluvial plain ; the river levels rose steadily and consequently serious overflows occured from time to time, not *regularly* as does the Nile ; these were probably caused by exceptionally heavy snows in the mountains at their sources. Traces of these overflows occur in the first city building level, but they are slight compared with the inundation above the Y cemetery, which was certainly one of the greatest and longest floods which occurred in the history of ancient Kish.

Above the clean level Flood Stratum there is a layer one meter thick of indefinite and sterile character, designated as « mixed soil » on Fig. 7. Few fragments of pottery were found in it. Above this comes the Red Stratum so-called because of its colour ; it will be considered subsequently. Here I emphasize again the fact that the flood layer marks a complete separation between the types which we have now left behind, the industries of the potter, founder, sculptor, etc., and the types of industries which will be found above it. In referring to the pottery series, Plate 1, the reader can see this radical transformation.

I do not mean to say that there is a complete break in the continuity of culture, and that the site was reoccupied by another culture ; for the material found below and above reveal a continuous Sumerian civilisation. The radical transformation may be due to the fact that the inundation lasted a long time according to the aspects of the layer itself, and during this period the culture may have continued its progress elsewhere, and returned to Kish with its new acquisitions. The changes which occurred throughout the lower levels represent a progress *in situ*, and there is nothing

(1) This is M. WATELIN's considered opinion on which I based my remarks in JRAS. 1930, 603-4. The Flood Stratum decidedly marks the end of an era, and although the language of the inscriptions above the Flood Stratum continues to be Sumerian the civilisation is different. This cannot be explained away on the ground that the evidence obtains only for the great Y trench over 130 yards square. The same facts obtain in the deep northern excavations at a considerable distance from the Y trench. The word « trench », in the sense employed in the Kish excavations at Hursagkalamma, means a very wide and deep removal of earth. It is certain, whatever may be the conditions and evidence of the stratifications elsewhere, that the great Flood Stratum at Kish does mark the end of an era. [S. L.].

improbable in supposing that the evolution was continued among a people temporarily dispossessed of their capital by a flood. The presence of a great and long inundation at Kish did not interrupt the course of their history, nor interfere with the political convulsion of Sumer. I only emphasize the effects upon the culture above the Flood Stratum. The best proof of this fact is the change in funeral rites, which must be due to the promulgation of a new religious and social law which affected the entire land of Sumer from Kish to Ur. But at Ur this change was gradually effected *in situ;* at Kish it coincided with a temporary abandonment of the city. When the civil and religious classes returned to Kish they possessed the new stage of culture represented in the archaeology above the sterile layer.

Opinion at first inclined to see in the Flood Stratum of Kish an event which left its impress upon history, that is the flood of Sumerian, Babylonian, Hebrew and Aramaic tradition. But the discovery in the stratum below it of seals engraved with the figure of Gilgamish (1) is fatal to that theory. Gilgamish who knew the historical flood could not have lived before it. Inundations of this kind occurred frequently in the valley, even in our own times they occur, affecting conditions locally. They impressed the people *according to the periods when they occurred.* Obviously the trace of the inundation at Ur does not synchronize with the great flood layer at Kish. The excavations at Nippur did not reveal one, but HILPRECHT modified the excellent reports of HAYNES according to his own ideas, reports and observations ventursome but correct, which have been confirmed by our work at Kish. It is, therefore, possible that HILPRECHT may have suppressed an observation from the « field book » which seemed inexplicable to him (2).

How then can the various deluge stratifications be brought into relation with the traditional account of the Flood in the cuneiform texts ? Omitting the flood deposit at Ur which appears to be too deep to be taken

(1) See plates XXVI; 3, 4; XXXIX, 6. Some scholars deny that the figure in question, commonly taken for Gilgamish, represents that hero, but if it does not then there is no figure in Sumerian and Babylonian archaeology to take its place. The identification of the half human half bovine creature associated with this figure is surely Enkidu, companion of Gilgamish. [S. L.].

(2) Several divergences of views between HILPRECHT and HAYNES are explained by the fact that HAYNES saw in the layers of ashes at great depth traces of primitive colonies; HILPRECHT explained them as *cremations* in a period when the dead were disposed of in that manner, and consequently come from a later period. See HILPRECHT, *Explorations in Bible Lands,* pp. 402, 407, 419, 456 f. [To those who remember the violent discussions aroused by PROFESSOR HILPRECHT'S severe censure of the excavator J. H. HAYNES, MR. WATELIN'S confirmation of most of HAYNES' views will be particularly interesting. Both had many friends and supporters; the Oxford-Field Museum Expedition wishes to speak only in the interests of science in this matter].

into consideration here, I confine myself to the layer observed at Kish just above the water table. It lies shortly above the Jemdet Nasr stratification. Since pictographic writing was in use in the Jemdet Nasr period, which clearly lasted a considerable time, sufficiently long for the writing to reach this stage, it is possible to conclude that in this period kings and dynasties ruled in Sumer then, and these may have been the kings referred to in the pre-diluvian period on the Weld Prism and the Larsa tablet. There is no need to assume a racial change caused by this historical deluge ; there may have been a change in social conditions, but the distinction can be traced in the ceramics and industrial arts only. It is clear that the arts of the Jemdet Nasr period disappear totally above the first flood layer. The disappearance of this ancient state and culture may have given rise to the episode and nature of the annals as found in the first column of the Weld Prism at Oxford, and for unknown reasons. The continuity of the stratifications are such that it is impossible to place the historical flood immediately above the paleolithic stratum and consequently to eliminate the pre-diluvian dynasties entirely. For if they have any reality, they could not have existed in the rude paleolithic age. At any rate I have no other theory to throw any further light on this problem.

I have been unable to take into account the Flood Stratum at Ur, said to be four meters thick, at the depth where it was found. For I doubt the existence of writing then, and that an oral tradition could have survived to a period so incredibly later ; the scribes could hardly have recorded such definite statements concerning an event so remote and whose traces occur at such depth. In short, local disasters of this kind may have been gathered into a single tradition. The Viennese geologist, SUESS, defended the thesis that the historical deluge was caused by an earth-quake in the Persian Gulf (1). As a result of this seismic phenomenon a sea wave swept down upon the coast and bore the ark inland. At the same time subterranean waters poured forth by fissures in the earth, and atmospheric conditions caused torrential rains. The waters would have accumulated in unnatural volume and left an indelible impression upon the people of that time. Unfortunately for SUESS's theory the analysis of the sediment of these layers at Kish and Ur proves that they contain neither sea shell, nor any marine animals. The theory of a sudden inrush of the sea must be eliminated. If it is necessary to discuss the voyage of the ark and take it seriously

(1) SUESS, *La Face de la Terre*, traduit par Margerie.

at all, to explain its course northward against the descending waters of the rivers I would suggest the back wash of the waters arrested by dunes and natural dikes ; there are no traces of sea shells anywhere on the plain and resort to the sea as an explanation must be ruled out. The Epic of Gilgamish (1) attributes the deluge entirely to the rain storm of Adad, but the Priestly document of the Hebrew account says that « the fountains of the great deep were broken up and the windows of heaven were opened » (2). The Yawistic document refers to rains only (3). SUESS, insisting that the Gilgamish and Biblical narratives refer to the breaking forth of subterranean waters, was led to assume an earth-quake ; such a phenomenon would be characteristic of similar disasters in an alluvial plain, but unfortunately neither account has a reference to subterranean waters. It is necessary to confine the conclusions entirely to natural overflow of the river and canals caused by unusual rainfall.

(1) Book XI, lines 98-145 (ed. THOMPSON). SUESS was misled by an erroneous translation when he argued that this narrative refers to subterranean waters. [S. L.].

(2) Genesis VII 11 ; cf. VIII 2. The word for « deep » is *tehôm*, the salt sea. [S. L.].

(3) *Ibid.*, VII 4 and 12.

CHAPTER III

The Red Stratum. — Monument Z, and Trenches Yw and YwN. — The graves contemporary with Cemetery A. — Babylonian and Neo-Babylonian Burials. — Bricks. — Door sockets.

Red Stratum. — Under this name we have designated an irregular stratum, beginning 40 cm. below plain level in the southern part of the *tal*, and rising to a variable height of about 1 meter. A thin layer separates the Flood layer from the Red Stratum, and has no specific character. The colour of this stratum is caused by the débris of baked plano-convex bricks, measuring $19 \times 11 \times 7$ cms, or $22 \times 13 \times 4\ ½$ cms. The form $22 \times 13 \times 4½$ cms. comes from the ruins of the monument at the foot of the north western face of the ziggurat. A box made of bricks of this type was found here and consequently it was a foundation deposit belonging to the building. The bricks $19 \times 11 \times 7$ came from the partial destruction of the ziggurat, fallen from above, and became mingled with the ruins of the building at the base. At a later period, when monument Z was constructed, the stage tower was repaired by a supporting wall, made of rectangular bricks. This supporting wall or *kîsu* rests upon the Red Stratum, proving that it is designed as a reconstruction (1). The Red Stratum is, therefore, not a platform as I previously supposed. None of the objects found in this débris provide a precise indication of their date and I confine myself to a serial description of them.

There is first the fragment of a schist plaque (2), Pl. XXVIII, 1, KM. 93 of the field catalogue. Pierced by a round hole at the middle, it

(1) This great supporting wall will be described in a future volume, after the ziggurat shall have been entirely exposed. See fig. 6.

(2) Now in the Bagdad Museum.

bears a phantastic animal drawn in outline. The scales which cover its neck and shoulders may be intended to represent a lion's mane ; the paws and hind feet are those of a lion. It pursues another animal of which only the end of the rump and tail remain. Behind the fantastic lion may be distinguished a person clothed in a long robe. Secondly there are heads of alabaster statuettes of various epochs; Pl. XXIX, 1, 2, 3, 4. 1 from plain level in the centre of the ruins, 2, 4 from Yw plain level, 3 from Yw, 1^{m} below plain level. Pl. XXXI, 2, head of lapis lazuli from the centre of the ruins, 1^{m} below plain level; Pl. XXXI, 3, shell inlay from plain level. In the same plate, 1 is after Sargon; 4, 5, 7 are perhaps Sargonid; 6 is Sumerian from YwN 1^{m} below plain level.

Thirdly the painted head. Pl. XXX. This head was made to join the body by a socket and was attached to the trunk. The black colour on an ochre yellow base indicates a long black beard, a small space of hair left to grow on the top of the head (1), and combed flat ; the eyebrows and lashes and the pupils are also black. In contrast to the completely tonsured heads and faces there is here a style in the state of half tonsure (2). What deductions can be drawn from this ? In the Jemdet Nasr level heads completely tonsured are found, but higher up bearded figures are found. (Pl. XII). Again in the period of Agade the heads are bearded. All of these except those of the Agade period are Sumerians.

The theory of PROFESSOR LANGDON concerning the painted head is that it comes from the painted ware or Jemdet Nasr level, and was preserved for more than a milennium as a museum object or precious relic (3). Nothing contradicts or supports this theory. It should be observed that sculptured or moulded figures of humans and animals in polychrome have not been found anywhere, and this object would be an exception, and it is hazardous to base a theory on an exception. The black colour was used in the earlier period for paint in women's toilet and it is possible to argue that it was used on this head ; the yellow pigment used for the skin may have the same origin, that is as a mere decoration, although this colour is not found in any of the shells. These arguments, however, appear to me insufficient to adopt PROFESSOR LANGDON'S theory (4).

(1) See the figure in colours, *Illustrated London News*, Feb. 8, 1930.
(2) On the history of Sumerian tonsure see S. LANGDON, *Archaelogia*, Vol. 70, p. 150.
(3) *Daily Telegraph*, London, Dec. 13th, 1930.
(4) For the inscriptions found in the Red Stratum and their proof of the date immediately before Sargon of Agade, see p. 61.

Monument Z and the Trenches Yw and YwN (1)

This building, Fig. 6, marks the abandonment of plano-convex bricks, replaced by rectangular bricks $25 \times 9 \times 10$ cms. The building seemed to be separated from the supporting wall, which touched the north-west face of the ziggurat, by a passage or hall. We found no wall which connected

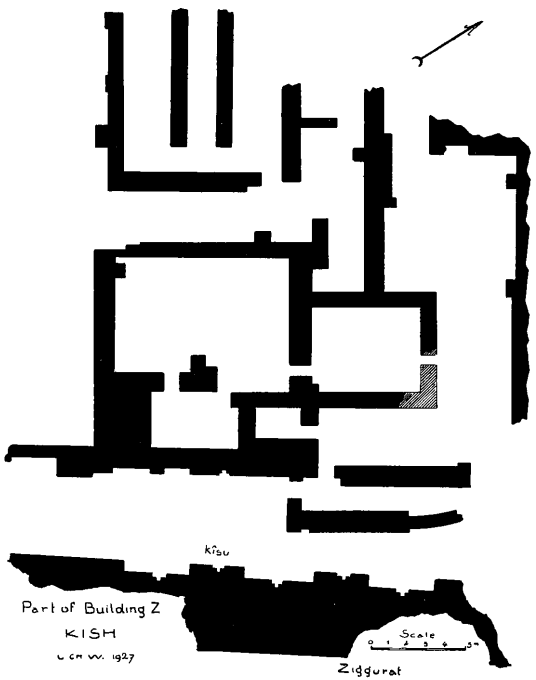


FIG. 6. — Ground plan of Building in Mound Z, north of the great Ziggurat. Retaining wall of the N. W. side of the Ziggurat, Sargonic period; (See p. 45).

the two edifices. The building Z shewed traces of several modifications and pavements at different depths, and was so irregular that no evidence of its nature could be obtained. Certain grooves in the eastern wall gave the impression that it was not a private building. It belonged to the construc-

(1) For trenches Y, Yw, YwN, see Pl. III.

tions which pass beneath the Neo-Babylonian temple, and until the buildings on this level are all disengaged it will be impossible to obtain a general idea of the whole. Monument Z had been set upon the Red Stratum, and consequently stood higher than the other buildings of the period found in another part of the city. We encountered such buildings in removing the north western flank of the great ridge of the temple and arrived at plain level. This part of the area was peculiar in its relation to the higher central part, where the débris caused by many reconstructions caused the level to mount rapidly. The temples occupying always the same relation to the two stage towers have been reconstructed one above the other. The outer buildings, therefore, do not lie beneath such deep débris. This observation has its importance in explaining the excavations and for the chronology of the objects. For an object or text found in Yw or YwN at the surface of the plain and under 50 cm. or 1 metre of earth may belong to the same period as an object or text found 8 metres deep in the central temple area.

The buildings in Yw and YwN, Pl. XXXII, are contemporary with monument Z. They are built of sun-dried bricks and contain small rooms. The walls are absolutely plain on the exterior but inside in certain parts of the rooms they have received a coating. Layers of organic debris shewed that the rooms had served as habitations. These buildings had been crushed by the construction of sewers and drain pipes of a later period. The best example of a drain was found in Yw slightly above plain level. A canal was cut through this area and its sides and bottom lined with fragments of bricks laid in rows. These were coated with bitumen to render them water-tight ; over it was constructed a vault of plano-convex bricks set vertically on their narrow ends one against another. See Pl. XXXIII, 1. The various dimensions of the plano-convex bricks used in this vault shews that it is a construction made from models of bricks employed in earlier times. The use of bitumen is also not in harmony with the plano-convex brick period. The canal has a fall of 2 cms per metre and runs *from* the outside of the city toward the interior. It belongs to a system of water supply ; a channel of the same kind lets off from it in another direction.

Near this water channel and a little above it were traces of a horizontal drain made of baked clay cylindrical tiles fitted into each other ; they were partially crushed. See Pl. XXVII, 2. This drain runs at right angle to the vaulted channel and does not appear to belong to the same system (1). At

(1) It runs from the interior of the city toward the exterior.

any rate no such drains were found in the southern part of the mound (because of its elevation at that time) but are founded in the living quarters and this proves that the inhabitants were served by a water system from a canal, probably taking off from the Euphrates and supplied by hydraulic machinery at the river bank ; the canal brought the water to the suburb and then passed under ground to supply the water system.

I have mentioned these constructions at isolated points, but it is impossible to bring them into any logical scheme on which the central part of Hursagkalamma was built. Even their purpose must remain under conjecture ; the fragments of inscribed stones and the tablets found here give no precise indication, but they are all business documents of the Agade period which seems to fix their date. It is not surprising then if I attribute to a lower level a more recent date than to a level which is higher in the central area, where the débris rose more rapidly owing to the temple reconstructions. Consequently if in the south part of the mound, beyond the Red Stratum, tablets assigned to 2900 BC. (pre-Sargonic) are found *in situ* at a level where the side of the mound begins to drop into the plain, they are assigned to houses built below the level of the Red Stratum but contemporary with it nevertheless, although they lie at slight depth. All that is said below on chronology is based on this reasoning, and may be contradicted by future excavations.

The burials contemporary with cemetery A

Throughout the entire extent of the mound (at this level) so far excavated, graves have been found with the same furniture as in cemetery A. They do not occur grouped together as in A (a proper cemetery) but occur more frequently in the Red Stratum than elsewhere at this level. From the graves in the Red Stratum one may conclude that at the period of interment it was already abandoned as part of the constructions above it, and used as a place where the dead could be placed ; or perhaps it was regarded as a place where those worthy of burial in a sacred site should be laid. In support of my last suggestion the richest graves were all found there. Also the nearby cemetery at A was available and if the Red Stratum were then in ruins and neglected it should be packed with graves, and cemetery A would be less important. The burial customs shew that human sacrifice had been abandoned ; the graves have now always *one* skeleton and are

never placed in tombs enclosing their bodies. The bodies lie in « embryo position », knees drawn up, and are usually badly preserved. The *necessary* equipment of the dead seems to consist of a dish of offerings (the « champagne vases » described by LANGDON) and a vase with false handle bearing a bust of the mother goddess. Since these graves are identical with A, I describe them briefly, confining myself to those most rich.

Burial 306 contained a skeleton around whose skull ran a thin gold band one cm. wide ; the two ends are pierced so that it could be fastened at the back of the head. The usual champagne dish and mother goddess jar were accompanied by alabaster bowls of cylindrical pattern with flat rims (1) and two or three broken bronze cups. Pl. XXXIV. The woman's ornaments consist of a necklace of beads, cornelian, lapis, agate and onyx cut in various sizes, a copper hair-pin, copper rings, gold wire bracelets (2) ; these lay round about the numerous ordinary clay jars.

Burial 344 contained a skeleton whose skull was ornamented with a silver band so badly oxidized, as silver always is, that it could not be measured. Around the neck was a beautiful necklace made of cone shaped grooved plaques of gold and lapis lazuli. Pl. XXXV. These interchanged in reverse position. They are pierced by several holes for stringing together (3). The gold plaques are made of a wire flattened and bent in such manner that the spaces between two opposite creases formed the holes for the strings or wires of suspension. There was another necklace of cornelian and onyx beads, ribbon pattern, threaded on a gold wire. A rosette silver pendant, silver and copper pins with lapis heads, copper rings and bracelets complete the ornaments laid with this female. Near the head was found the seal on Pl. XXXV. This seal, representing a lion attacking a stag and a man holding a stag by a long leash, also belongs to the pre-Sargonic period.

Another burial contained no jewels but it supplied the valuable model of an object consisting of two small bearded human-headed bulls ; they are mounted, standing parallel, on a pedestal supported by wheels. This monument is of ivory in bad condition and only one of the bulls could be preserved (4). This grave contained an ivory comb engraved with ornaments, a rectangular baked clay palette enameled green, fragments of a small

(1) One of these bowls is seen just back of the head on Pl. XXXIV.

(2) The lapis lazuli seal found with this female skeleton appears on the same plate and belongs to the period before Sargon. [It is possible that Burial 306 is that of the famous queen Ku-Bau. S. L.].

(3) Now in the Bagdad Museum.

(4) Now in the Bagdad Museum.

alabaster vase decorated in basket design, a terra cotta lamp enameled green, Pl. XXXI, 7, ornamented with the figure of a bull in relief at the point. There were also necklaces of paste and stone beads, cardiums filled with colouring substance, copper pins with round heads made of paste, gold plated ; all wrapped in a mat with a dozen small asphalt jars of various shapes placed around the body. The usual funerary vessels of the period were found by the skeleton. The execution of all these objects reveals the listlessness of a decadent art ; it is lost in details and obscures the clearness which attracts in the productions of the artists of the Y cemetery. The fine and nervous art of the early Sumerians has vanished. In these burials, undoubtedly those of women, there were no mirrors ; nevertheless they made use of paints and had copper as several objects testify. Feminine coquetry is perennial and mirrors were ever necessary for it ; the objects which I have defined as mirrors from the Y cemetery (1) — did they really serve as mirrors and why did they disappear ? For they were equally necessary in the female toilette of the later period.

The graves of the Red Stratum also contained handles made of alternating balls of paste and asphalt. The cavity running through the handle probably held feathers and the object is the handle of a fan. At Susa the jar handles with bust of the mother-goddess are also found and are assigned to the end of the dynasty of Accad by the French excavators. But the ivory bulls in burials still reveal Sumerian workmanship and we found also the foot of an altar table with a Sumerian engraved in outline. It is possible that the mother goddes jars continued to be made until a later period at Susa (2).

Ceramic

I shall add nothing to the description of the pottery. That has been done in careful detail by E. MACKAY and his description applies to the pottery which I found at these levels in the temple area (3). I remark, however, that in my opinion this pottery originated outside Kish, but do not imply that it is due to an influence foreign to Mesopotamia.

(1) See p. 29.

(2) The tablets from the Red Stratum are undoubtedly pre-Sargonic since they are of the same age as the seals found in the graves. [S. L.].

(3) See *The « A » Cemetery*, Parts I and II. See also my pottery scale, Pls. I, II.

Babylonian, Neo-Babylonian and Parthian burials

The burials which come above this level are characterized by the complete disappearance of the mother goddess jars and champagne vases (offering dishes). Therefore the two essential features disappear, which proves a change in burial custom. This change must coincide with a change of dynasty, and since this dynasty must be later than the level in which they buried their dead, it must be later than the empire of Agade, and be the Amorite dynasty of Babylon, founded by *Sumu-abu*, or the Cassite dynasty. These graves are of slight depth ; at the bottom they placed the body in the bent position ; for the graves are not long enough to receive a body at full length. At the head they placed a jar of variable shapes, C, Ca, Cb in my pottery scale. Around this jar they placed several jars of variable shapes, AA, AAa', K, Cc, L. N., rarely ornaments, never any metal objects, nor seals. Only one burial supplied a little *bronze* cup. The small terra cotta cups are piled one in another, or served to cover the mouths of the small jars. When the laying of the body and its funerary furniture was complete, they closed the grave with a slab of gypsum, rarely of stone ; sometimes the covering was made of bricks. These covers were supported by bricks heaped up, not laid as a wall, and gathered from the débris ; for they are of various sizes. There is no trace of mats. Never in this area did we find any grave with richer furniture than this and they are scattered everywhere (1).

I apply the term *neo-Babylonian* to those graves found in the débris belonging to that period, found either near the surface or in the talus of the mound, or at some distance away. These were of two kinds, a simple earth burial, or a sarcophagus of baked clay. See Pl. XXXVI, 1. The sarcophagi always belong to the late period and contain glazed pots not found elsewhere at Hursagkalama (2). In the earth burials the skeletons, laid at full length, were accompanied by jars of the types give in the two top lines of my pottery scale ; the type marked P predominates. The type R is usually present, and contained the skeleton of a small dog with two or three broken plates of type Y. Necklaces and bracelets of precious stone and paste beads, bronze bracelets, a seal and often a small axe of polished

(1) For an explanation of the decreasing richness of burial furniture, due not to the poverty of the later periods, but to a change in religious belief, see LANGDON in Vol. I, p. 93.

(2) See the types of glazed pottery from coffins in mound W, Vol. I, Pl. XXIX.

stone (1) were found in these burials. There seems to be little difference in the importance of these graves or in the number of jars ; the type P never occurs in greater number than five. In the coffin burials the bodies lay normally on their backs on the floors of the coffins, or on smooth stamped earth with a coffin placed over them in inverse position. They are never long enough for the body, and consequently the knees are drawn straight

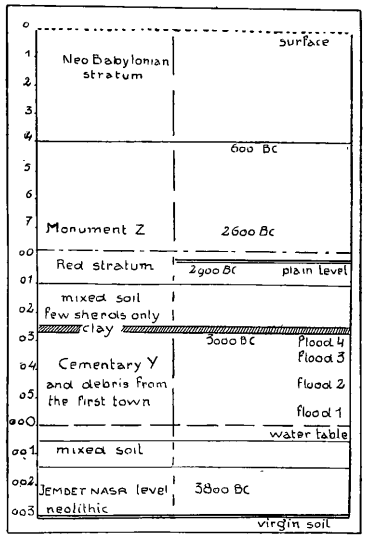


FIG. 7. — Stratifications of the Ingharra site north of the great Ziggurat. (See p. 3).

upward. The average width at one end is 58 cm. and at the other 50 cm. ; the length 1.40 metres. The head always lay at the narrow end, which seems to be abnormal. This is probably due to the fact that the coffin had been emptied and re-used. In the group excavated on the temple site, the

(1) Such axes were never found except in graves of this period. That does not mean that they were then in use. In fact polished stone and barbed arrow heads are rare above the Flood Stratum 4. I admit that stone implements were used until the neo-Babylonian period, although I never brought to light any sculptors workshop like those at greater deptb, but the rareness of metal confirms this opinion. In no case did the use of stone implements continue into the late period. It is more probable that these stone axes were conserved as fetich and preserved as relics as can be observed in all epochs and even in our time. To mention the references to neolithic objects used in barter down to the Middle Ages would be long and inappropriate here.

coffins are all orientated north by 40 degrees west, and this is the only example of an evident orientation found anywhere at Kish (1). It is possible that this orientation is not due to any rule but is entirely due in this locality to the presence of a wall. The jars of type T-U-Ua, often green glazed belong to the ceramic of the neo-Babylonian period and probably are the most recent forms. At the temple site we have not found so far any thing but these jars, either used formerly or not, in the coffins (2). Babylonian and neo-Babylonian pottery has already been studied elsewhere and I delay no longer on that subject (3). [No detailed groups of drawings and descriptions of the pottery series, old Babylonian, Cassite and neo-Babylonian have ever been published. The scientific study of this subject remains to be done. This series is not intended for a study of that kind but the old and neo-Babylonian types at Kish will be supplied in a future volume by the Field Museum].

In the mound and its vicinity some coffins after the neo-Babylonian and Persian period were found, but in the plain 300 meters north of Ingharra I exposed a complex tomb whose vaulted roofs reached the level of the plain. Pl. XXXVI, 2. It contained a vestibule into which descended a stairway. Each side of the vestibule gave entrance to two vaulted tombs,

(1) I excavated nearly sixty of these coffins in mound W and found no such systematic orientation. This is an extraordinary fact noted by the author. The great stage tower at Uhaimir lies in the general direction N.-W. from Ingharra. [S. L.].

(2) This year, however (1931) coffins with jewelry have been encountered; they belong to the Parthian period.

(3) R. KOLDEWEY, *Das wiedererstehnende Babylon*, p. 230, dates the types T-U-Ua, in the Assyrian period. Pp. 242-24€ give early Babylonian Cassite and neo-Babylonian types in a confused description where it is obvious that he was unable to make a clear and distinctive pottery scale of these periods. Plates XXVIII and XXIX of my *Excavations at Kish*, Vol. I, give samples of exclusively neo-Babylonian ware and Pl. XXXV, 3 of the Hammurabi period. For the pottery of the Hammurabi period, Western Kish yields unlimited examples; MR. and MRS. MACKAY studied and drew all these types, which have not been published. But H. DE GENOUILLAC, *Premières recherches archéologiques à Kish*, has published excellent types of this and the late period. For the Hammurabi period see, *Genouillac* I, Pl. 63, 12; 51-52; 54, 48; Pl. 50, Nos. 90, 132, 135; Pl. 53. The entire mound in Western Kish, marked « city ruins » on my plan, *ibid.*, Pl. XXXIII, marked T on MACKAY'S plan, *ibid.*, Part I, Pl. VII, belongs exclusively to the first Babylonian dynasty, which makes it easy to classify the types of this period. A classification was made by GENOUILLAC, *ibid.*, Vol. II, pp. 13-14. At the temple area of Ingharra where WATELIN has worked for five years it seems impossible to obtain a pottery series for this period. The Cassite period at Kish seems to be entirely absent. The neo-Babylonian types at Kish, beside WATELIN'S pottery scale, have been drawn and studied by MR. and MRS. MACKAY, as found in mound W by myself, FATHER BURROWS and MACKAY. Valuable material in GENOULLAC'S two volumes; see I Pl. 64, Nos. 7, 168, 163, 152 and 10 (above, middle); Pl. 63, Nos. 30, 144; Pl. 66; Pl. 65, Nos. 159, 160, 162; Pl. 67, Nos. 165, 157; Vol. II, p. 15. But GENOUILLAC seldom states the site in which jars were found. A good example of the Kish glazed ware is given on the coloured plate, *ibid.*, Vol. I. See also my Vol. I, Pls. XXVIII-IX. J. JORDAN, *Uruk-Warka*, p. 67 and Pls. 90-92 has a few notes on pottery of the Hellenistic period.A complete series of old Babylonian, Cassite, neo-Babylonian and Parthian pottery is exhibited in the *University Museum, Philadelphia*, but never published scientifically. HILPRECHT, *Explorations*, gives practically nothing. [S. L.].

in each of which lay several skeletons ; the grave furniture was poor, plates, small broken enameled jars, pieces of necklaces of paste and amber beads, and two bronze bracelets ; every thing was in disorder. At the end opposite to the entrance of the vestibule, upside down on the pavement, which had been cut away at that point, was a large jar containing a medley of bones and eleven skulls. It contained the two terra cotta figurines on Pl. XXXVI, 3, 4, a woman (1) and a double figure of two girls (2) one playing a double flute. This tomb is Parthian. This is an example of a burial in a jar for remains which had been exhumed ; for it could not contain eleven bodies. The tomb was built of large square neo-Babylonian bricks, not stamped with inscription, and removed from a building, as the adhering bitumen proves. The walls and pavements were in perfect condition ; the roofs had been pierced from above in recent times.

Bricks

PLANO-CONVEX. — I found no bricks in the Jemdet Nasr level below the water table, probably because the trench made by hydraulic means was too small. But there is abundant material from Jemdet Nasr and their measurement are given here. They are exclusively rectangular. There the baked bricks, $22\times8\times6$ cm., are all pierced by three holes near the centre of the long axis, from top to bottom (3). The unbaked bricks used in the walls measure $27\times13\times8$, and there are baked and unbaked bricks, $20\times9\times8$. This type of brick is found also at Warka in the same period (4). They disappear at Kish and Warka with the painted ware. After this period, when we come to the buildings just above the water table of the old city ruins, the plano-convex bricks begin and continue uninterruptedly upward to monument Z above the Red Stratum. The types are as follows, given in centimeters :

Unbaked. — *a)* $23\times14\times6$; *b)* $19\times11\times7$.

Baked. — *a)* $23\times14\times6$; *b)* $19\times11\times7$; *c)* $38\times19\times5$ (pierced by two holes at the centre) ; *d)* $28\times20\times6$; *e)* $20\times14\times7$; *f)* $17\times11\times7{,}5$.

(1) Field catalogue, KM. 430.

(2) Field catalogue, KM. 431.

(3) See LANGDON, *Ausgrabungen in Babylonien*, AO, 26, p. 72. These are never found in walls, but scattered in the *débris*.

(4) DR. JULIUS JORDAN, *Zweiter vorläufiger Bericht über die von der Notgemeinshaft der deutschen Wissenchaft in Uruk unternommenen Ausgrabungen*, p. 24, Berlin. 1931.

The walls of the first city above the water table are made with types *a)* and *b)*, *a)* being reserved for the pavements since they are less convex. They are found at Bismya (Adab) (1), Nippur (2) and Mousian ($25 \times 12 \times 7$) (3). The plano-convex brick is only an imitation of a stone pebble or a primitive lump of clay, and survived for centuries. Type *c)* is accidental. An exception is presented by the ziggurats, which are built with the type *f)* not encountered elsewhere. The plano-convex brick persisted until some architect perceived the disadvantage of a curved surface and reintroduced the rectangular brick, abandoned in remote antiquity. The desire to ornament the exterior walls may have led to this invention or return to the rectangular brick ; for this purpose the convex brick is defective. In fact the walls of the first city are plain and the decoration of the palace walls at mound A shew only plain false columns (counterforts), called stepped recesses by MACKAY (4), whereas the walls of monument Z have recesses with two steps.

RECTANGULAR. — Type *g)*, $25 \times 10 \times 9$ and *h)*, $35 \times 29 \times 10$, sundried and never baked. Both sizes are used in monument Z but so irregularly that it is impossible to say whether they belong to the same or different periods. I do not believe that they are contemporaneous, since monument Z survived through a long period and was repaired with a new type.

Type *l)*, $33 \times 33 \times 11{,}5$; *m)* $32 \times 32 \times 12$, baked and unbaked. These are neo-Babylonian and there are the following variants, *n)* $46 \times 40 \times 6$; *p)* $39 \times 39 \times 6$.

Types *n) p)* were found at Bismya (Adab) (5) and are attributed by BANKS to the Sargonic period. As Sargon had been a priest at Kish and must have built or repaired buildings there, his bricks should be found abundantly, but this is not true so far as the excavations have progressed. I, therefore, assign them to the neo-Babylonian period. At any rate the rectangular types persisted over a very long period and in the Hammurabi period they remain unchanged (6). There is nothing to link up the Agade

(1) BANKS, *Bismya the Lost City of Adab.*

(2) C. L. FISHER, *Excavations at Nippur*, pp. 21-28. Earliest size, $22.3 \times 15.3 \times 4 - 5.7$; next period, $28.7 \times 17.2 \times 5.7$. See also, *ibid.*, p. 45, bricks $29.8 \times 17.3 \times 4.7$.

(3) J.-E. GAUTHIER et G. LAMPRE, *Fouilles de Moussian*, Chartres, Impr. Durand, 1905, p. 27.

(4) *The « A » Cemetery*, II, p. 92 and see his drawing, *ibid.*, Pl. XXII.

(5) See J. E. BANKS, *The Lost City of Adab.*

(6) But Uhaimir, the stage tower of Emeteursag, is refaced with square bricks of Samsu-iluna, $35 \times 35 \times 8$. Also bricks of Hammurabi of this size were found there. The brick from Ishan- Dhaḫāk, Kish, I, p. 40, which is certainly of this period, measures $32 \times 32 \times 7$. [S. L.].

dynasty with the succeeding dynasties which are represented at Kish by objects and tablets. Also I believe that the buildings erected or repaired in the Agade period were preserved and repaired or slightly modified right down to neo-Babylonian times ; for the walls of the Nebuchadnezzar reconstruction of the great double temple rest directly upon a monument not yet exposed, but which in turn rests upon the same level as Z. Hence if I indicate a period of 2000 years for a thickness of 3 meters of débris, the reason is the long duration of the edifices placed upon the Red Stratum. Future discoveries of foundation deposits and texts may contradict this observation which I feel obliged to make.

In the northern and north-western parts of the mound, outside the sacred area where temples are superimposed, above plain level there exist only bits of isolated walls impossible of being brought into any architectural relation. They are buried in a mass of débris of irregular stratification where tablets of the Agade period were recovered and others as late as the neo-Babylonian period. They were too irregularly located to be of any use in dating these levels.

Door Sockets

The presence of door sockets in the oldest buildings is uncertain or negligible. They begin with the period of the Red Stratum, having the form of large lumps of stone scooped out and often completely worn out on one face by the rubbing of the metal foot of the door-post and even pierced ; they are sometimes turned over and the other face used in the same manner until they are again worn through. This use until the stone was worn out shews how rare stone was at that time. They even resorted to making door sockets out of large rude plaster casts of a gypsum stone found in that country. These are extremely large since the material is fragile and have the form of a cylinder with concave sides irregularly scooped out at both ends. The diameter of the base is slightly greater than the top. In the capsule at the top which received the foot of the door-post small pebbles were set in bitumen to resist the wear of the turning post. It is difficult to date these artificial door sockets ; for like rough stone specimens they are never found *in situ*. I suppose that they are older ; the use of large flat pieces of gypsum in a plano-convex building was established by Col. Lane (1), and was

(1) See Mackay, *Cemetery « A »*, Part II, p. 83 ; Langdon, *Kish*, I, Pl. III 3 ; IV 1.

certainly widely used in this area. In later periods hard stone more suited to this purpose was obtained in commerce, but no inscribed door sockets have been found.

Drains

From the plain level upwards we began to encounter drains exclusively vertical. They are made of circular tiles pierced by two small holes, and set one above the other without joints, and surrounded on the outside by pottery sherds. The shafts sunk for these drains were, therefore, larger than the tiles to provide space for the sherds. This was observed in case of certain shafts which had been made ready to receive the drains. The levels at which the tops lay (right at the surface) led me to conclude, in spite of difficulties in measuring, that they belong to the neo-Babylonian period. The drains survived after the buildings near the surface were completely destroyed and consequently there are many more drains than remnants of houses. They may have served single houses or a collection of them ; such large shafts would have been too serious an undertaking for a single family and too large to serve the needs of one house. They descend to various depths, the deepest reaching almost water table. Of the date of these deeper drains there was no doubt ; for fragments of neo-Babylonian objects were found at the bottoms, having accidentally fallen there. KOLDEWEY found these circular tile shafts used as *wells* at Babylon, but this does not apply to Kish. They never reach the water except in two cases. Moreover the pot sherds laid around the tiles evidently served as an arrangement to aid infiltration or filtration from within. They served at Kish as sinks. Also HILPRECHT (1) observed at Nippur that the numerous drains composed of tiles, often perforated, descend 8 to 10 feet, often more, from the surface of the ancient plain, or from upper levels, but never reach the water and he described them as drains, which protected isolated burials « and the gradually rising mound as a whole ». These views are not substantiated at Kish and do not seem to be sound respecting Nippur.

The Sumerians as well as the Babylonians made wells lined with bricks ; examples are visible in the desert at Ashnunak, at Kish in the temple Emeteursag (2), and at Babylon in the temple of Ishtar. These are

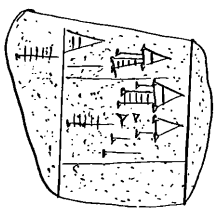
(1) *Explorations*, p. 457.

(2) COL. LANE found a completely preserved well at the site « Plano-convex area », lined with extremely good plano-convex brick work. This he cleared to the bottom, over fifty feet from the surface to water. Here the whole plain is covered with Sumerian buildings lying under only a foot or two of dust blown sand. The old Sumerian well at Kish is nearly four feet in diameter. [S. L.].

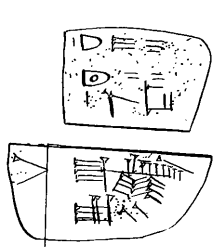
much larger than the drains and enabled the inhabitants to draw water with leather buckets and clay vessels without damaging the casings. Their number was limited and they served the entire community.

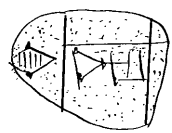
Such are the results of five years work which I have now done at Kish. They are not final, and this book is only a report which is to be continued. New facts will modify what I have said and throw light upon the problems unsolved.

W. 1930, 409, F.



W. 1930, 409, G,





Epigraphy and Seals of the Y Cemetery (by S. LANGDON)

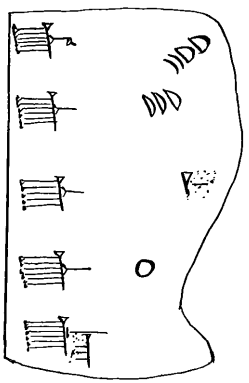
On pages 34-9 I discussed most of the tablets found at the top of the Y cemetery, found just below the flood layer 4. Here I communicate a few more of this type.

No. 409 G is a small fragment from the upper or lower edge of a tablet whose faces are *equally* and pronouncedly convex. A seal of the early Indian script was found at plain level in this same mound in débris which yielded tablets and seals of the dynasty of Agade and another was found at Emeteursag below the platform of Samsuiluna (1). W. 1930, 409 H is a fragment from the left upper corner of a large tablet, one side of which is perfectly flat, and the signs entirely destroyed. This I take to be the obverse. The other side is convex and the part published here I take to be the end

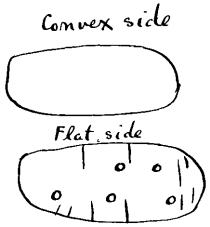
(1) MACKAY, JRAS. 1925, 697, and Langdon, 1931, 595.

of the reverse. It seems to be a text which has a list of ideograms beginning with the sign GAL. The interesting feature consists in the casual additions in the blank spaces. The casual impressions with the end of the stylus which was used for making figures were made when the tablet was still soft.

W. 1930, 409, H.



W. 1930, 409, I.



The holes indicated on the flat side of 409 I are deep, and pierce into the body of the clay to a considerable depth. It is 32 mm. long, and 13 mm. thick at the most convex point. This object is evidently intended for a press seal and belongs to a period apparently much older than the tablets. It may be assigned to the bottom of the Y cemetery and the period of the seals published in JRAS. 1930, Pl. X, or even to the remote age of the Jemdet Nasr period. Below is a copy of a jar sealing from the Y cemetery.

A selection of all the important jar sealings found below the flood stratum will be found on Pls. XXVI, XXXVIII-XL.

Epigraphy and Seals of the Red Stratum

On Plates XLIII-XLV, will be found the only tablets excavated in this stratum and in the cemetery of the palace at A. They obviously belong to the period considerably before the Agade period, and certainly as early as Ur-Nina of Lagash.

1. W. 1930, 360, is a large tablet, flat on observe and convex on reverse. Broken away all around the edges. Only a few signs legible on the obverse. Six columns on each side. List of rations measured by the *gur-sag-gál* to various persons, named specifically or by profession. The N. Pra. which can be deciphered are, Col. I 7, *Ur-é* ; Col. II 3, *Ur-^{d}Nidaba;* 5, *Uzú-me te-na ;* Col. III 4, *E-gim;* 5, *Ni-tuk.* The names of professions are, *uš-bar ^{d}Innini*, weaver of Ishtar, II 1 ; *igitub*, the seer, III 2+8 ; IV 5 ; V 2+6 ; VI 2 ; PA (ugula) V 1 *et p.* III 6, contains an unknown sign, similar to DEIMEL, *Fara*, Sign List, No. 490, and designates some grain or commodity. The sign before it is *ašgab*, *irib*, tanner, DEIMEL, *Fara*, Vol. III, No. 33 III 6 ; *Code Ham.* Rev. XXIII 37. See also *ašgab-*  , DIEULAFOY, *Acropole de Suse*, No. 340. Hence the sign X at Kish is the same sign as *Fara* 490 ; RTC. 58 III 10 ; IV 12 ; TSA. 1 obv. I 4, etc. *ašgab* also V 3, and *igi-tub ašgab*, l. 6.

2. W. 1928, 434. A small tablet with rounded corners. *Flat* side uninscribed ; with large number of small circular holes. Col. I, three KAL at1/5 *gur* each, 14 *ugula* at one *gur* each ; two *dumu-nu* at 1/5 *gur* each. Col. II, five *KAL*, twenty *ugula*, two *dumu-nu* at 1/5 *gur* each. At the end of Col. I *gú-ki = šapiltu :* Col. II *an-gu-ú-šî = elîtu !* Apparently « below and above », denoting the places where these classes of dependents lived in respect to some estate ? *šî* is used for *šú* in *me-ám-šî = ali-šu*, Where is he ? POEBEL, PBS, V 152 IX 15. Although *an-gú-šú* means « total », PBS. IX 2, Rev. VIII 1 ; *Fara* III 43 ; *an-gu-ú-šî* cannot possibly have this sense here ; for there is no total given.

3. W. 1928, 428, oval tablet, equally convex on each side. Rounded corners. Obverse has traces of figures. List of *gurs* of *zid-?* for various persons ; *^{d}Innini-gar; An-ša-ur-sag-gan; Ur-mes-lam;* X- *áš-šù-galu;* the first sign in II 1 is composed of an unknown sign+*ERIM*, *SAB*, followed by *AŠ+šù; Lugal-?; Ur-mes-lam; Ba-zi; Ba-gi;* above *gi*, strokes not intelligible, or a new form of *GI ?*

4. W. 1930, 352. Obverse of an oval tablet, equally convex on both sides. Reverse entirely destroyed. Distribution of 1 2/5 *gur* of grain to various persons. The epigraphy is unusual. The sign *GIR*, REC. 3 has no horizontal stroke, I 3+5. Also *GU*, REC. 320, has no horizontal stroke, and the end is a head, not two wedges, II 5 ; III 6. *AN*, REC. 5, has no prolongation of the lines, II 7. The first sign in II 3, I cannot identify. The sign *BARA*, REC. 88, is not found elsewhere, II 5. In II 7, I read, *uš-dīm-tar-^{d}-Me-gam-man ?*

5. W. 1930, 349^{a}. Fragment from middle of a tablet. Reverse no text preserved. Note again the sign *AN* as on No. 4. The sign after *AN* I do not know.

6. W. 1930, 3638. Fragment of round tablet. Scholar's exercise.

7. W. 1928, 17. Fragment of small oval tablet, equally convex on both sides. List of loaves of bread assigned to various persons. Obv. I 2, the second sign also on No. 1 II 5, and certainly a *gunu* form of *TE* (1) ; also line 3. The reverse in the figures for the total has the sign OECT. VII, No. 442, a variant form of which occurs on Monument Blau, B, Obv. II 6. The proto-Elamitic figure, SCHEIL, *Dél. Per.* XVII, No. 1230, seems to be the same combination and has the value 100, but there it is made horizontally. At any rate the same sign as made on SCHEIL, tablets 19, 277 and 45 is also sign 1230, with value 100. See JRAS. 1925, p. 172. The total on the obverse as preserved is 270, but no certain conclusion can be obtained. I suggest a value 120 for this sign. It is remarkable to find this numeral of the Jemdet Nasr period surviving in the Red Stratum so much later.

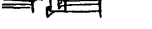
8. W. 1928, 16. The only tablet found in the palace A. Photograph in MACKAY, *The « A » Cemetery*, Part II, Pl. XXXVI and page 202. List of jars of provisions for various officials and persons. In Obv. I 5, the *ugula-maġ ;* cf. Rev. II 1. The sign *maġ* lacks the usual first stroke as it is written at Lagash, REC. 25. This is the early form, *Fara, Sign list*, 57 ; RTC. 9 I 2. *dub-sar*, scribe, Rev. I 2 ; *igi-tub*, prophet, Obv. IV 3. The sign *KISAL* in *Lugal-kisal-si*, Obv. II 5, has precisely the *early* Fara form, *ibid.*, No. 723.

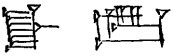
kú-bappir, is a title, Obv. I 2 ; III 3 ; *má-lăġ*, sailor, Obv. II 6. Obv. III 5, the title *gal-ligir*. This proves that *nimgir*, *nigir*, *libir* = *nagiru* is *not* the *gunu* of *UR* as has been supposed from Syl. B, WEISSBACH, *Miscel.*,

(1) A copy of this text was given in OECT. VII, tablet 13, but the sign in case 3 was wrongly given owing to a fault in the tablet. Sign No. 283 of my list lacks a small perpendicular stroke at the end.

p. 28, where it follows *UR*. That *nimgir* is a *gunu* sign is clear from the following forms.

A. *Déc.* XXXVI B-Rev. I 3 ; W. 1928, 16, Obv. III 5.

B.  Fara III 30, Obv. VI 1.

C.  Clay, *Miscel.* 12 VII 12.

D.  Fara, II 75 II 3 ; 33 II 9.

Obviously forms A and C are identical, the *gunu* strokes being inserted *before* or *in* the sign X. This cannot be the sign *UR*, as forms B and D (without gunufication) prove. The proper *gunu* of *UR* is REC. 439, and OECT. VII 399 and cannot be *nimgir*, *ligir*, as I stated there, but only *dùl;* see note *ibid.*, under 399. The sign X is unknown, and certainly neither *TUN* or *UR*, OECT. VII, 394 and 398. It occurs in *ibid.*, No. 403, which see for its original form. *má-gûr-gim*, and *má-gûr*, Obv. III I ; Rev. III 1, seem to be N. Pra. Obv. III 7, the sign, DEIMEL, *Fara*, No. 589, did not survive in later epigraphy. In Obv. IV 1, the sign *bád*, in N. Pr. *A-lum-bád*, has the early Fara form, DEIMEL, No. 619. Obv. IV 2, PAP-X-*ki* sic ! This sign occurs after *PAP* in an early Nippur text, BARTON, PBS. IX, No. 3 Obv. III 6 and is the same as DEIMEL, No. 363 ; cf. RTC. 13 Obv. II 3 ; *Fara*, Vol. III 30 Obv. IV 5 ; 32 Obv. III 6 ; 33 II 5 ; 34 II 5. In all other places preceded by numeral, « so many PAP(= 2 ka) of X ». But here a place name ? The sign in IV 6, *ĝa*-X (cf. I 4) is new and unlike anything now published (1). Rev. IV 2, the sign NE+PAP, OECT. VII, No. 69, apparently means *gibil* « new », here, and has an extra stroke at the end. I cannot identify the sign in Rev. IV 3 ; see No. 3 Rev. II 1.

Judging from the epigraphy and seals of the Red Stratum it is impossible to date it any considerable time after the tablets and jar seal impressions of the upper part of the Y cemetery and the period of the Fara texts. The same remark applies with even more force to the tablet No. 8 from the palace. If these tablets are contemporary with the Red Stratum its date cannot be later than 3000 B. C. It is likely that No. 8 found in the palace cemetery belongs to the age of the building, not to that of the cemetery. This tablet seems to be older than any of the others, and clearly belongs to the early Fara period. The palace had been rebuilt or throughly repaired,

(1) Hardly NA.

and this tablet probably belongs to the time of the reconstruction, about 3000 BC.

Since the pottery in the burials of the Red Stratum and all other objects agree precisely with the pottery, copper and stone objects of the palace burials the seals found in both naturally belong to the same period. Two from the Red Stratum appear on Pls. XXXIV-V. On Pl. XL a particularly fine seal found in this stratum is given. The reading of the text *I-lum-magir(ir)* has been discussed in JRAS. 1930, p. 605.

It is obvious that the seals belong to the same period as those from the palace, published by MACKAY, *The « A » Cemetery*, Part I, Pl. VI ; Part II, Plates XLI-II. *Excavations at Kish*, I, Plates XXI-II.

A note on the Inhabitants of Kish before the Great Flood

By T. K. Penniman.

From my field notes and later observations for the season of 1928-9, M. WATELIN has come to the conclusion that « the cranial evidence proves a mixed race at all periods » at Kish. As far as the work has gone, that is a very just conclusion. There seems to be no racial difference between the members of the three Arab tribes who help us in our digging to-day, and the Neo-Babylonian human remains near Nebuchadnezzar's palace. Back through the Assyrian and Cassite periods, and in the time of Hammurabi, even in the time of Sargon, King of Agade, there is no appreciable change. Though dynasties and cultures change, the three races at Kish remain, their pure types, and the various mixtures of those types, as we know them now. These three types are familiar to all travellers in Mediterranean countries and the Near East, but it may be as well to summarize their characteristics briefly.

First, there is the Eurafrican, of medium to tall stature, with tawny-white complexion, black wavy to curly hair, a very long hypsicephalic skull with prominent brow-ridges, dark eyes, and a rather broad nose and face. One may see him to-day among the Bedouin who wander about Kish, in Northern Abyssinia and Egypt, and occasionally along the Mediterranean coasts and as far as Wales. In ancient times, the type is found in Mesopotamia and Egypt, and may be compared with the Combe Capelle skull. It is possibly identical with the men who lived in the high desert west of the Nile in palaeolithic times, and is the type seen in the familiar portrait-statues of Rameses II, who, whatever else he may not have done, made certain that we should know for ever what he looked like when alive.

Secondly, there is the Mediterranean type, whose variants occur all the way from Java through India and Mesopotamia, and on both sides of

the Mediterranean. These people are of medium stature, with complexion and hair like those of the Eurafrican, to which race they are allied, dark eyes, and oval faces. They have small ill-filled dolichocephalic skulls, with brow-ridges poorly developed or absent, bulging occiputs, orbits usually horizontal ellipses, feeble jaws, rather broad noses, and slight, sinewy bodies. In ancient times their distribution was much the same as to-day.

Thirdly, there is the Armenoid type, whose relatives are found all over the Eurasiatic plateaux and mountains from the Himalayas, through the Persian highlands and Asia Minor, to the Balkans and mountain axes of Europe. On the whole, they are of medium stature, very round-headed, with well filled skulls, moderate brow-ridges, broad jaws and faces, and prominent narrow noses. They have chestnut to black wavy or curly hair, and sallow or tawny skins. One may see a good many of them in Beirut and Damascus, and not a few in Baghdad and Kish. From the dawn of history until to-day, these people have always formed a large proportion of the folk who have tilled the flood plains or sailed on the three great rivers which gave birth to our civilization.

A full account of the races of ancient Kish from the time of Sargon of Agade to Neo-Babylonian times has been published by Dr. L. H. Dudley Buxton and Mr. D. Talbot Rice in the *JRAI.*, January-June, 1931. They find all three of these races in varying degrees of mixture throughout the whole of this long period of nearly 3000 years. Their records are based upon the excavations during the years 1922-27, and my records based upon the excavations during 1928-29 from the surface of the mound of Tall Ingharra to the bottom of its Red Stratum agree with their results in every respect. Whatever the mode of burial, or whatever the change in culture, the races are the same, and remain the same to this day.

Elsewhere in this book, M. Watelin has described the great flood-layer, 30 cm. thick, which covers the entire area below the Red Stratum and elsewhere in the mound, at a depth of two to two and a half meters below the present plain-level. Over the whole of this area, as M. Watelin has observed, this flood-layer was absolutely unpierced before we broke through it. Whatever we found below it was, therefore, before it.

In chapter II, pp. 17 ff., M. Watelin has described the Y cemetery, largely following my field notes, and has re-drawn from my field note-book, graves 463 and 494. Any graves previous to 407 or after 539 I have not seen nor helped to excavate. The reader is asked then to refer to chap-

ter II for all details of the Y cemetery beyond the physical characters of the people buried in it, and the particular graves which I shall describe.

What kind of people lived in Kish before the great flood, between its unpierced layer and the modern water-table, now six meters below the plain-level, and sixteen meters below the surface of the mound of Ingharra ?

In the season of 1928-9 alone, over 70 graves in the Y cemetery were excavated, described, and drawn in full, with the objects numbered in them. But not all of the contents of these graves could be preserved. The weight of 13 to 16 meters of earth and temples had been piled upon them for millennia, and as the water, impregnated with salts, rose and fell seasonally in the mound, these graves had been alternately soaked and baked by the burning sun of a country where « the earth is like fire, and the wind like a flame », and then soaked again ; and into the lowest, the water poured as into a bath as soon as we started to dig. Many of the bones were so soft that they crumbled like damp sawdust, or bent as though they were made of putty. When I had cleaned them as far as I dared at Kish, I covered them with melted candle grease, and later, packed them in waste cotton. Many I sent to the Field Museum at Chicago, and I await their report with considerable interest. I sent the remains of about 13 skeletons to Oxford, and have by now finished the cleaning and mending of 7 (1). Professor Thomson gave me the use of a room and other facilities in the Department of Human Anatomy at Oxford, and I wish to thank him and Dr. Buxton for the help that they have given me.

It is usual to put the bones covered with grease and embedded in lumps of very hard earth into warm water, so as to melt the grease and earth away. But the greater part of these bones would not stand plain water ; even a little would cause them to swell up and bubble into a sort of fantastic white sponge. I, therefore, put them on a tray before a gas fire until the grease began to melt, and then scraped them, and chipped off the very hard earth with hat-pins and small knives. As the pieces of bone came away from the conglomerate mass, I applied hot size and water with a tooth-brush, at first very lightly, and then more generously, after the first coat had dried. When the pieces were dry, they were often hard enough to glue together with croid. Many times, though, they had been so warped by the pressure of the earth above them and by prolonged soaking, that it

(1) Written in 1930. Only one other adult cranium (from grave 600-Y-05 m, Oxford As. 13-22/5) in this series was capable of restoration and this does not alter the conclusions.

was necessary to dampen them with hot glue and water, and bend them into position.

We have then, in the University Museum at Oxford, the partial remains of 7 people from these graves between the great flood and the water-table, cleaned and mended, the remains of a few others not cleaned or mended, and the Field Museum of Chicago has the remainder for the seasons 1927-8 and 1928-9. We can describe what we have of these 7 people, and say a little about a few of the others from observations taken in the field. And while I know perfectly well that one cannot describe a whole population by describing 7 people, I describe what we have, in the hope that the present results may be compared with those from Ur, Nineveh, and other sites. Moreover, it seems likely that seven people, from very different parts of the cemetery, would shew us some of the elements of the population at the time they were buried, if not all.

First let me describe 6 crania. See Plates XLI-II. The first number under each is the serial number of the grave, giving the order in which it was found. The letter gives the area in which the grave was, and the last number gives the depth of the grave in meters. As in WATELIN'S last stratification, published in this book, I have adopted numbers 1, 2, 3, etc., for depths from the surface of the mound to plain-level ; 01, 02, 03, etc., for depths from the present plain-level to the water-table ; and 001, 002, 003, etc., for depths from the water-table to virgin soil. If a number on the photograph itself reads Y-6m., the number should be Y-06m. (1), as in the letter-press below the photograph.

468-Y-05.5 m. (2). — This cranium was found alone in the street outside the cemetery, at the corner of the long house on the opposite side. It is the cranium of an adult male, markedly narrow and dolichocephalic, with prominent parietal eminences and occiput, narrow rectangular orbits, and rather prominent brow-ridges and glabella. The sutures at the pterion form an X rather than an H. The glabello-occipital length is 192 mm., the greatest breadth cannot be taken, and the minimum frontal diameter is 100 mm. The greater part of the right side, the base, and the greater part of the face are missing. It is of the *Eurafrican type.*

518-Y-03.5 m. (3). — This skeleton was found in a rectangular tomb of unbaked brick against the south-east wall of a house in the cemetery.

(1) For 06 read 000 when comparing with the Stratification as now published in Fig. 7, p. 53.
(2) Oxford, As. 13-22/4.
(3) Oxford, As. 13-22/8.

There were no pots or objects, and the whole of the burial had slid against one end of the grave. The skull lacks the right side of the face, the greater part of the right side of the calvarium, and the base, and is much restored, as the photograph shews. The skull is brachycephalic, with an index of 80.7. The length is very near 175 mm., though the restoration may make a slight difference to this, as well as to the breadth of 141 mm. Anyhow, there is no doubt that the man had a round head. His orbits are open and well-rounded. The femur, of which I was able to save the head and part of the shaft, is platymeric, its index in the sub-trochanteric region being 71.8. The external portion of the upper tibial articular surface is very convex, and the astragalus has a squatting facet. The forearm is very short and muscular, its condition suggesting cretinism. The length is only 273 mm., though the man is fully adult. The man is of the *Armenoid type.*

519-Y-04 m. (1). — The calvarium of a woman was all that could be kept from the burials in this grave. The grave was rectangular, 1.5 m. × 1.70 m., of unbaked brick, and was 50 cm. below the preceding grave 518. It had been dug through two floors of organic débris. It contained the remains of a male and female. The man was round-headed and large, and the woman was long-headed and small. At their heads was an earthenware pot, V 831, and between their bodies was a stone for grinding corn, V 807, and a bone perçoir, V 806. All of the contents of this grave are in the Ashmolean Museum at Oxford, grouped under the tomb number, as are all of the objects from graves. The greatest breadth of the woman's calvarium is 131 mm., the length from glabella to lambda is 165 mm., and the minimum frontal diameter is 93 mm. The woman has prominent brow-ridges, and is of the *Eurafrican type*, while the man in the grave with her was of the *Armenoid type.*

426-Y-06 m. (2). — This was the skull and skeleton of a woman, who was found outside the cemetery on a pavement of badly baked red plano-convex bricks. On her wrist was a bracelet of cornelian and lapis lazuli beads, V 247, and by her knees was a large flint perçoir, V 132, with a reverse cutting edge. Both of these objects are in the Ashmolean Museum. (See Plate XI, fig. 2 also p. 12). The skull is brachycephalic, the index being 80.5. The length is 173 mm., and the breadth 139 mm. The basi-bregmatic height is 122 mm. (?), and the minimum frontal diameter 98 mm.

(1) Oxford, As. 13-22/7.
(2) Oxford, As. 13-22/3. For 06, now read 000, as in Fig. 7, p. 53.

She has a supernumerary tooth between the two middle incisors on her upper jaw. Of the bones which are complete, the right humerus, which is strongly platy-brachic, measures 318 mm., and the left tibia, which is platycnemic (index 70.1), and has a well-marked muscular extension on the foot, has a length of 358 mm. Her stature, calculated by PEARSON's formulae from the humerus and tibia, is between 1591 and 1593 mm., or between 5 feet 2 1/2 inches and 5 feet 2 3/4 inches. The left radius and ulna measure 234 and 252 mm. respectively. Like the other people of the Y area, she had no chair to sit on, but sat on her haunches, for she is platymeric (index 76.8), and there are well-marked squatting grooves on her astragali. She is not of the pure Armenoid type, but is a *mixture of Armenoid and Eurafrican.*

419-Y-06 m. (1). — The broken calvarium of a man together with his lower jaw was found in a house in the north-eastern part of Y, about 50 cm. from a baked brick wall with the usual plano-convex bricks, and less than that distance from an unbaked brick wall. As with the last skeleton described, a good part of the strata overlying had been removed during the year previous to my arrival. The jaw of this man is *pure Armenoid* in shape, the length and keeling remind one of the *Eurafrican type*, but the head is more rounded and broader than the Eurafrican, and its high vertex and flat back are more like the Armenoid. Like the Eurafricans of these depths, he has a low forehead, and like many of the mixtures here, the upper curve of his orbit is like the stylized curve of an Oriental artist drawing an eyebrow in Indian ink. He has an impacted third molar. From glabella to lambda he measures 187 mm. There is a considerable massing of bone at the glabella, and the brow-ridges are prominent. He is *a mixture of the Eurafrican and Armenoid types.*

500-Y-06 m. (2). — This man's skeleton was found in a rectangular grave of unbaked brick, into which the water poured so rapidly that it was difficult to make observations. All of the graves at this depth were more or less wet, but this one filled as fast as a bath. At a depth of 5 meters below the plain-level, grave 499 ended, and also the wall of the house against which it was built. There were then 20 cm. of ordinary earth, and another house wall of unbaked brick, in the same alignment as the preceding, began, and continued downward for 80 cm. At the foot of this

(1) Oxford, As. 12-32/1. For 06, now read 000, as in Fig. 7, p. 53.
(2) Oxford, As. 13-22/2. See note (1).

wall was a pavement of baked plano-convex brick, which had been broken through to build grave 500, just under it. The skeleton was lying in the usual position as described by WATELIN. Above the head was a pink stone bowl, V 612, and in front of the face, but at some distance from it, was a plain terra-cotta pot. Both of these are in the Ashmolean Museum, in their proper grave group. Beside the terra-cotta pot, on the side towards the head of the grave, was a single spouted jar, like number 2b in WATELIN's type series, the first on the right from number 15. See Plate I. The Ashmolean has an example of this type of jar in grave-group 479. The calvarium, which is much restored, is that of a brachycephalic man, large and strong as compared with others in this cemetery. His head-breadth is 144 mm., and the minimum frontal diameter is 106 mm. The teeth of the jaw are more worn than is usual in the Y graves. As a rule, the teeth of these people are not nearly as worn as those from the Neo-Babylonian graves. The left tibia is 401 mm. long, and on PEARSON' formula, this should make the man 1741 mm. tall, or 5 feet 8 1/2 inches, which is very tall for these Y people. He was very platycnemic, his index being as low as 53.9. The foot of the tibia and the astragalus shew that he sat in a squatting position. The marked linea aspera on the femur, and the ridges on the other bones shew that he was very muscular. His type is *mainly Armenoid.*

420-Y-04 m. (1). — This broken calvarium was lying bottom side up with no pots or objects, in earth, in a house in the cemetery, but not near a grave. From the high vertex, flat back, and general shape, I take it to be more *Armenoid* than anything else.

I have been asked by several people whether there was any social difference between the two races before the flood. As far as the evidence of the graves goes, there is none whatever. My field notes shew that the round heads were found in the rich graves and in the poor graves, and the same is true of the long heads, and of the mixtures between the two. The case of grave 519, which I have described, with both types in one grave, and very poor grave furniture, is interesting in this connexion.

As for the relative numbers of the two types, it is too early to judge. Until we have finished with what we have at Oxford (2), and the Field Museum has reported on its much larger collection, and more are brought from the field, we cannot say. What we can say of the people who buried their dead

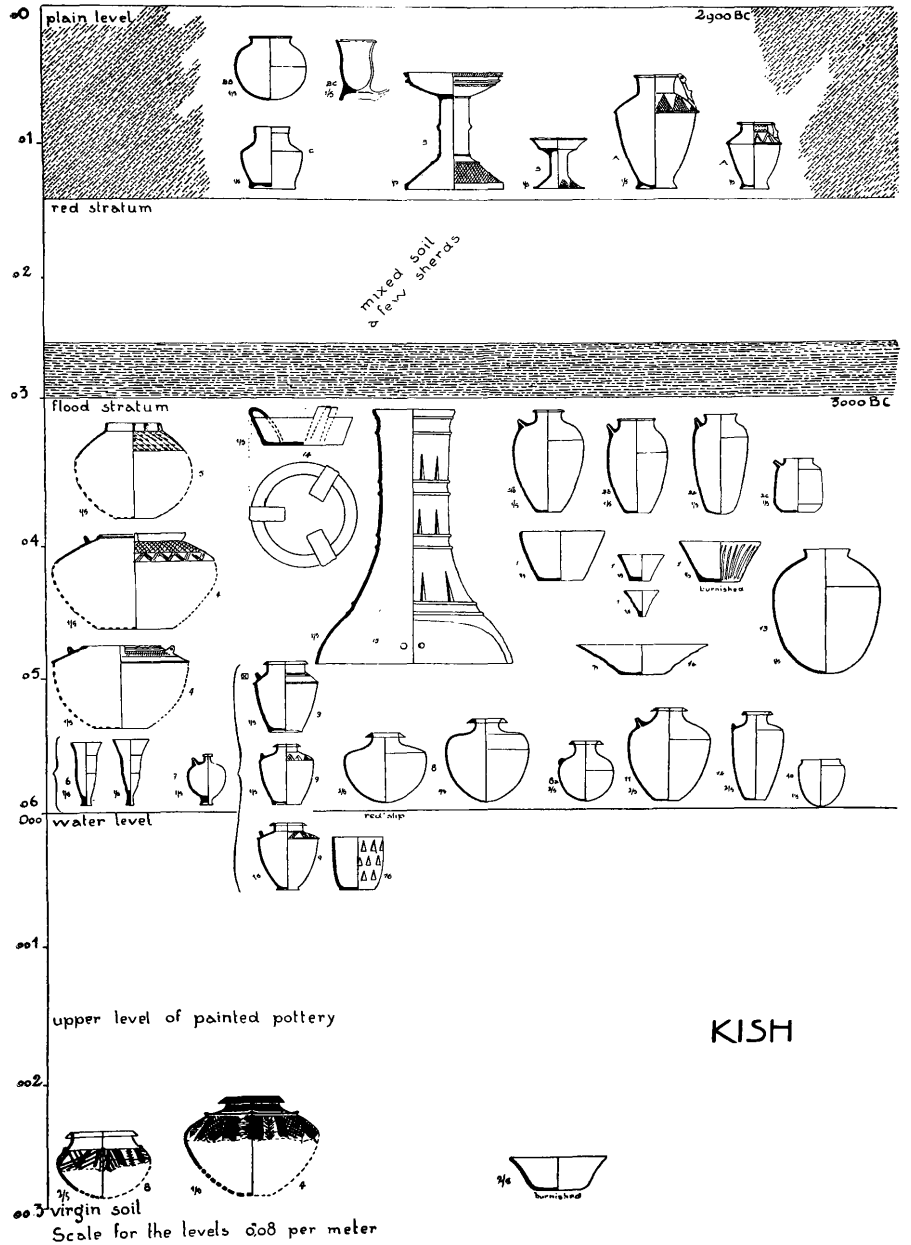
(1) Oxford, As. 13-22/6.
(2) Written in 1930. See note 1, page 67.

in Cemetery Y is that there were two races, the Eurafrican and the Armenoid, and that they were thoroughly mixed. Possibly there was more of the Armenoid element, but as M. WATELIN observes, there is « no evidence to connect any one of them with a stratum ». And this is not surprising, for language and culture are not often synonomous with race.

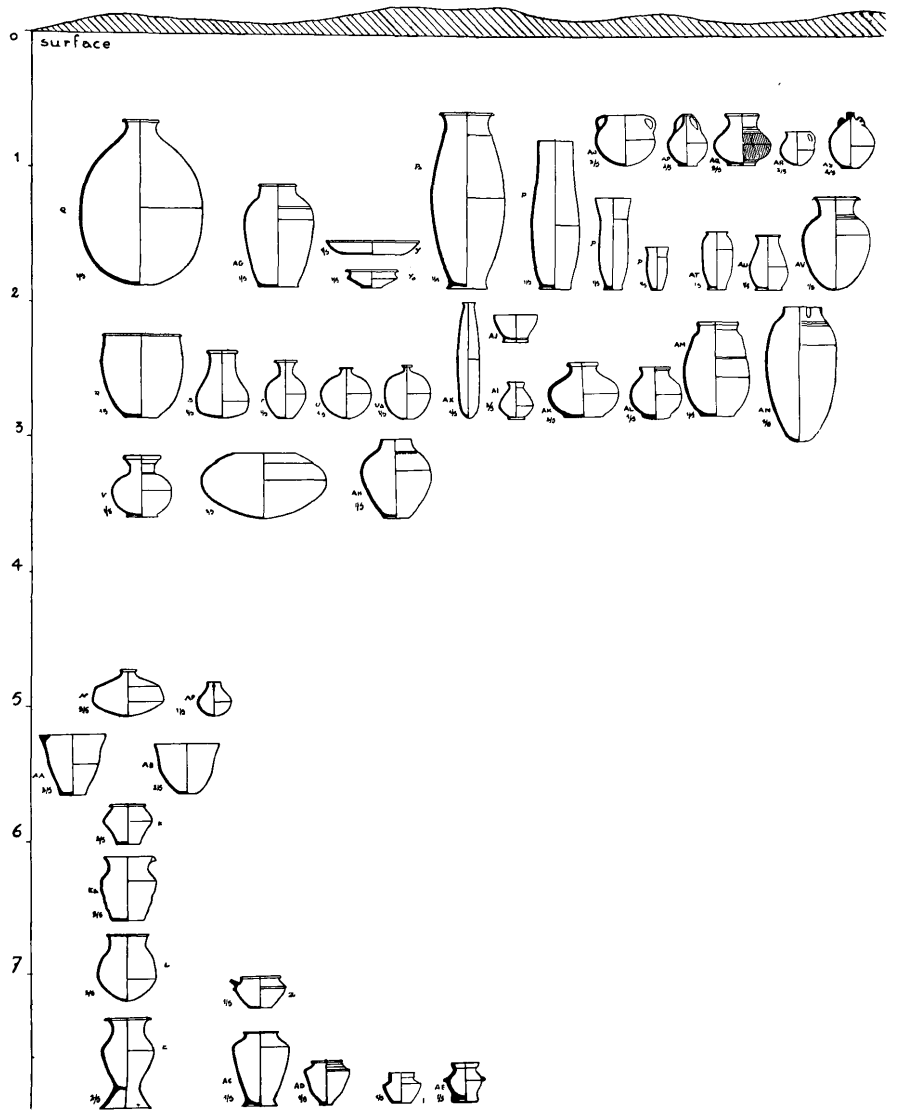
So far, the Mediterranean man in his pure type has not been found before the great flood of 3100 B. C., though many of the skulls and skeletons observed in the field may prove to belong to this type when they can be cleaned, mended, and studied. It is not easy to be certain about lumps of mud and candle grease. DR. BUXTON is of the opinion that the absence of the Mediterranean type from the present collection is a pure accident, and considering the ancient distribution of this race, the distribution of the allied Eurafrican, and that of the Armenoid race, I agree with him.

At present, it seems likely that the population of the whole 16 metres of civilizations, between the water-table and the top of the mound, is the same as that of Mesopotamia to-day. For 6000 years it has probably been the same. Generations have come and gone, armies have marched up and down the fertile land between the twin rivers ; language and rulers have changed, civilization is piled upon civilization in the vast dusty mounds of Mesopotamia ; captains and kings have gone, and left their names upon the page of history. But through all, the common people have remained unchanged. Analogies from elsewhere lead us to believe that the round-headed Armenoids are later invaders than the long-headed Eurafricans. But as far as our present evidence goes, the mixture of the two stocks in Mesopotamia is very ancient, possibly as old as the lower Euphrates itself, which with the Tigris has filled up all the Persian Gulf from Hit southwards since the last glacial epoch. I shall not be surprised if we find in years to come that the first dwellers on the banks of the Euphrates were of the same three mixed races as those who help us to dig to-day.

IMPRIMERIE A. BONTEMPS, LIMOGES



Pottery Scale from Virgin Soil to Plain Level.



Pottery Scale from Plain Level to Surface.

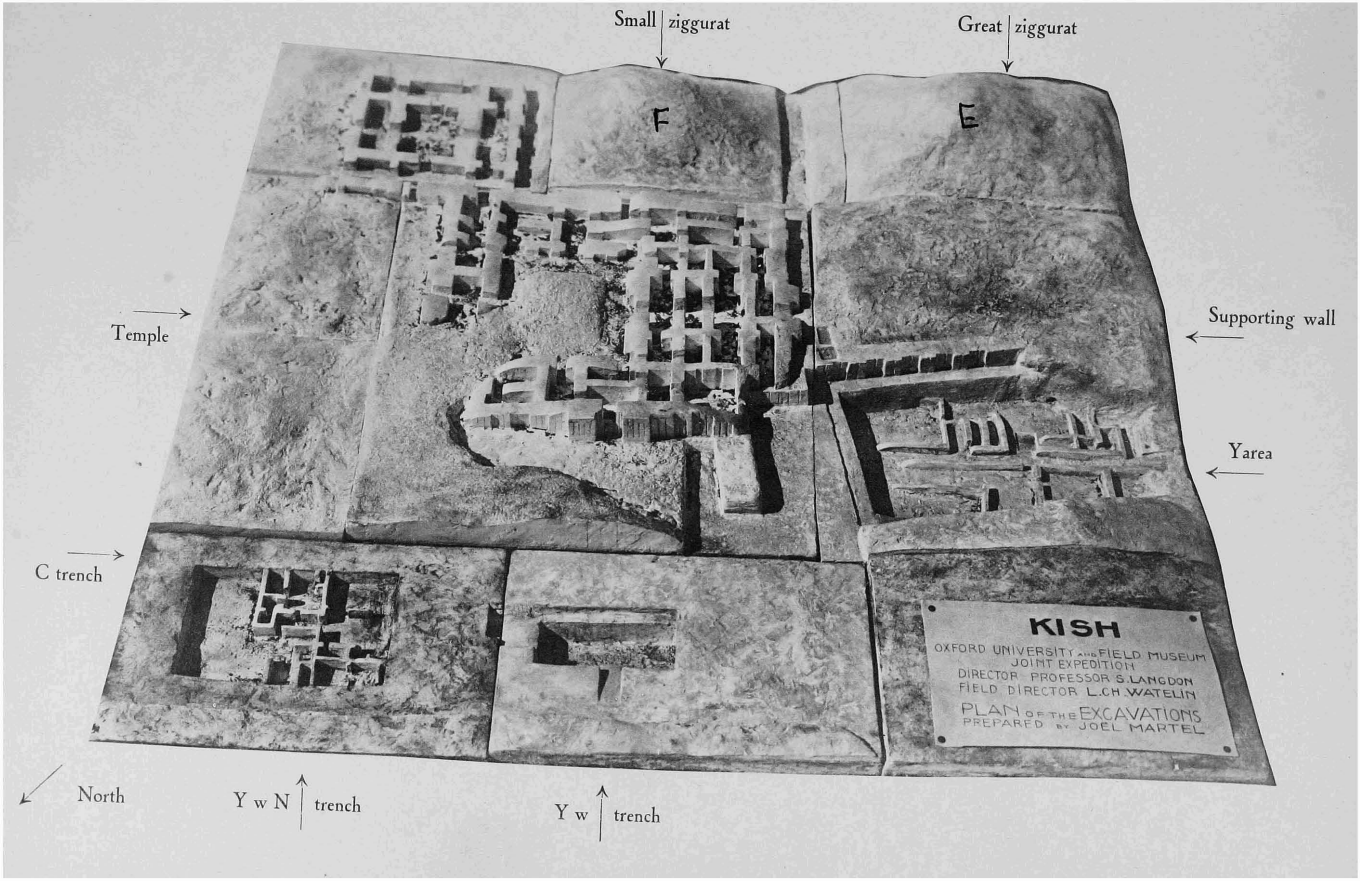
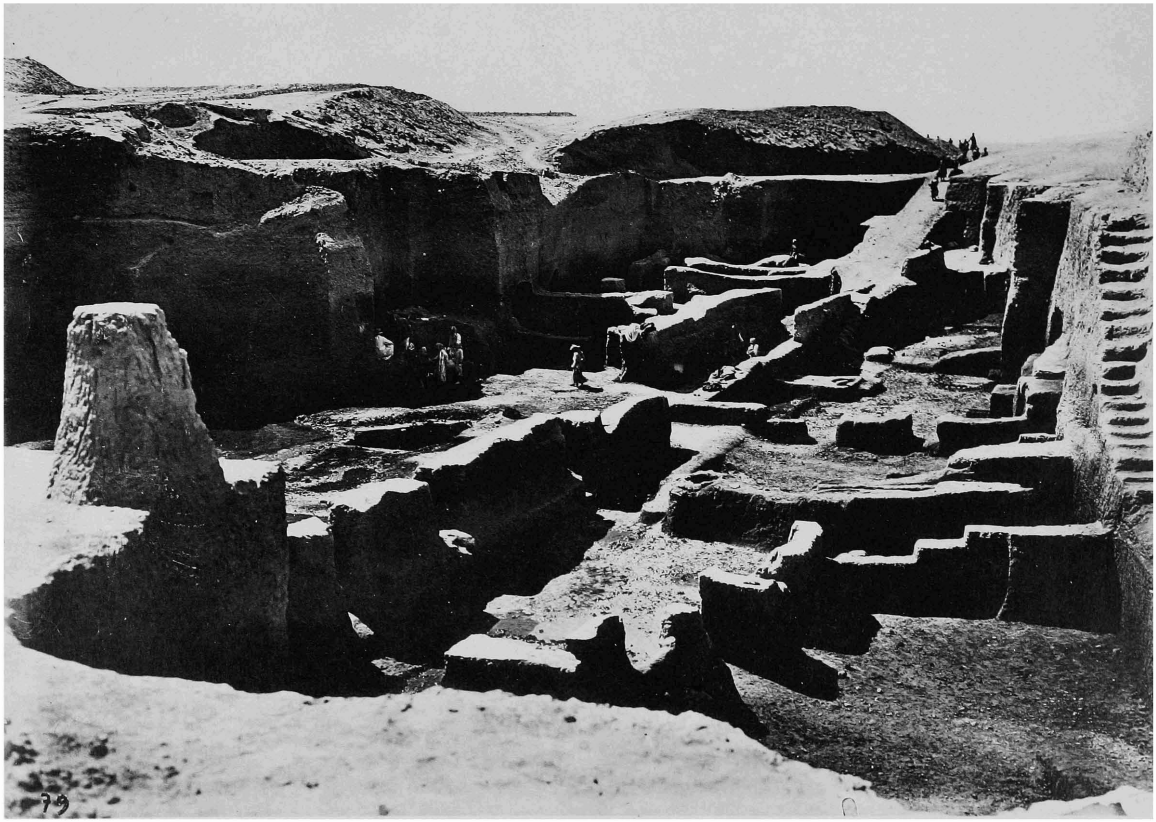
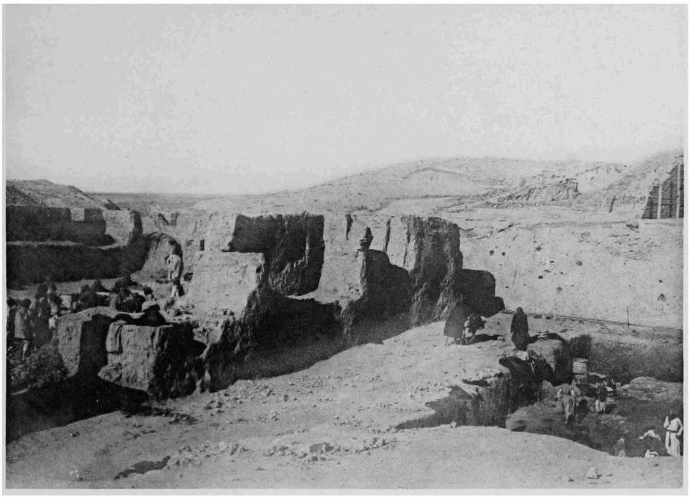

Small ziggurat
Great ziggurat
F
E
Temple
Supporting wall
Yarea
C trench
KISH
OXFORD UNIVERSITY AND FIELD MUSEUM
JOINT EXPEDITION
DIRECTOR PROFESSOR S. LANGDON
FIELD DIRECTOR L.C.H. WATELIN
PLAN OF THE EXCAVATIONS
PREPARED BY JOEL MARTEL
North
Y w N trench
Y w trench

PLATE III



Buildings in Y area Kish, looking North. – pag. 5.



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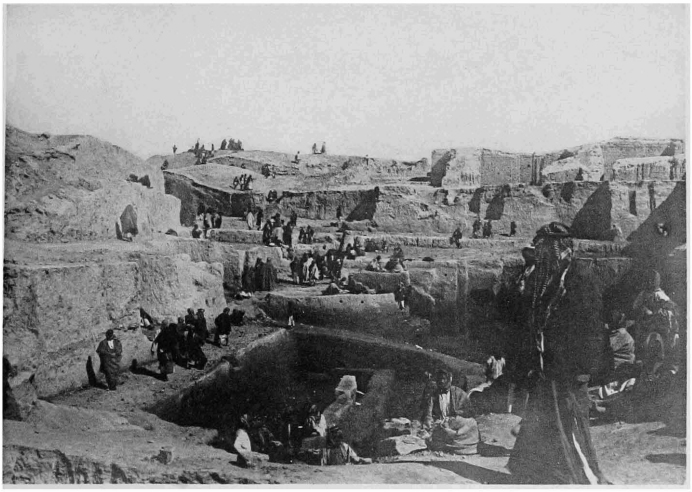
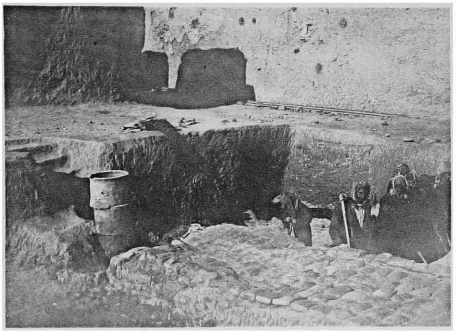


2

1. Monument Z. - page 2.
2 Y area.



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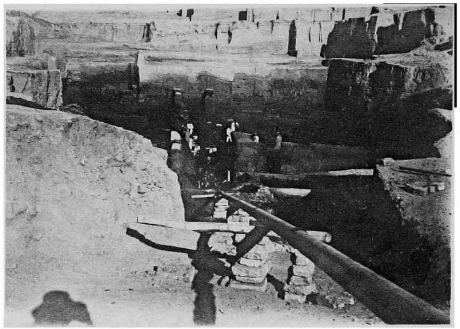

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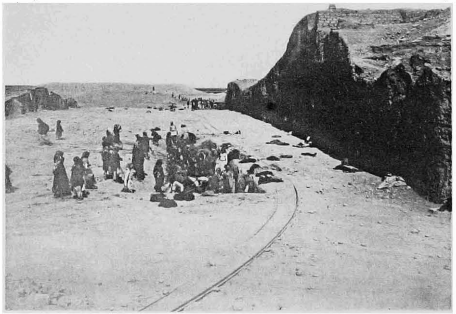
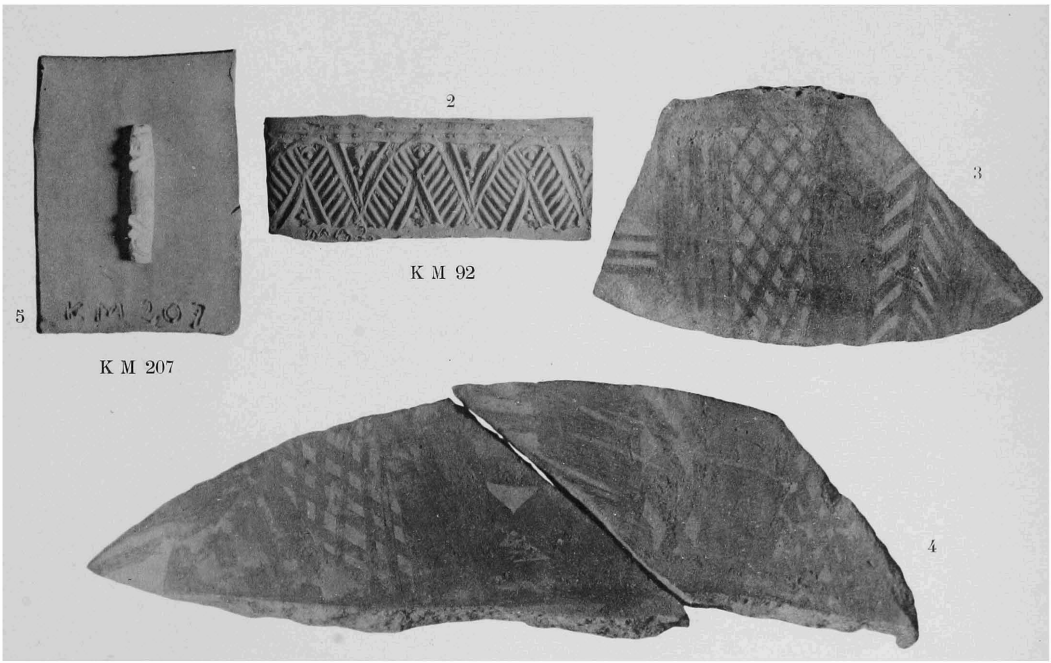


3

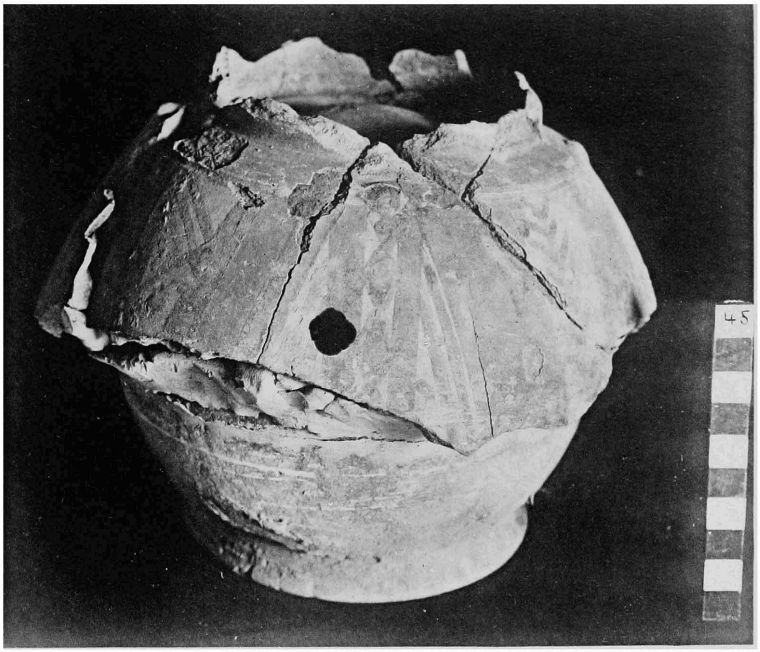
4

1. Pavement in Y area.
2. The pipe for the work below the water table. - pag. 5.
3. C trenches, in the foreground beginning ot the Y w trench.
4. Babylonian grave in C trench.

1



1. Supports from Jemdet Nasr on the left, from Kish on the right. - pag. 4.
2. Cylinder seal Kish. - pag. 4.
3. 4. Specimens of painted pottery Kish. - pag. 4.
5. Anthropomorphic bead Kish. - pag. 4.



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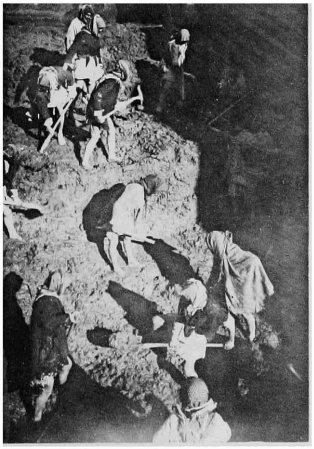
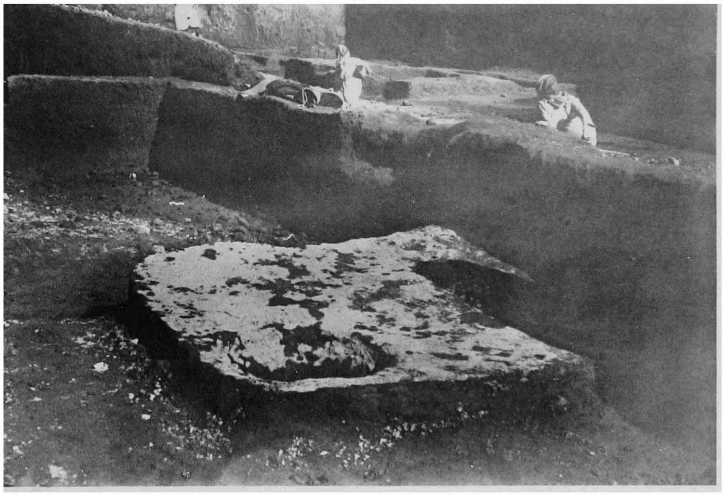


2

3

1. Specimen of painted pottery. - pag. 4.
2. Shaft to virgin soil. - pag. 1.
3. Specimen of burnished pottery, from Jemdet Nasr. - pag. 12.



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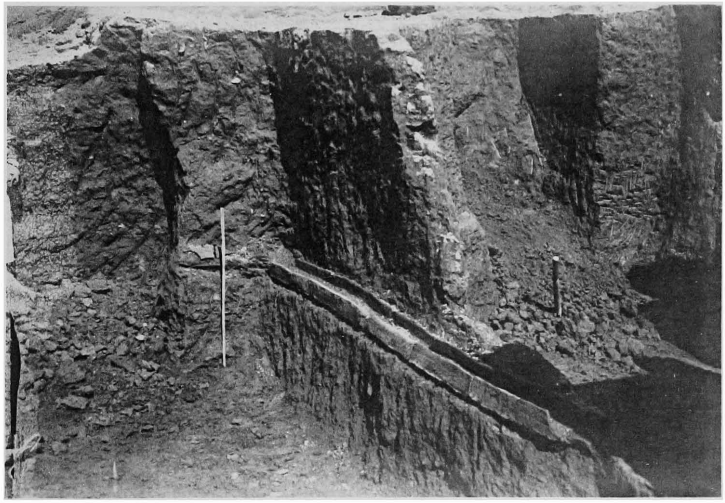

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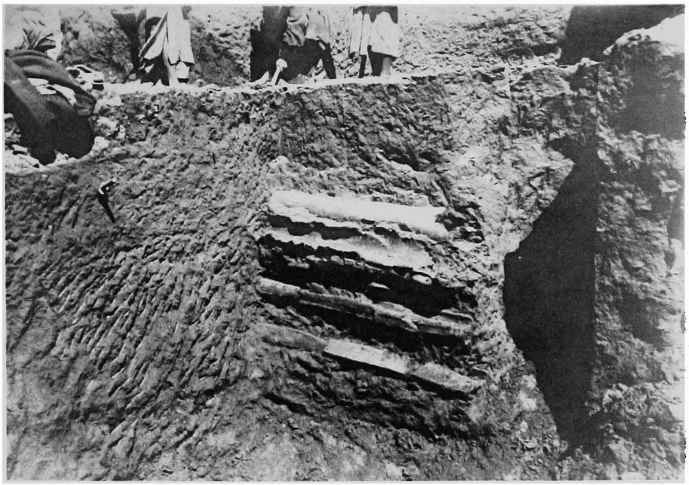
1. Sink protected by bitumen. - pag. 6.
2. Open rectangular drain - pag. 8.



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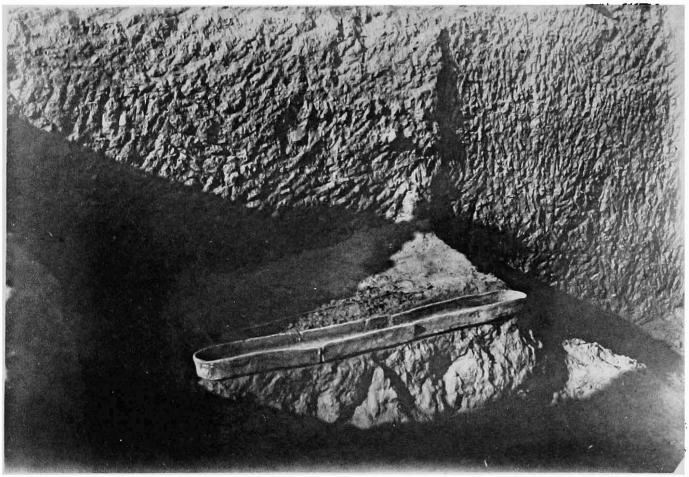
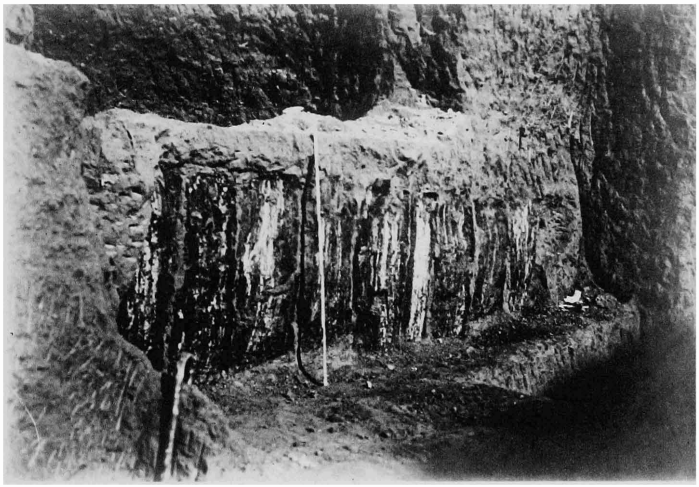


2

1. Drains superimposed as the ground rose higher. - pag. 8.
2 Watering-place for small animals. - pag. 8.



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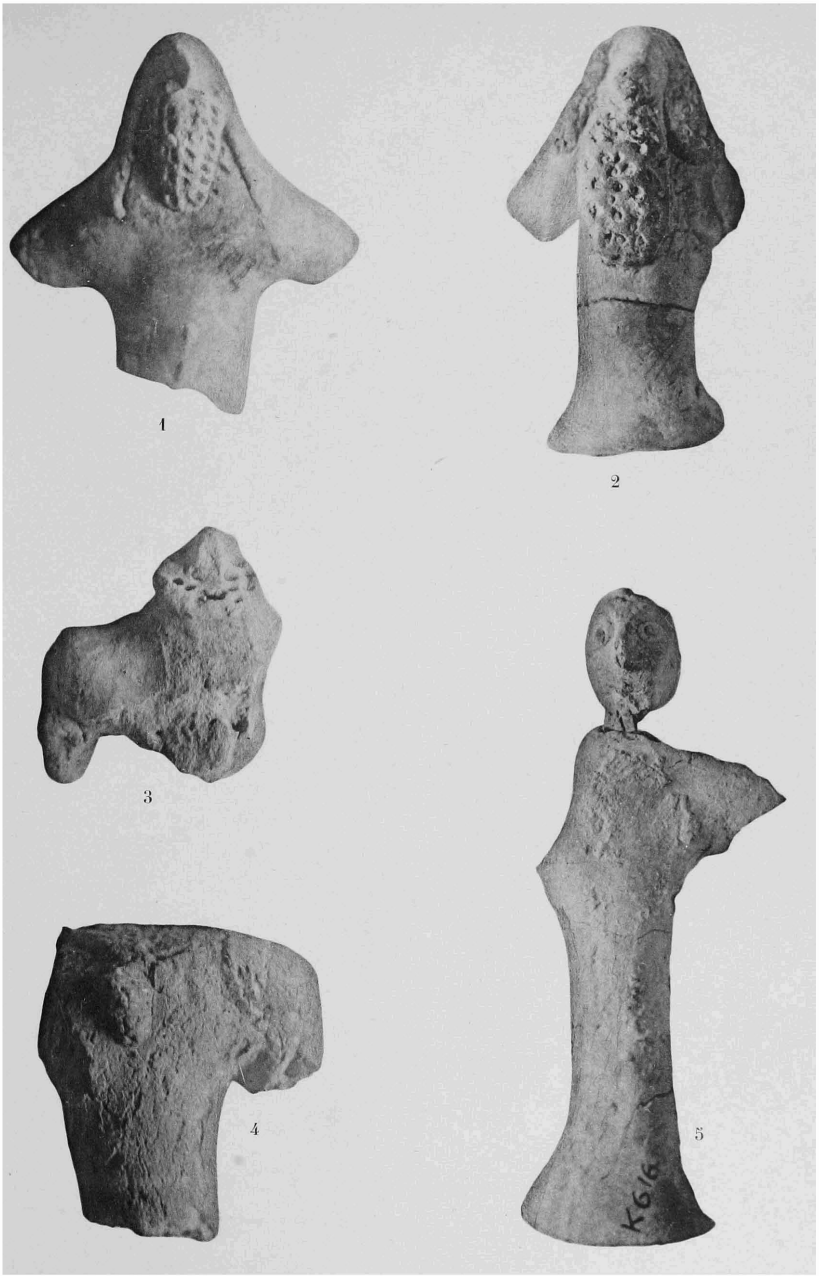
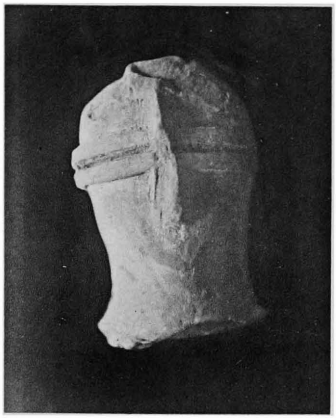
1. Boards against a Wall. – pag. 9
2. A Skeleton on the Floor in a House. – pag. 12



Asphalt figurines. - pag. 9, 46



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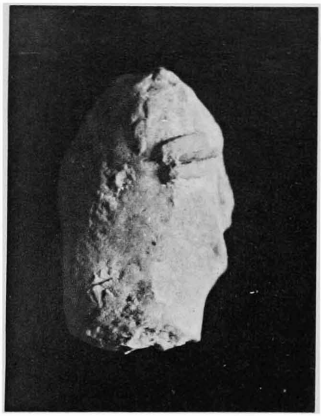

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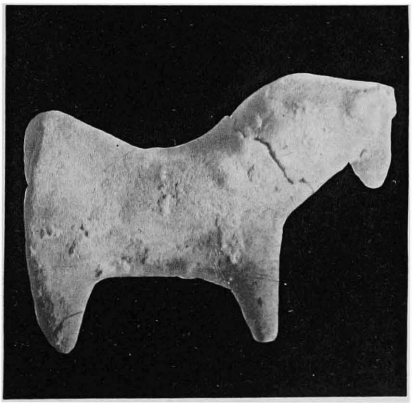

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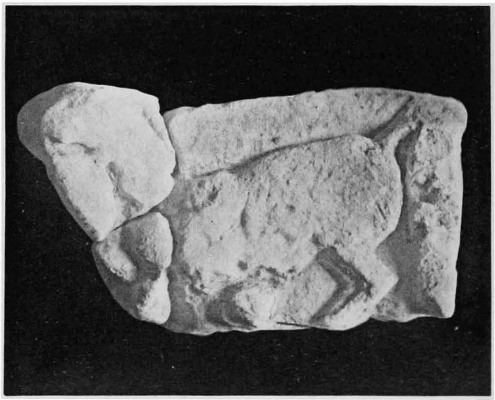
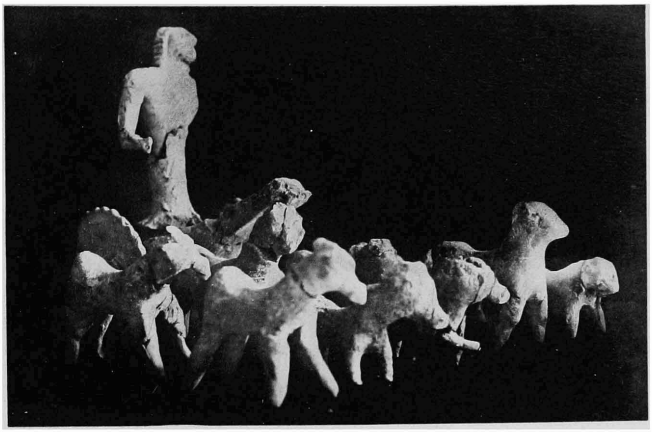
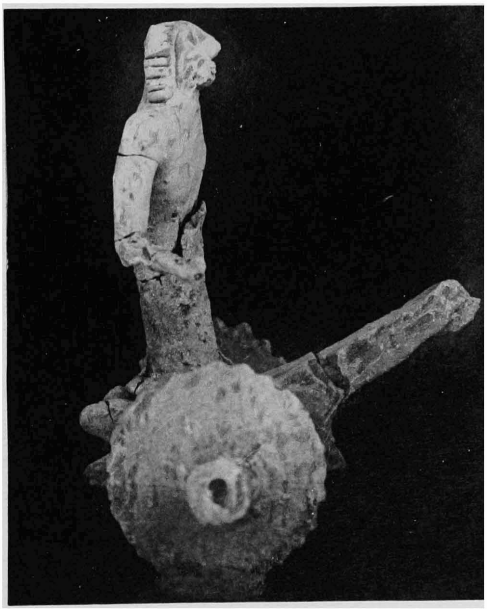


4

1. 2 Terra cotta heads. - pag. 10
3. Asphalt animal figurine. - pag. 10
4. Bas relief. - pag. 11



1



2

1. Chariot. - pag. 10
2. Chariot and driver. - pag. 10.

V. 663

V. 653

V. 651

V. 652

Cylinders seals from the first towns. - pag. 11, 29.
Seals found in stratum just above water table.

1

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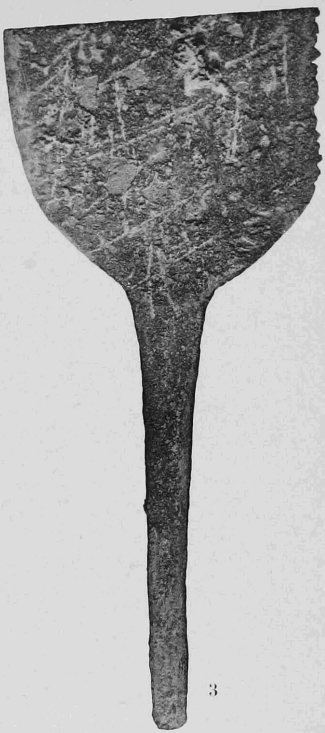
1. 2. 3. Black paste decorated with lines rubbed on by bone. - pag. 16.
4. Goblet Aa. - pag. 14.
5. Vase with incisions cut deeply into the texture - pag. 15.
6. Support (Censer). - pag. 15.

Burial Y 360.

Burial Y 373.

1

2

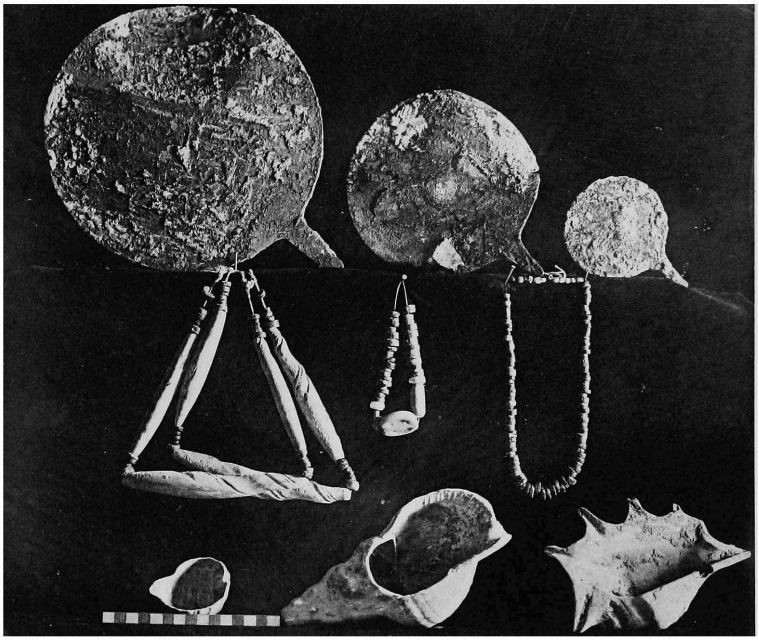


3

4

5

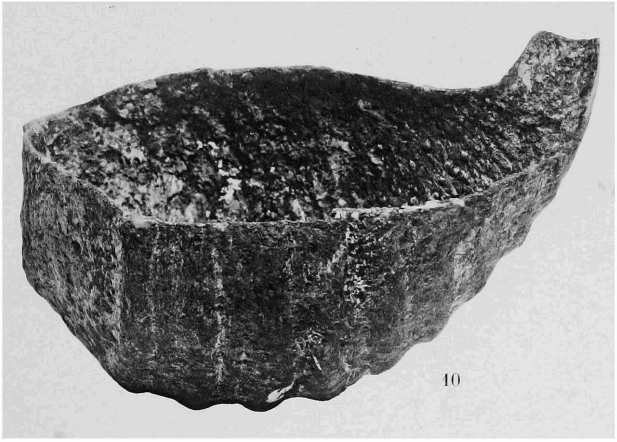
1. Copper Dagger. - pag, 22.
2. Copper Saw. - pag. 24.
3. Tang of the copper Saw.
4. Copper Spoon. - pag. 25.
5. Copper goads. - pag. 24.



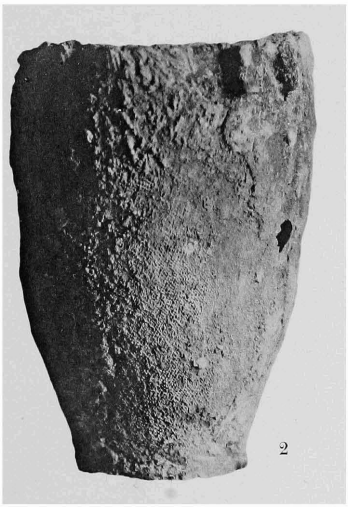
1. 2. 3.

4. 5. 6.

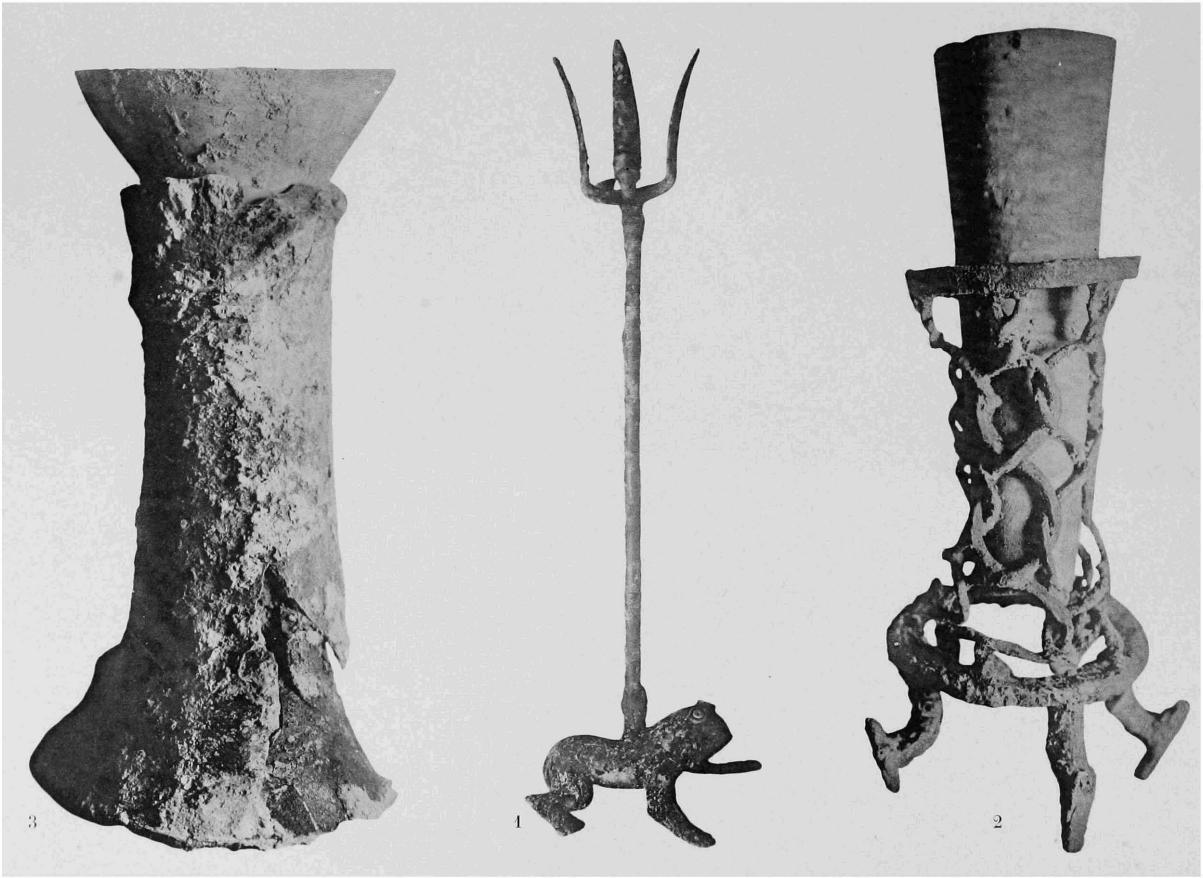
7. 8. 9.



1. 2. 3. Copper mirror from burials. - pag. 28.
4. 5. 6. Necklaces. - pag. 28.
7. 8. 9, Shells - lamps? or receptacles. - pag. 25
10. Copper lamp? or receptacle. - pag. 25.

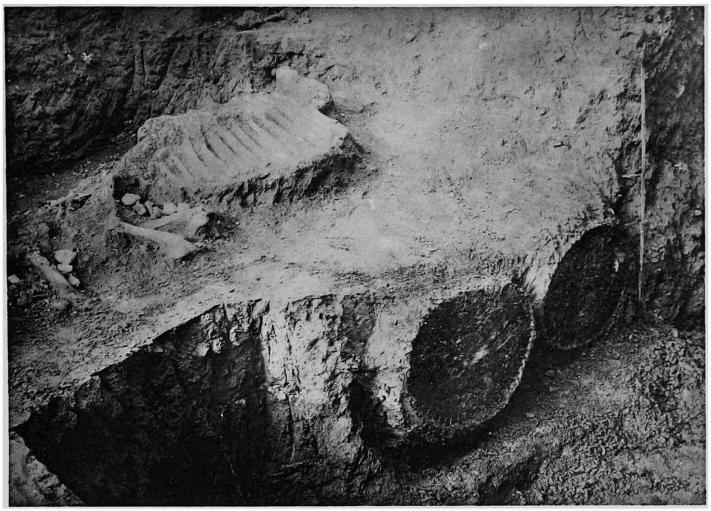


1. 2. 3. Copper receptacles. - pag. 26.



1. 2. 3. Copper Supports. - pag. 20-1 ; 27-8.

Stone vessels from burials. - pag. 29-30.



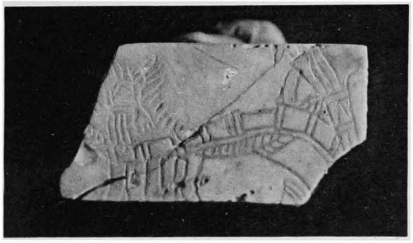
1

2

1. Two wheels of the four wheeled chariot - Skeleton of an animal seen above. - pag. 30
2. Two wheeled chariot - The wheel in the foreground is broken. - pag 30.

1

2

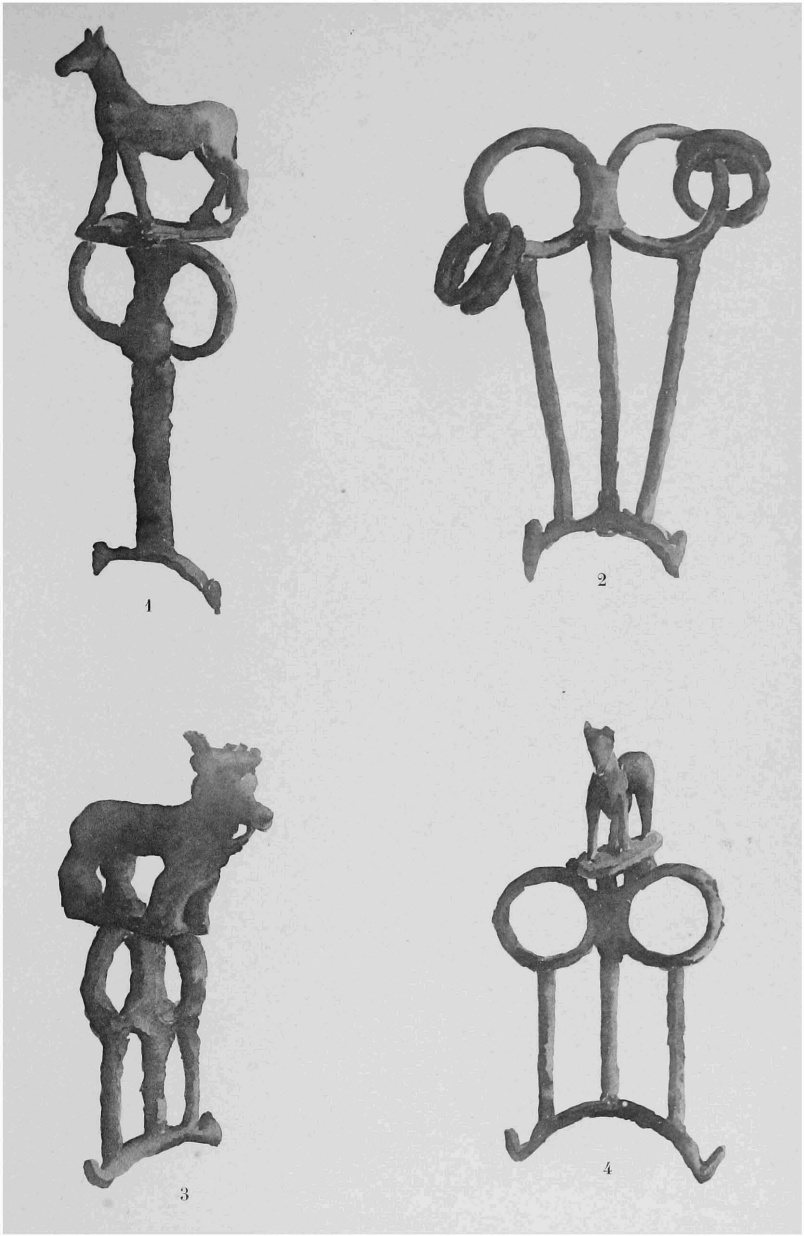


3

1. On the right the pommel or bulging end of the pole; the rein-guide is above it. On the left the jaw of an animal. See pag. 31.

2. Cylinder seal (Ashmolean Museum). - pag. 32.

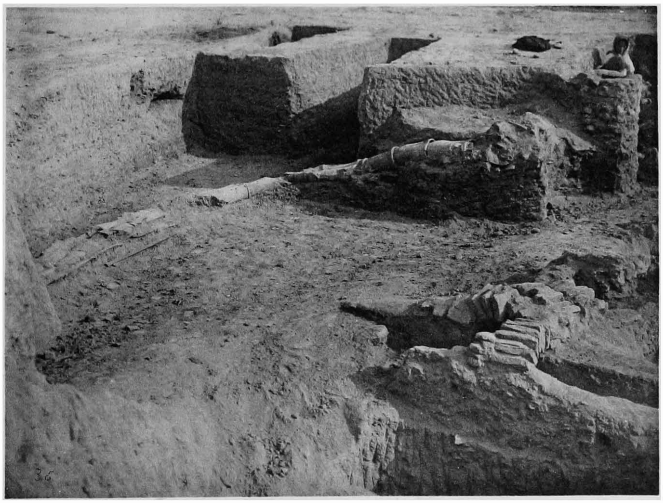
Inlay shewing the fore part of a chariot, the pole above the asses (Field Museum). - pag. 32.



1. 2. 3. 4. Rein-guides. - pag. 33.

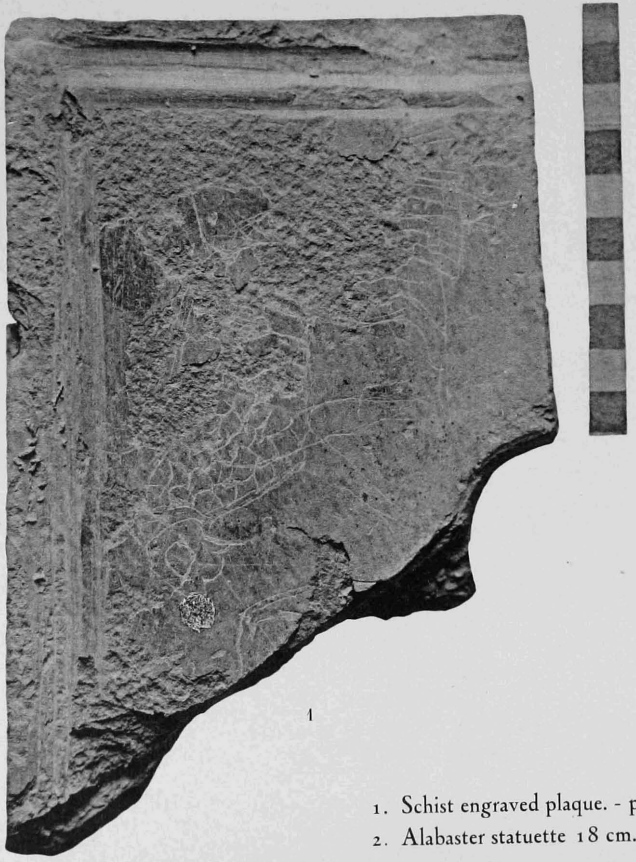
1. 2. 3. 4. 5. Seal Impressions. – pag. 35/42 and f.

1

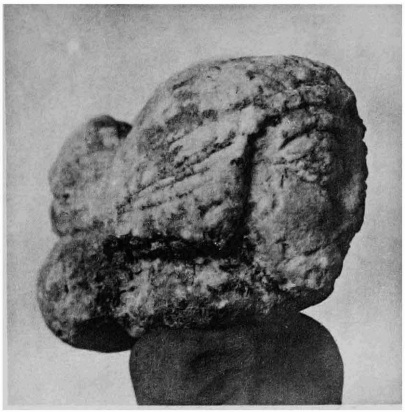


2

1. Furnaces *in situ* at Jemdet Nasr. - pag. 40.
2. Tubular drain in trench Y w. - pag. 48.



1. Schist engraved plaque. - pag. 45.
2. Alabaster statuette 18 cm. high.



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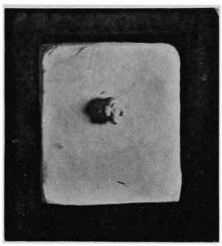
Alabaster.

1. Head of woman, plain level in the centre of the tal.
2. 4. Heads of men, plain level from Y w.
3. Head of man 1^{m} below plain level from Y w. – pag. 46.

The Sumerian painted terra cotta head. - pag. 46.

1



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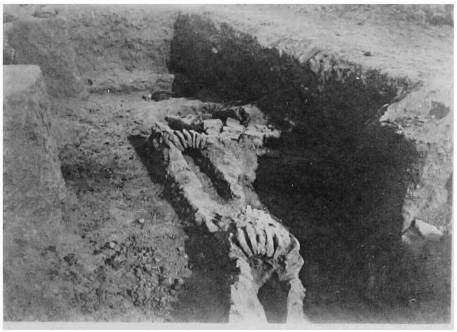
7

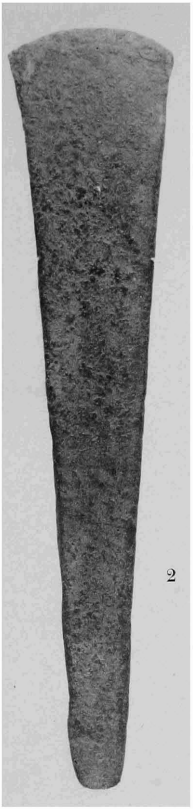
Natural size.

1. Head of woman, alabaster. - pag. 46.
2. Head of man, lapis-lazuli. - pag. 46.
3. Shell inlay. - pag. 46.
4. 5. Enamelled terra-cotta bulls. - pag. 46.
6. Head of lion from a stone vase. - pag. 46.
7. Lamp. - pag. 46, 51.

Buildings in Y w N. - pag. 48.



1



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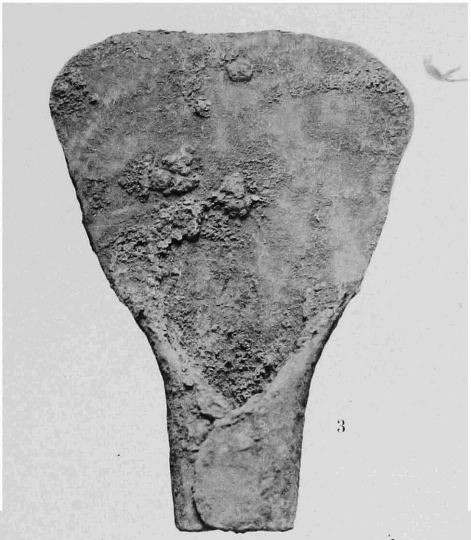

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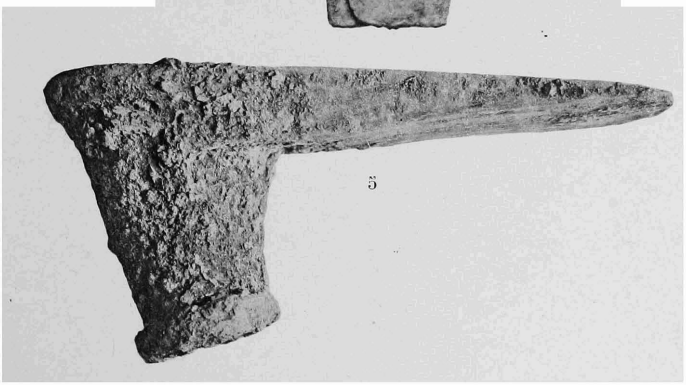
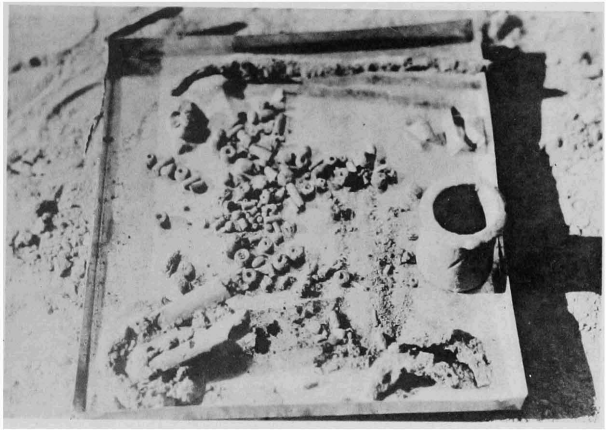


5

1. Drain pipe. - pag 48
2. 3. 4. 5 Weapons and implements from Sargonic period.

1

2



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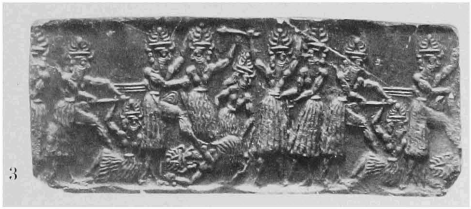
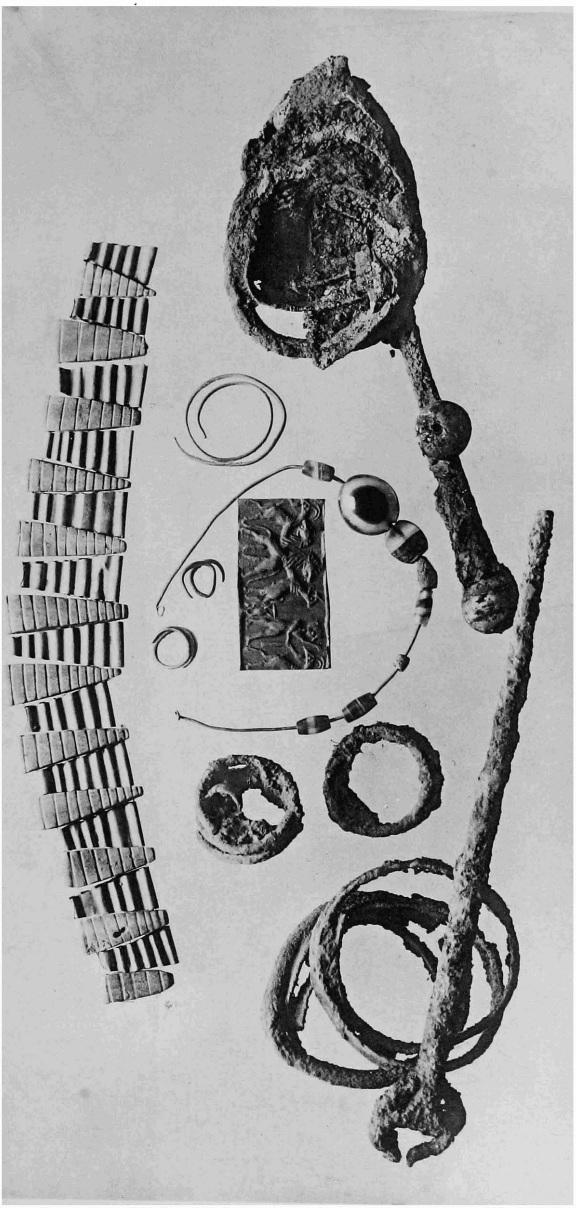


Burial 306. - pag. 50.

1. The skull with its gold band.
2. The necklaces and alabaster vase.
3. The cylinder seal.



Burial 344. - pag. 50.

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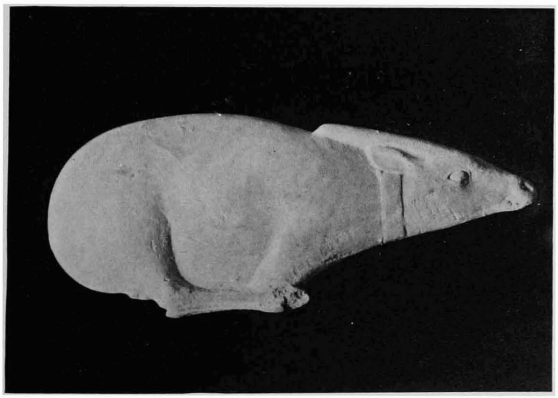
1. Neo-Babylonians grave. - pag. 52.
2. Parthian grave. - pag. 54.
3. 4. Parthian statuettes. - pag. 55.

1



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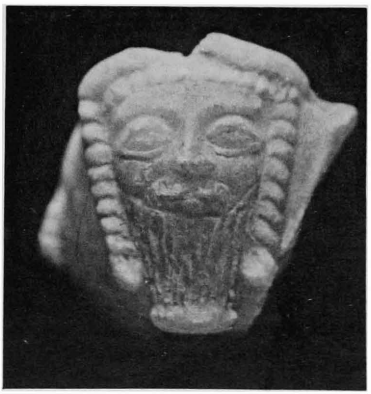
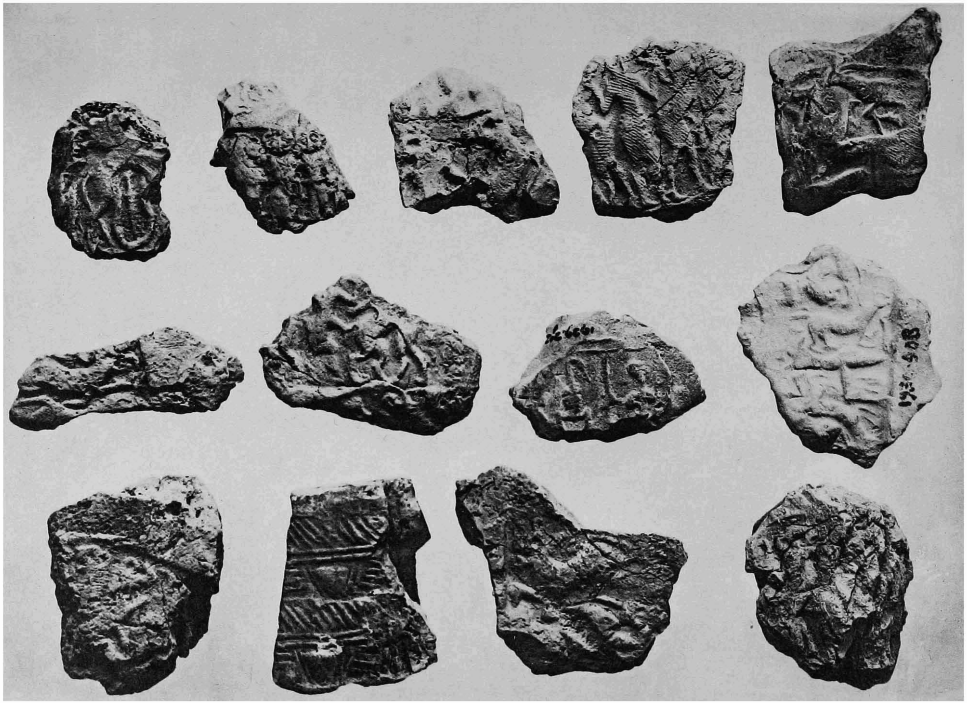
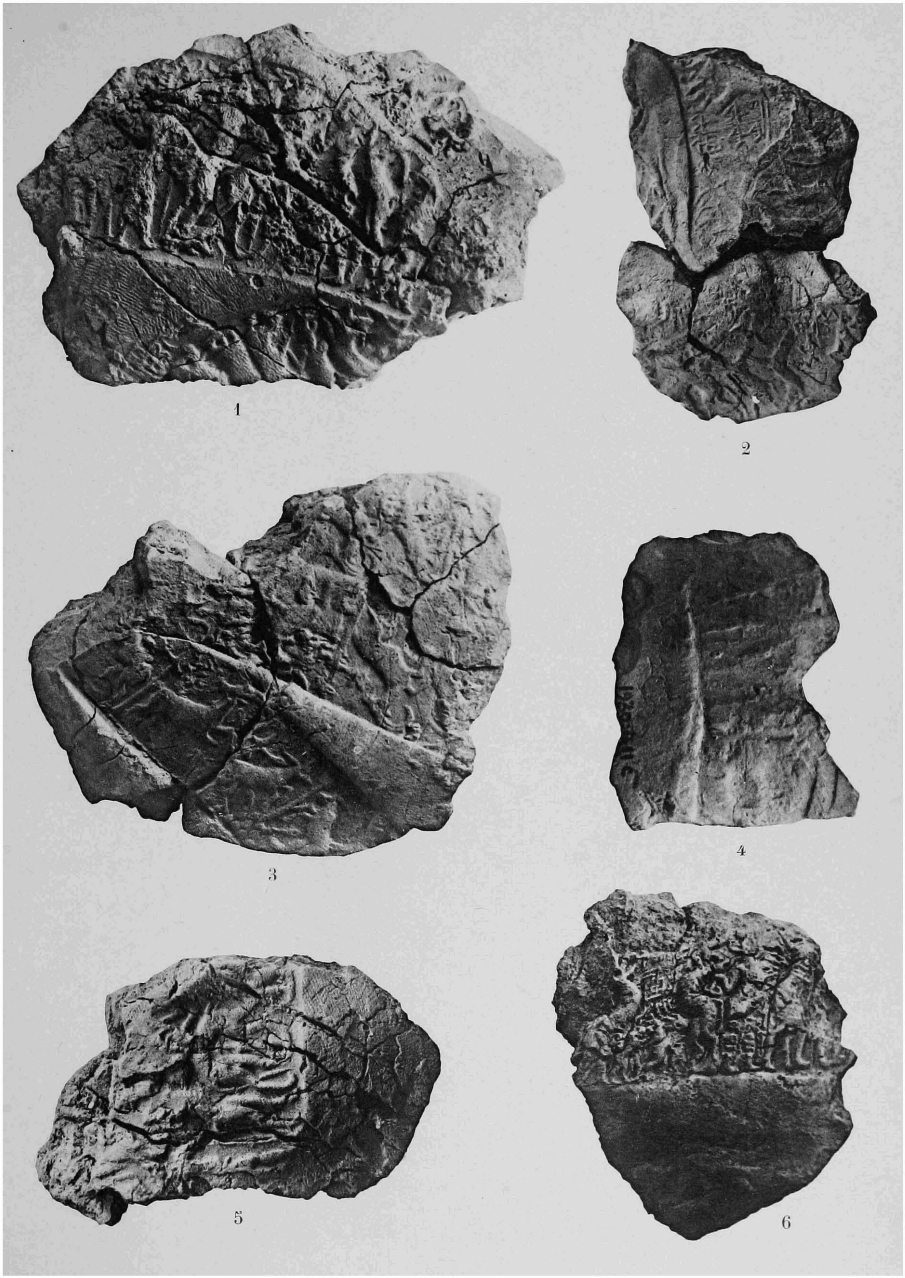


3

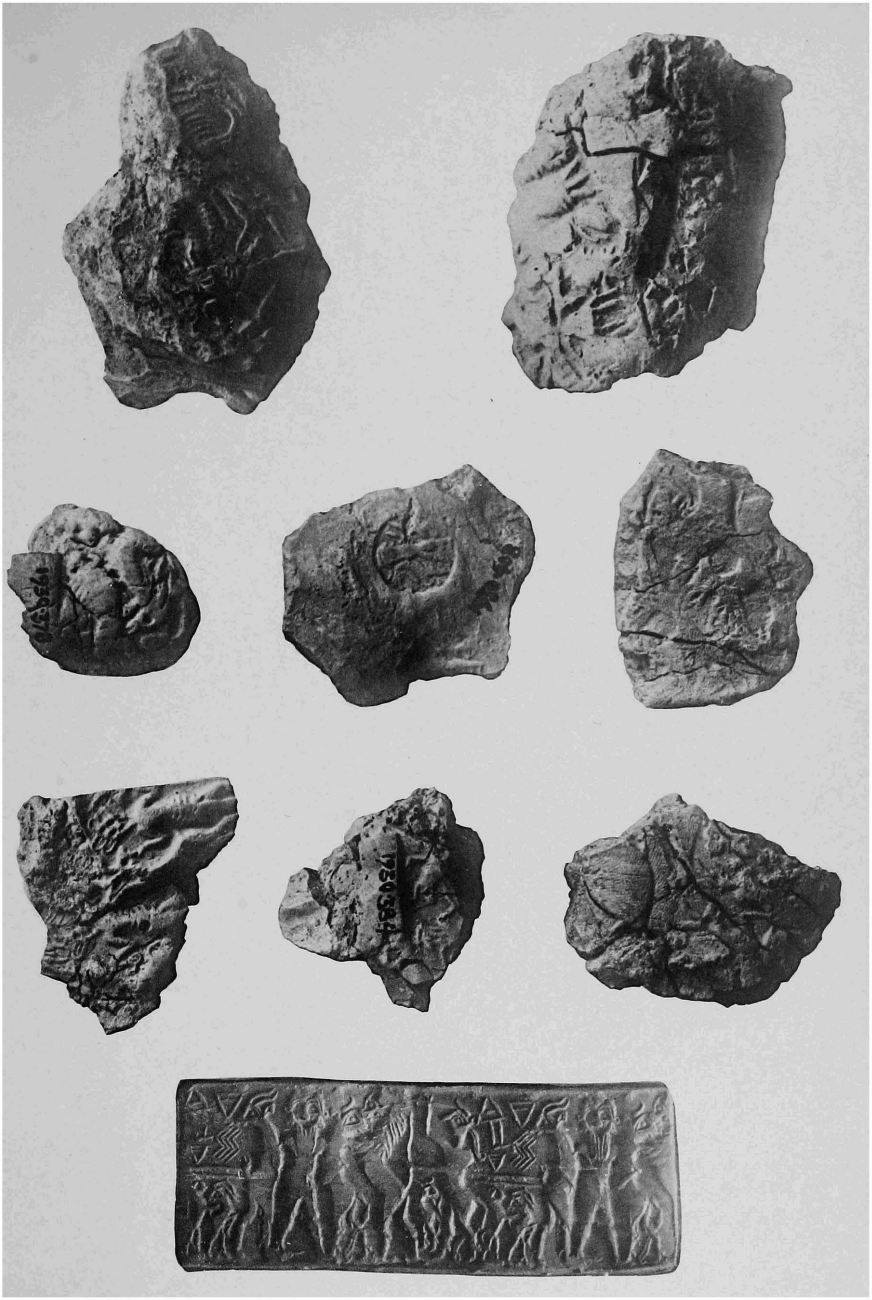
1. Jars *in situ* from below the pavement of the Sumerian palace (Mound A).
2. Spoon in shape of antelope, Neo-Babylonian or Egyptian (Mound W).
3. Fragment of Sargonic alabaster Lamp, plain level Ingharra.



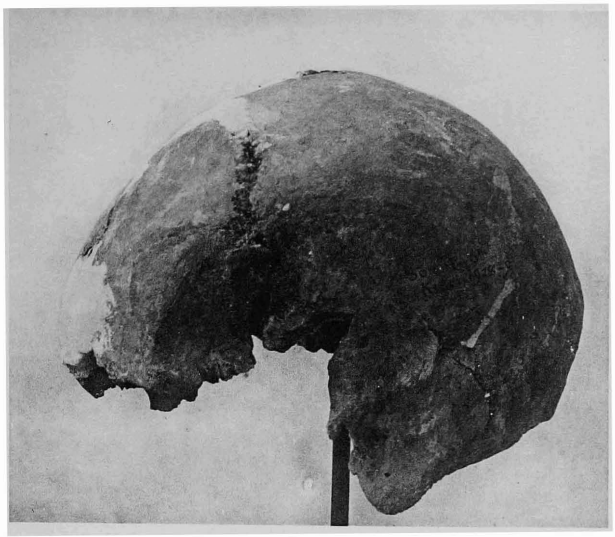
Impressions of seals. – pag. 35.



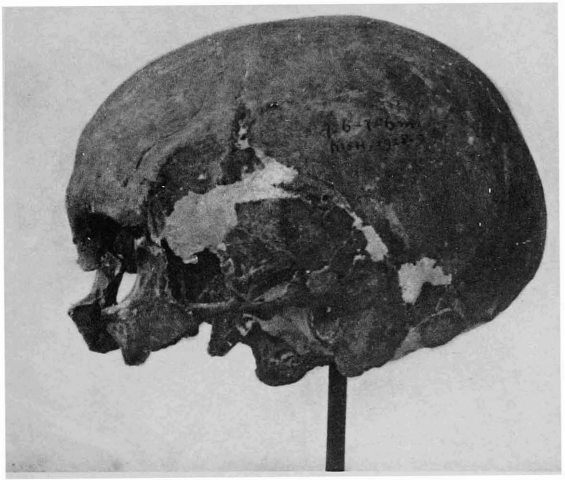
Impressions of seals. - pag. 35, 42.



Impressions of seals. - pag. 35.
Impression of inscribed Cylinder Seal of Ilum-magir. - pag. 64.



500 - Y - 06m. Mainly Armenoid. - pag. 70.



426 - Y - 06m. Armenoid & Eurafrican. - pag. 69.

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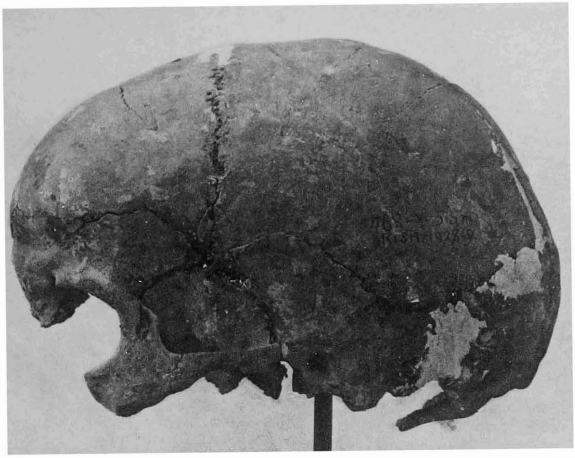
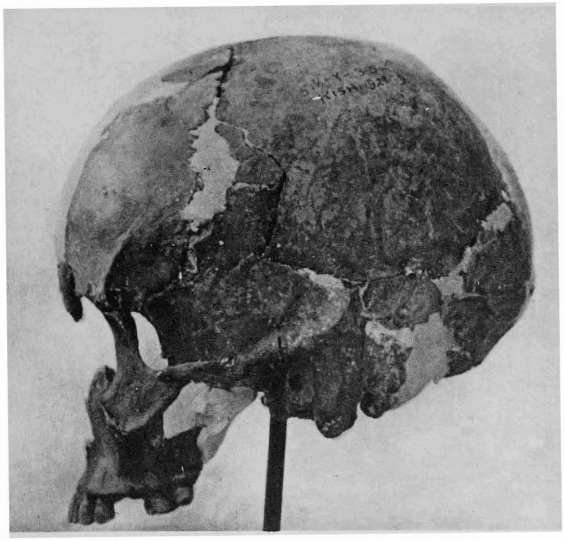
INHABITANTS OF KISH BEFORE THE FLOOD



468 - Y - 05.5m. Eurafrican. - pag. 68.



518 - Y 03.5m. Armenoid. - pag. 68-9.

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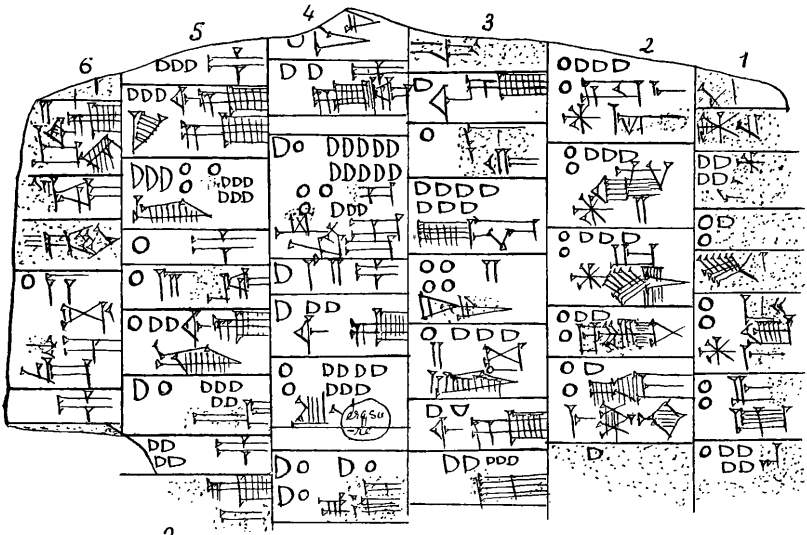
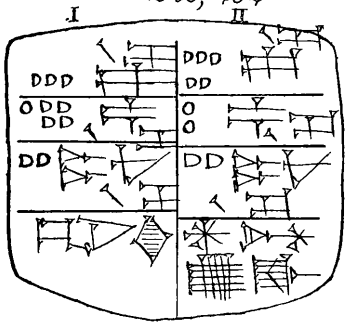
INHABITANTS OF KISH BEFORE THE FLOOD

1

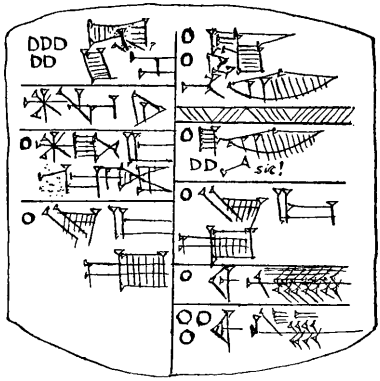
1930, 360, Reverse.



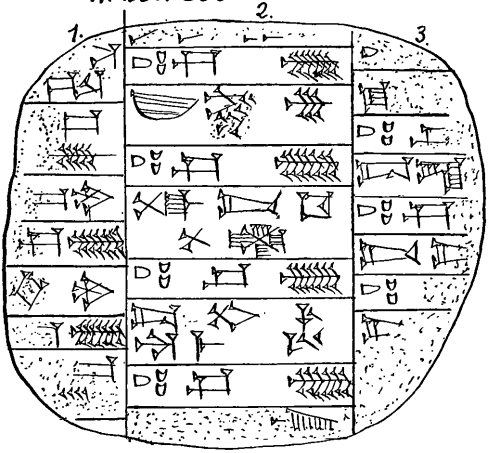
2.
W. 1928, 434



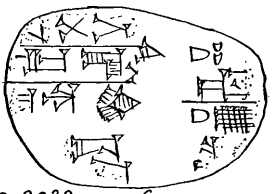
3.
W. 1928, 428, Reverse.



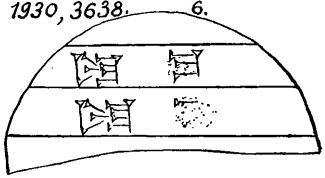
4.
W. 1930. 352



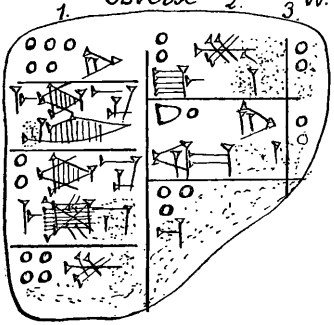
5.
W. 1930, 349 a

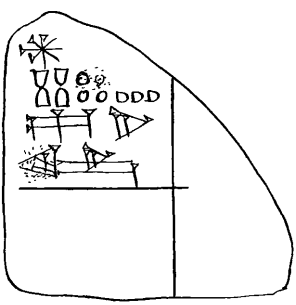


1930, 3638.
6.



7.
Obverse
W. 1928, 17.

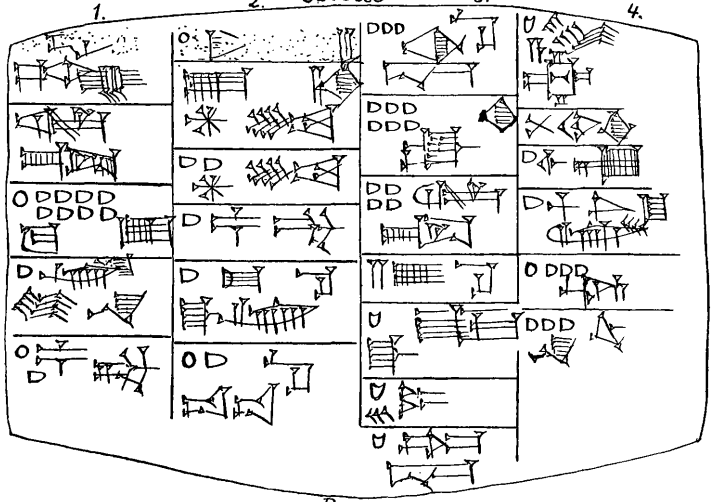




8.

W. 1928, 16.

Obverse



Reverse