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... Excavations at
Tel Umar, Iraq.

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PRELIMINARY REPORT
UPON THE
EXCAVATIONS AT TEL UMAR, IRAQ

CONDUCTED BY

THE UNIVERSITY OF MICHIGAN
AND
THE TOLEDO MUSEUM OF ART

LEROY WATERMAN, DIRECTOR

University of Michigan Publications

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ANN ARBOR
UNIVERSITY OF MICHIGAN PRESS

1931

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PRINTED IN THE UNITED STATES OF AMERICA
BY THE ANN ARBOR PRESS, ANN ARBOR, MICH.

PREFACE

PRELIMINARY excavation at Tel Umar, Iraq, was begun December 29, 1927, on behalf of the American School of Oriental Research of Baghdad, with funds supplied by the Toledo Museum of Art, Ohio. The first season's work continued until March 10, 1928, with the help of two assistants, F. H. Sproule (University of California, engineering) and N. Manasseh (B.A., American University of Beirut) from the surveying staff of the archaeological expedition at Beisan, Palestine.

Upon my return to America a flexible five-year program of excavation was arranged under the auspices of the University of Michigan and the Toledo Museum of Art, with funds supplied by the Museum. Field work was carried on from November 10, 1928, to February 28, 1929, with a staff of four men, composed of Dr. Clarence S. Fisher of Ramallah, Palestine, N. Manasseh, R. H. McDowell (B.A., Wooster College, Ohio), and Mr. Harry Dorman, Jr. (B.A., Harvard). The expedition was particularly fortunate in having the expert advice and assistance of Dr. Fisher.

During the early summer of 1929 R. H. McDowell built at the mounds a substantial expedition house, which was ready for occupancy at the opening of the third season, September 24, 1929. Work continued until February 1, 1930, with a staff of eight men, including Franklin P. Johnson (Ph.D., assistant professor of Greek, Duke University), S. Yeivin (M.A., University of London), A.M. Mintier (Waynesburgh College, Pa.), sent out by the University of Pennsylvania Museum, Philadelphia, Pa., N. Manasseh, R. H. McDowell, and Charles Spicer, Jr. (B.A., Michigan, 1929).

Thanks are due to the Royal Air Force for furnishing invaluable airplane photographs of the concession; to the Department of Irrigation for loaning the bungalow at Baruda

as expedition headquarters for the first two seasons, and for the opening of a road to Tel Umar; to the office of the Mutasserrif of Baghdad for police protection and local government coöperation; to the Iraq Railways for the loan of instruments; and to the Department of Antiquities for unfailing courtesy and helpful coöperation.

LEROY WATERMAN
DIRECTOR

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I. INTRODUCTION

By LEROY WATERMAN

DETERMINATION OF THE SITE

IN THE autumn of 1927 it was my privilege to make a first-hand study of Babylonian topography for the purpose of locating the much-disputed site of Opis (Babylonian Upi, Upa), the older Sumerian Akshak. The method used included an attempt to combine the results of a critical examination of the literary evidence with the topographical requirements and a test of the conclusions by archaeological means.

That the native Babylonian sources as well as the late classical writers referring to this region placed Opis on the Tigris at the narrowest point between the two rivers, i.e., on a line running eastward from ancient Sippar (Abu Habba) has been convincingly set forth by F. H. Weissbach (see articles "Cunaxa" and "Sittake" in Pauly-Wissowa, *Real-Encycl.* and *Orientalische Studien*, 1929, pp. 241-251), and the evidence need not be repeated here. Xenophon's divergent witness in the *Anabasis* (2.3) has been adequately accounted for by the same scholar. It remained for the present writer to investigate and verify the topographical features of the country between Sippar and the Tigris, particularly along the line of the modern Yusufiyah canal which crosses the valley at this point. Much valuable assistance in this study was rendered by the Department of Irrigation, and particularly by A. Gray, British engineer in charge of the canal, who called attention to the extensive remains of an older canal, which the Yusufiyah displaces, with every indication that it is the modern counterpart of the "Royal Canal" (Nahr Malcha) of the late classical writers, going back to the times of Nebuchadrezzar, Sennacherib, and possibly even to the days of King Hammurabi (c. 2000 B.C.).

This location of the canal is fixed at its western end by Sippar, and its direction is controlled by the given length of the old canal (five *beru*, Nebuchadrezzar, *Wadi Brisa and Nabr el-Kelb Inscription*, V, 70; two hundred stadia, Strabo, 2.1.20), roughly twenty miles, which requires the canal to be at the narrowest point between the rivers. Strabo's description of the canal is so precise that there can be scarcely any doubt where its main course lay.

The eastern terminus alone of the present waterway calls for closer scrutiny and comment, for, when within approximately five miles of the Tigris, the Yusufiyah pauses in its eastward course, sends out a series of short diverging spurs as if feeling for a way to the river, and then sharply tails off to the right in a line roughly parallel to the present course of the Tigris. Here the criterion of the canal as a guide seems to fail. It no longer explains but itself demands explanation, since undoubtedly the earlier waterway flowed through to the Tigris. This will be discussed in connection with the changing bed of the Tigris.

If, however, the main east and west line of the canal be projected to the Tigris, it will pass just to the north of the imposing complex of mounds known locally as Tel Umar, situated approximately two miles west of the Tigris (see Fig. 1). To one approaching this point from the west, these far-spreading mounds five miles in circumference immediately arrest the attention. E. E. Herzfeld states in his *Archäologische Reise im Euphrat- und Tigrisgebiet* that he noted these mounds in passing down the Tigris and he calls attention to the probability of their interesting character. If he had actually reached them from the west there can be little doubt what conclusions he would have reached.

Lying as they do to the south of the main line of the canal joining the two rivers, the mounds fit Nebuchadrezzar's description of the canal as reaching the Tigris "above" Opis. In extent they also adequately provide room for Pliny's estimated population of Seleucia (600,000), and there are no

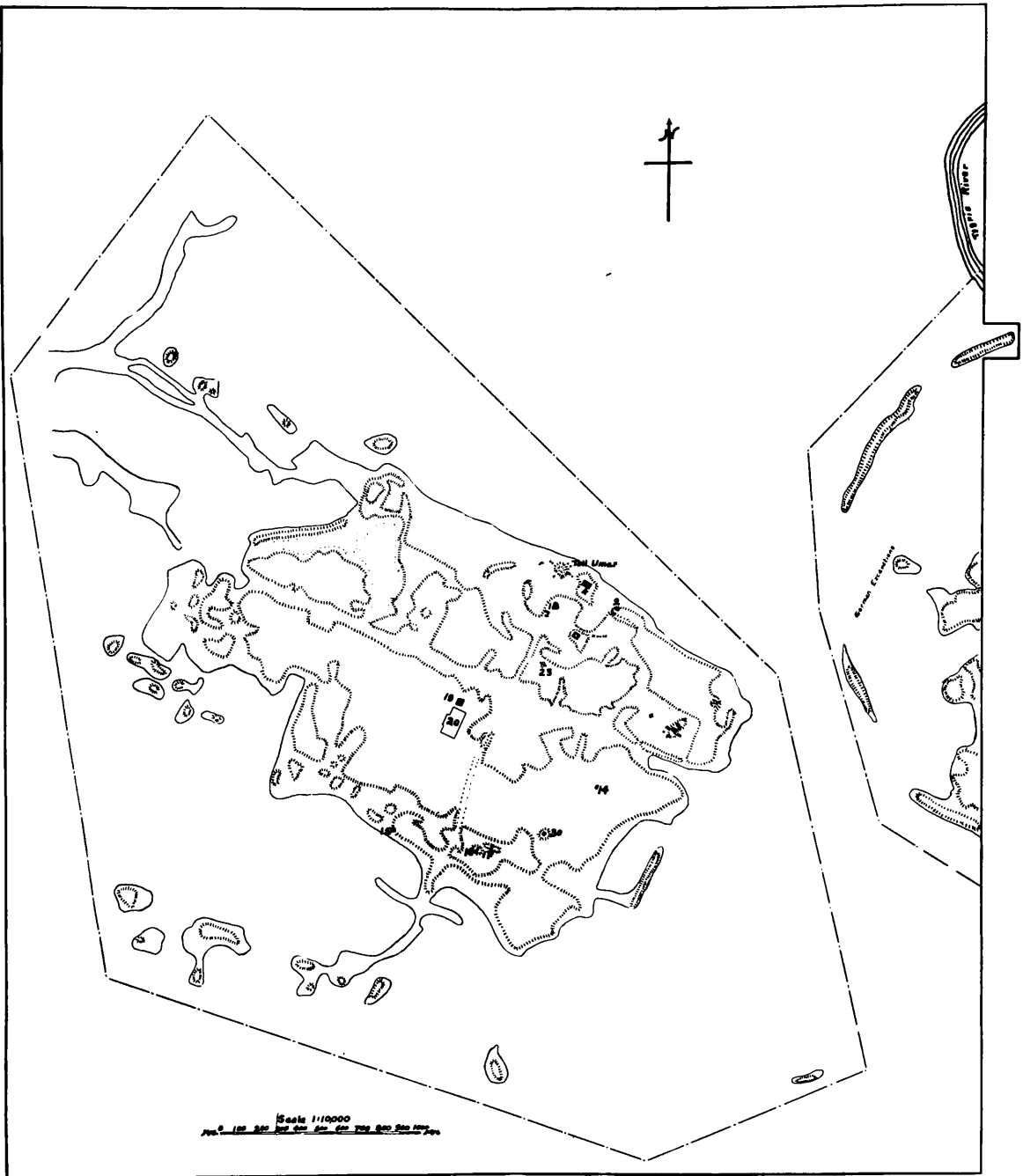


FIG. 1. Tel Umar complex of mounds (Seleucia) ; Ctesiphon at right

other mounds west of the Tigris in the neighborhood of the canal that do this. Strabo's location of Seleucia at the junction of the canal and the Tigris, on its west bank, is verified at this point on north and south lines by the much more common description of Seleucia as opposite Ctesiphon, for Ctesiphon accurately fulfils these conditions so far as the Tel Umar complex is concerned. Strabo's further identification of Seleucia with Opis (16.1.9), when coupled with the topographical requirements, including the line of the canal, furnishes a complete theoretical demonstration for the site of Tel Umar as that of Opis, except for one thing—it is not on the Tigris. If, however, any one requirement has to be dispensed with this is the one to cause the least anxiety. One of the most obvious characteristics of both the Euphrates and Tigris is that they have repeatedly changed their courses in historic times. Moreover, they annually threaten to extend their meanderings at flood stage.

The absence of the river at Tel Umar is not so much of a handicap to the argument in hand as the basis for a more definite conclusion. The great area of the mounds with no supply of living water reaching them challenges the imagination. First of all, the mounds call for a city far greater than any indication we possess from the city of Opis. Only a city of the proportions attributed to Seleucia could adequately fulfil the requirements. But whatever its name, it is quite obvious that no such impressive aggregate of population ever grew up and flourished in a waterless area. In a word, the presence of the river is essential to explain the existence of the Tel Umar complex. The configuration of the eastern margin of the mounds and the surface indications of the terrain between them and the present Tigris favor a change in the river bed. This situation is doubly assuring with respect to Opis. It provides a site on the Tigris at a point just inside Nebuchadrezzar's defences across the valley. It accounts for the disappearance of Opis as a city when it was absorbed by the greater Seleucia; it explains the complete separation of the

tradition of the name from the site by reason of the withdrawal of the river; and it provides an explanation for another hitherto unexplained fact. In certain Assyrian inscriptions¹ Opis is referred to as if located on the east bank of the Tigris, while the prevailing references place it on the west shore. If the river once flowed by the Tel Umar mounds, not only is a flood break to the west easily probable, but the topography distinctly favors the line of the Yusufiyah tail as its course. A very natural possibility is that the Tigris at flood stage backed up in the Nahr Malcha and broke through near to where the Yusufiyah tail begins, forming from there temporarily a new bed, which the Yusufiyah still utilizes.

Under the circumstances, the somewhat prominent though limited group of mounds on the immediate west bank of the Tigris opposite Tel Umar and labeled "Seleucia" on current maps of Iraq did not seem to bear upon the problem in hand, in spite of the name "Seleucia" attached to them. Not only did they appear to be inadequate for so large a city, but the possibility had long been noted by travelers that the Tigris may have broken through the northern wall of Ctesiphon at the present "Sur," in which case the river must have plowed a new path through that city and so have left a portion of it on its western shore. The German excavations at Ctesiphon in 1928-29 have abundantly confirmed this assumption.²

PRELIMINARY EXCAVATION AND ARCHAEOLOGICAL IDENTIFICATION

On the basis of our investigation, application was made to the Department of Antiquities of Iraq to excavate, and on December 27, 1927, the permit covering the Tel Umar complex of mounds was granted.

A limited amount of excavation was done the first season, primarily to assure identification. However, three occupational levels were uncovered and over one thousand objects

¹Compare D. D. Luckenbill, *Ancient Records of Assyria and Babylonia*, I, 295, 309.

²*Antiquity*, 3 (1929), pp. 434-451.

were excavated. Terra cotta figurines, seldom complete, were most numerous with over four hundred; next came pottery, objects of bronze and other metals, glass, lamps, stone, ivory, bone, shell, coral, faïence and bitumen.

The first season's work resulted among other things in furnishing archaeological and documentary evidence which cumulatively pointed to the place as the site of Seleucia and gave some evidence of the oldest Sumerian occupation. This consisted, for example, of terra cotta figurines of unmistakably Hellenistic workmanship from the third level; coins bearing the name Σελευκεία (Seleucia), as well as the names of Seleucid kings; also two bitumen sealings of Seleucid salt tax receipts.

As regards remains from the earlier occupations, three stone door sockets were found. All are badly worn, having been found in place in late levels. The upper surface of these around the central depression gives the impression of having been inscribed, and on one of them there are unmistakable traces of three lines of fairly early Sumerian writing. With some hesitancy I have made the following tentative transcription and rendering:

- (1) ur-ur lugal-e (?)
 - (2) ki-in-gi-ak
 - (3) lugal uh^{ki}
- "Urur king of Sumer, king of Akshak"

I regard (2) as reasonably certain, as also the first two signs in (1). The last signs in (1) and (3) are doubtful, but more followed at this point.

Two basalt slabs were recovered. They measured 18 by 26 inches and 14 by 26 inches, both being 1¾ inches thick. They were found laid over burials and when removed fell into small fragments. These have been restored and on the second there appear to have been three or more lines of writing. Near the end of the second line I have provisionally read Un-da-lu-lu lugal uh^{ki} mu VI (?) . . . "Undalulu king of Akskak six years."

AIRPLANE ASSISTANCE

Early in the first season's work an arrangement was made with the Royal Air Force of Baghdad (Hinaidi) to furnish for the expedition an airplane photograph of the mounds. Owing to trouble with the desert tribes the photographs were not available until October, 1929.

The prime importance of the airplane for archaeological survey work has now been thoroughly demonstrated, thanks primarily to the splendid work of the British Royal Air Force and to the publicity given it by O. G. S. Crawford, editor of *Antiquity*.

It is interesting to learn through a private communication from Mr. Crawford, dated April 8, 1930, that Wing Commander Insall, V. C., stationed at Baghdad, at some time during 1927 flew over the Tel Umar mounds and being thus able to observe from the air the rectangular pattern of the streets (later clearly shown in the air photograph) expressed the opinion to an official in Baghdad that the site was that of Seleucia rather than the one so labeled on the west bank of the Tigris on current maps of Iraq. Manifestly the rectangular pattern of streets is not in itself a sufficient warrant for such an identification. The area is even more important. It is not clear to what extent Commander Insall inspected the mounds on the west bank of the Tigris to compare the pattern of the streets there. (This will appear in the air map now being prepared for the expedition by the Royal Air Force.)

Insall's ability to see the street patterns from the air where nothing of the sort could be distinguished on the ground was a significant and solid contribution of the airplane to archaeological science. His reported conclusion therefrom did not contribute directly to the actual locating and verification of the site. This was done by our expedition quite independently, and when we requested the Royal Air Force to take an airplane photograph of the site there was no intimation or rumor that any one had noted anything of interest about the

site from the air. It seems that Insall took no photographs and was soon transferred to another post. His conjecture however marks, I believe, the first hint, due again to the airplane, that the site of Seleucia had been lost. The archaeological evidence for its location at Tel Umar is to some extent given in this report (see Chapters IV and V).

II. ARCHITECTURAL NOTES, SEASONS 1927-29

By N. MANASSEH

A PARTHIAN VILLA

EXCAVATIONS during the first and second seasons at T. T. ("trial trench") 4, first level (see Fig. 2), resulted in clearing and defining a commodious and well-planned house, so elaborate in character and diversified in construction as to make the term "villa" not inappropriate.

The plan of this building, as well as those of other levels in the same area, is made to the scale of 1 inch to 8 feet (or approximately 1 to 100). Portions shown in black are burnt brick constructions. Burnt brick pavements are represented by squares according to the dimensions of the bricks. Hatched parts are burnt brick bases or casings to mud brick walls. The remaining walls are sun-dried bricks laid in mud and reeds. Restorations are shown in broken lines.

Twenty-one rooms around three sides of the quadrangular court have already been cleared. They are enough to give a good idea of the general plan of the building, which stands detached from the rest of the ruins. It appears to have had at least three entrances.

The main portal leads to Room 18 by means of a passage between Rooms 17 and 19. The room to the right, probably a bath, had a paved drain the construction of which shows a very good knowledge of sanitary engineering (see Fig. 3). Under the pavement there was the usual nest of torpedo-shaped jars for filtration. These rested on another burnt brick pavement provided with an outlet made of burnt bricks. Below this outlet was an old circular well of a common type lined with brick. Undoubtedly it belonged to an earlier period, but was evidently used here in connection with the drain. Two feet from the well, there was found a round pit,

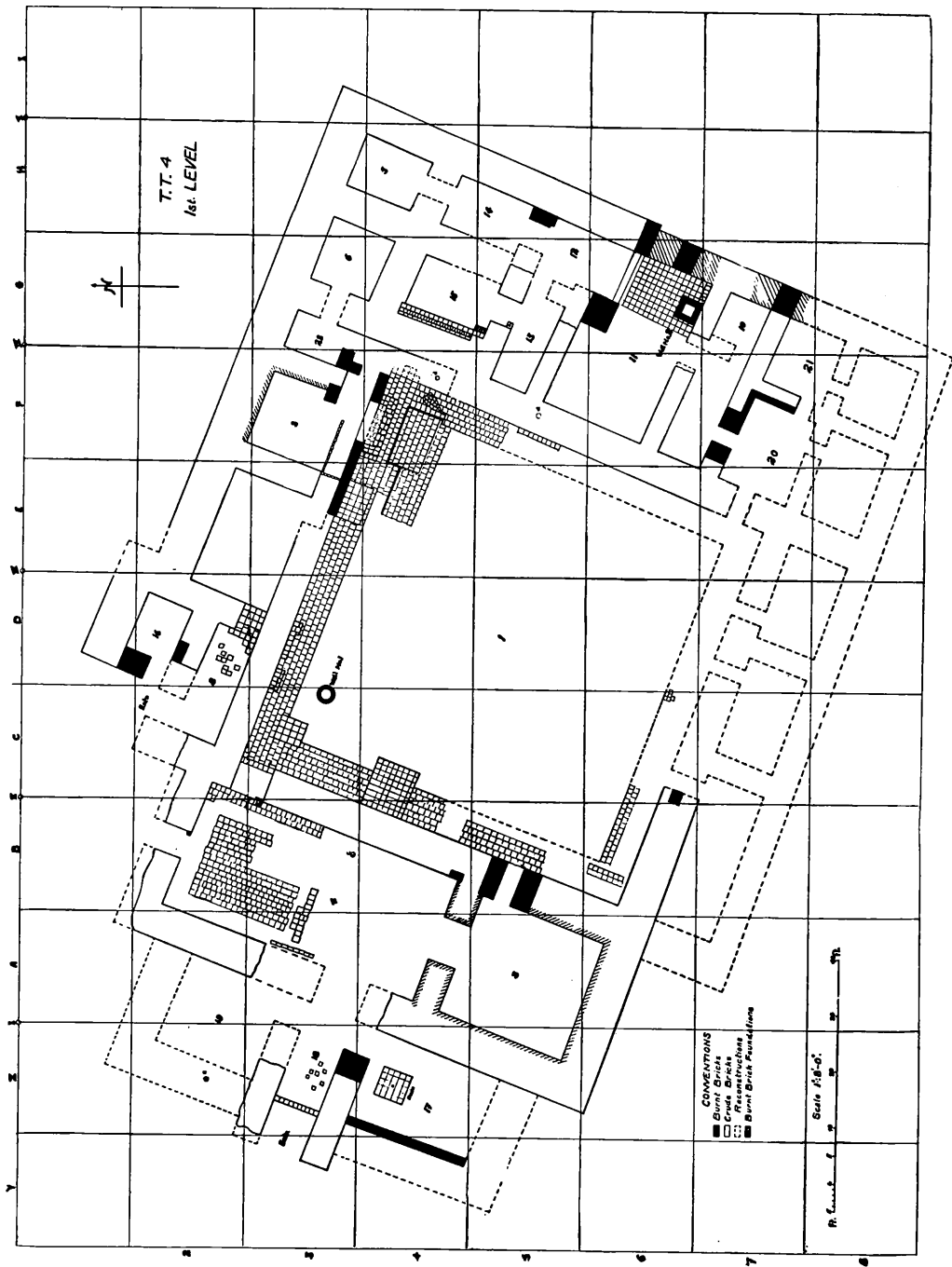


FIG. 2. Plan of a Parthian villa

3½ feet in diameter and 5½ feet deep, filled with potsherds.

It seems justifiable to assume that the whole construction, that is, the paved basin, the nest of jars, the old well, and the pit, composed a system of drainage for filtering and purifying the waste water from the bath before allowing it to percolate

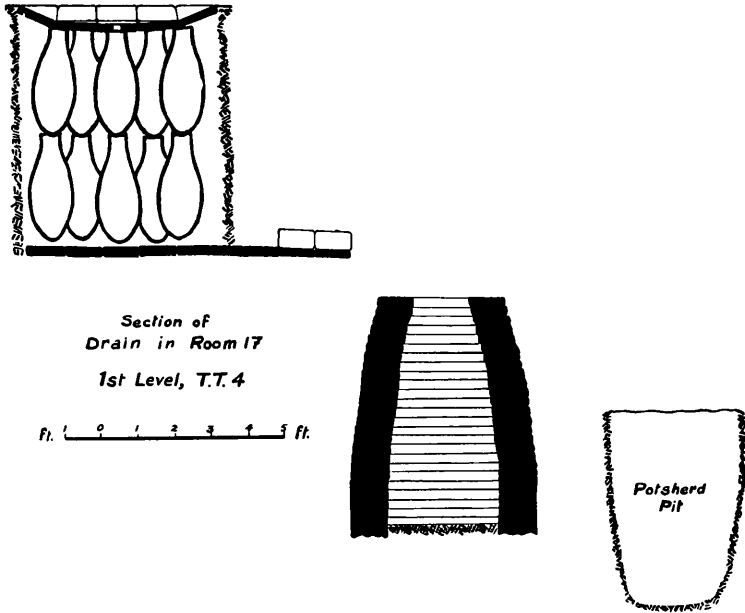


FIG. 3. Section of drain of a house

into the ground and find its way to the well in the principal court.

Room 18 must have served as a vestibule leading to a secondary open court (R. 4) partly paved with burnt bricks. In the northern wall of this court there was a door communicating directly with the outside, which was probably a later addition and did not belong to the original plan of the house. Opposite this there was another door opening into what may be considered the reception hall of the house (R. 3). Both this hall and the secondary court mentioned above had doors connecting them with the principal court (R. 1).

This court (R. 1) seems to have been the most interesting part of the building. It was 72 feet square and was paved around its sides with burnt bricks for a width varying from 5 to 6 feet and to a depth of 3 feet.

Only the outer edge of this pavement was laid carefully and contained whole bricks, which indicates that it was higher than the remaining unpaved part of the court.

A well lined with burnt bricks and showing three different kinds of construction was found near the north corner of the pavement (see Fig. 4).

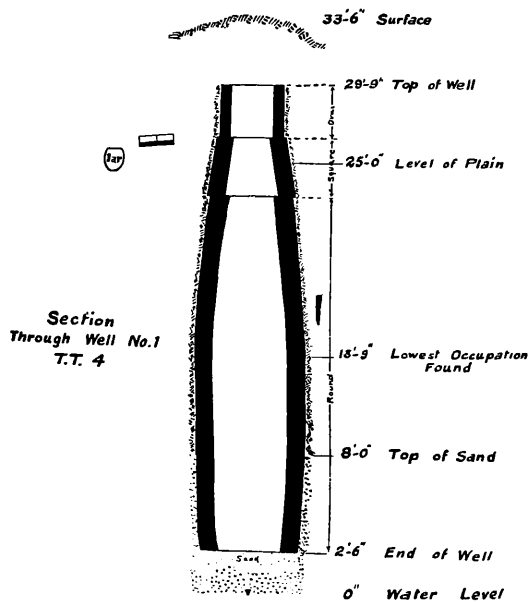


FIG. 4. Section of well in court

Another means of reaching the principal court was by the entrance on the north side through Rooms 8, 7, and 2, which led to the eastern corner of the court directly opposite the door communicating with Room 4. This suite of rooms may have served as an office or shop where the master of the house conducted his business.

Upon entering the court by this third access one would have faced an altar-like structure along the north wall 12

feet 6 inches long, 3 feet 3 inches wide, and 3 feet 4 inches high, made of sun-dried bricks and cased with burnt bricks. Directly in front of this structure and two feet to the south was a raised rectangular platform 11 by 6 feet and 7 inches high made of burnt bricks and bordered with bricks laid on edge. Slightly to the right was found a small oval block of burnt bricks 14 inches high. Between these two there was a short paved conduit. The space around these three raised structures was also paved with burnt bricks (see Fig. 5).

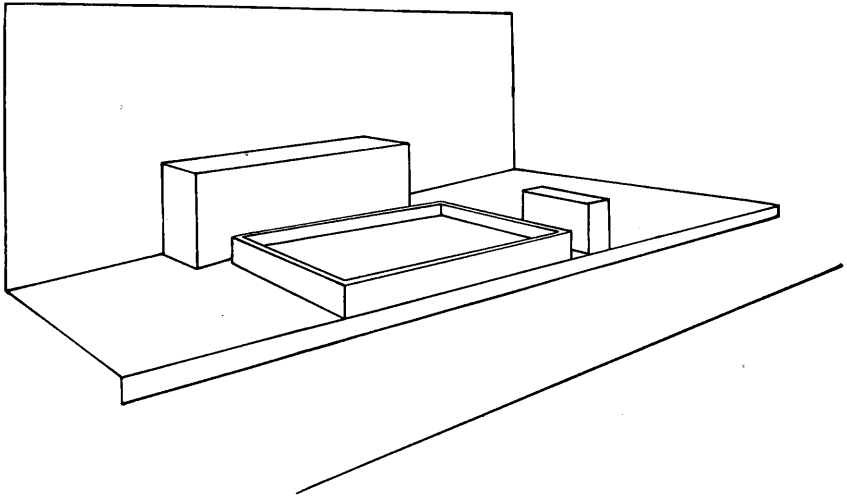


FIG. 5. Restoration of shrine in court

Undoubtedly there was here an outdoor shrine. It may very well be supposed that the victims were killed on the small block to the right and the sacrifices prepared on the large lower platform and offered on the altar before the images placed at some point higher up the wall. Fragments of a fairly large terra cotta bull were found at this corner.

The suite of rooms, ten in number, already cleared along the eastern side of the court, must have been the domestic quarter of the house. No direct connection between it and the principal court has yet been found, but with the completion of the excavations a door will very probably be dis-

covered. The isolation of this suite from the rest of the house is in accordance with ancient house planning and practice.

Another well was found in this part of the house (R. 11). It also was lined with burnt bricks, but showed only two types of construction. The upper part, extending for a depth of 5 feet 10 inches, was square; the lower part was round and continued to the water level.

It would seem that this house was used later with some alterations in the plan, but this could be traced only in the eastern part, where the ruins were found to be little higher than the remaining north slope of the hill. During this later occupation the main walls were used and only the inner ones were changed; a door was opened in the eastern wall.

As to the kind of materials used, the greater part of the walls was of sun-dried bricks laid in mud mortar and reinforced at every third course with a layer of reed matting. In the principal rooms burnt bricks were used freely for door jambs and as casings for the lowest courses of the walls. In the eastern wall huge brick piers were built at intervals to strengthen the mud wall.

A WINE AND MOLASSES FACTORY

In the second level it was necessary for us to be satisfied with what those who built the first level did not destroy in digging for the foundations of their house. Evidences of this destruction were found everywhere.

At present it is difficult to find an explanation for all the burnt brick and bitumen constructions (see Fig. 6), but we can be sure of one thing: here was a factory for extracting juice from fruits by two different processes, pressing and boiling, or, in other words, a wine and molasses factory. The only Mesopotamian fruit which could be used in this industry is the date. In fact, date wine and date molasses have been known since ancient times.

The mud-lined burnt brick conduit in the eastern side of the excavations must have been used to carry away the

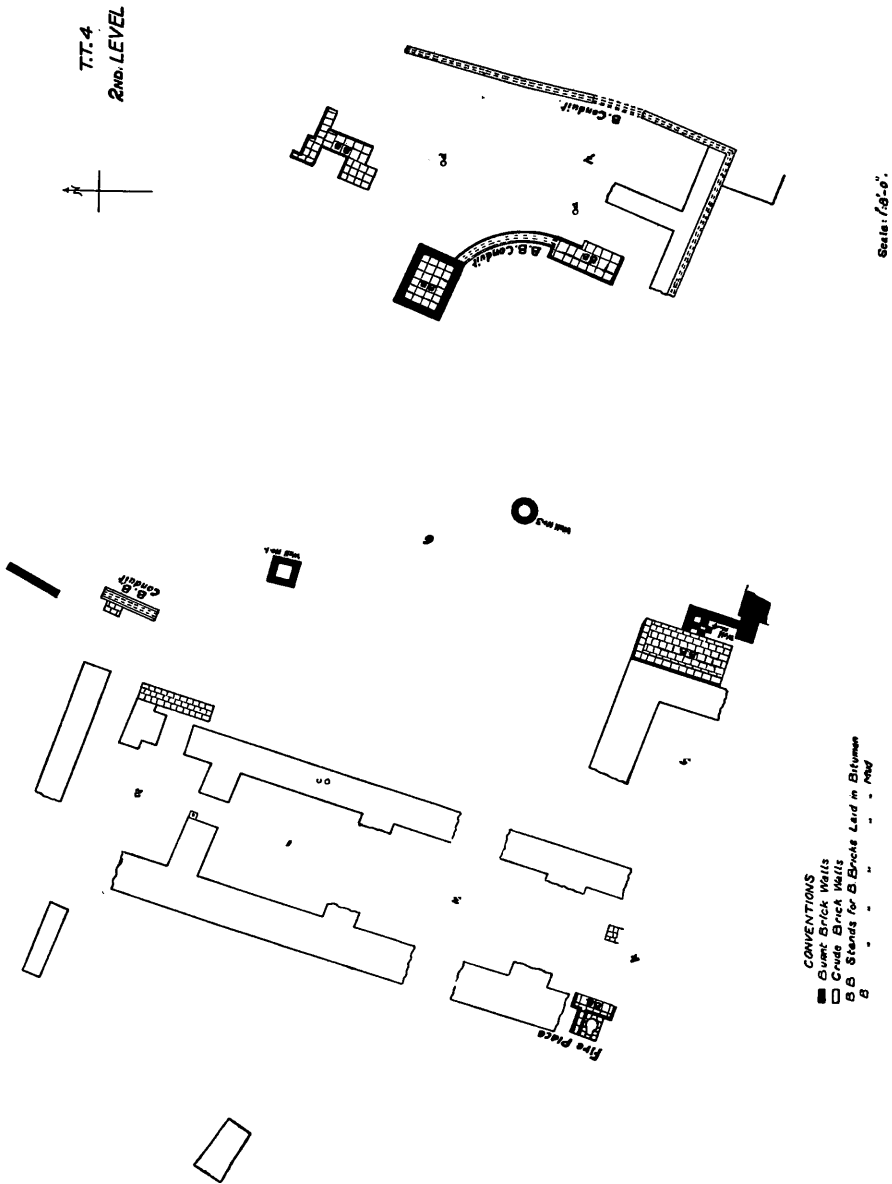


FIG. 6. Wine vat, reservoir, and fireplace

water in which the dates were washed before taking them to the vat (R. 7) to be pressed or threshed. This vat, which was partly destroyed by the first level walls, was built of burnt bricks and bordered with bricks on edge 8 inches high and must have had an area of about 35 square feet. It was connected with a reservoir 6 feet 8 inches long, 4 feet 8 inches wide, and 5 feet 6 inches deep, by a covered conduit whose opening was 4 inches by 3 inches. All these were made of burnt bricks laid in bitumen (B.B.) and were coated inside with a thick layer of bitumen which rendered them waterproof. The juice extracted in the vat would flow through the conduit to the reservoir, where it could be fermented and stored.

A burnt brick fireplace preserved intact and part of a bitumen-coated brick basin with a short conduit were found along the western wall. One may very well suppose that, after obtaining what juice could be extracted by threshing the dates, the workers boiled here the pulp for making molasses. It seems that a factory like this would not be complete if it did not combine the two processes.

In the light of recent discoveries on the mounds, particularly that of the Parthian palace described by Mr. Yeivin (called for the present the "southern insula"), this site can be dated with fair assurance by comparing its levels with those of the "southern insula."

Corresponding levels of this site and of the "southern insula" bear striking resemblance to each other. The first levels in both are characterized by massive foundations sunk deeply into the firm soil with footings projecting on both sides, and by thick crude brick walls built in a similar manner and usually cased with burnt bricks for a height of about one foot above the floor. Moreover, there is an evident likeness in the rectangular pattern and spaciousness of rooms and courts.

Burnt bricks seem to have been used extensively in both second levels and with the same degree of skilled workmanship. Here the walls are still massive and the rooms large.

The third level in each case shows an entirely different type of planning. The rooms are small and crowded together, and the walls are much narrower.

Considering these resemblances and the similarity of finds from both sites, it seems safe to assume that corresponding levels in each belong to the same period. And thus we can at least provisionally assign the first level to the second century A.D. and the second level to the first century A.D.

III. ARCHITECTURAL NOTES, SEASON 1929-30

By S. YEIVIN

STRATIFICATION AND DATING

THE main area excavated in 1929-30 comprises two "insulae." The architectural remains of the southern "insula" no doubt represent in the first level a single building complex, but within the complex several reconstructions are noticeable: first, a large part of the western wall, which was pushed out into street 36 (see Pl. I); second, several foundations of burnt bricks representing walls, which have nothing to do with the rooms in which they are situated, but are not deep enough to belong to the well-marked second level of architectural remains; third, several apparent alterations in plan.

On the basis of over fifty coins from this excavation, it would perhaps be permissible to suggest that the first level building, quite evidently a palace, was constructed some time in the second quarter of the second century after Christ. It is significant in this connection that a group of five coins (two Roman and three Parthian, dated from 69 to 118 A.D.) comes from a room (R. 121) belonging probably to the earlier part of the palace, before the final rebuilding. If, therefore, we should look for a more definite time for the first construction, we are tempted to suggest the years immediately following Trajan's invasion of Parthia in the reign of Osroes. The main rebuilding and enlargement were probably done under Volagases III, whose coins are very numerous on the site and who had a long and prosperous reign (from 147 or 148 to 190 or 191 A.D.). This, again, may have been done after the invasion of Avidius Cassius (in the reign of Marcus Aurelius), who sacked and burned the town in 164 A.D. The first level is, therefore, to be provisionally dated from 120 to 200 A.D.

PLATE I



Main excavation, 1929-30, seen from the air

(By courtesy of the British Royal Air Force)

GENERAL PLAN

The airplane photograph shows the major part of the town to have been laid out according to a definite rectangular plan of parallel cross streets meeting at right angles. The southern part of the northern insula (see Pl. I) seems to have contained several houses, but excavations here were incomplete, and it is impossible as yet to say anything of the architecture.

The southern insula, however, which was completely traced around (see Pl. I), even though not wholly excavated, seems, in the first level, to represent a single unit in spite of showing several alterations of plan (see above). A look at the plan of the first level reveals it as a large building, while even the most fleeting comparison of this plan with the ground plan of the arch of Ctesiphon¹ brings out most clearly the fact that here we have the Parthian prototype of the Sassanian Taḥti-Husru: the same large central courtyard with the two large *iwans*² opening south and north, the large L-shaped corridors at the side and behind the iwans, and the large square halls at the back, with small rooms opening off the corridors and the halls. This orientation of the large iwans is probably conditioned by climatic considerations; the southern iwan, open to the shady north, was probably used as a summer-house, while the northern iwan, open to the sunny south, served as a sort of winter residence. One has always to keep in mind the fact that the iwans in the Ctesiphon palace (Taḥti-Husru), on the other side of the Tigris, show the same orientation. In this part of Iraq a southern wind in the winter is quite cold and brings rain, but the iwans were not meant for rainy days; they were, no doubt, to be used on those winter days when the sun shone, and were designed to benefit as much as possible from the light and warmth of a winter sun. On rainy days, as well as on the hot windless days of midsummer, the inclosed halls at the backs of the iwans were doubtless used as living-rooms.

¹"Preliminary Report on the German Excavations at Ctesiphon," *Antiquity*, 3 (1929), 434-451.

²A principal room with one whole side open on a court.

The uses of the southern and northern iwans are very strikingly illustrated in the second level. Here, the southern iwan, though not so large as the one of the first level, is still a very impressive affair, large and roomy, so as to admit as much as possible of the cooling northern breeze, while the northern iwan is a rather small room, not half the size of the southern one, and most of it is occupied by a round, open fireplace built of burnt bricks. One may consider this hearth to be religious equipment, although there are no real reasons as yet for attributing a sacred character to the building as a whole, nor is much known about the official religion of the Parthians.

To return to the first level, it appears that the palace insula was built originally as an elongated rectangle including only the western courtyard paved with burnt bricks, from which opened the two opposing iwans. This courtyard led on the east to a large forecourt with rooms grouped around it, of which the complex in the northeast corner contained store-rooms and possibly servants' quarters.

At a later date, probably after the Roman sack of the town—it is significant in this connection that the northern strip of the insula, especially the northeast corner, bore unmistakable signs of a big conflagration close to the surface of the ground—the palace was rebuilt and enlarged. The middle portion of the western wall was pushed out into street 36 (see Fig. 7), a round basin was built of burnt bricks in the northern portion of the western courtyard, and east of this inner courtyard, in the forecourt, another inner court was added with two opposing iwans, smaller than those of the western courtyard. To make place for this newly added part, older rooms were destroyed, but burnt brick foundations of the former walls crop up in various places in this eastern part.

It is possible that in the reconstructed building the western yard was used for women's quarters. The main entrance seems to have been on the east; the western courtyard would

**PARTHIAN PALACE
SELEUCIA**



Scale: 1 inch = 10 ft.

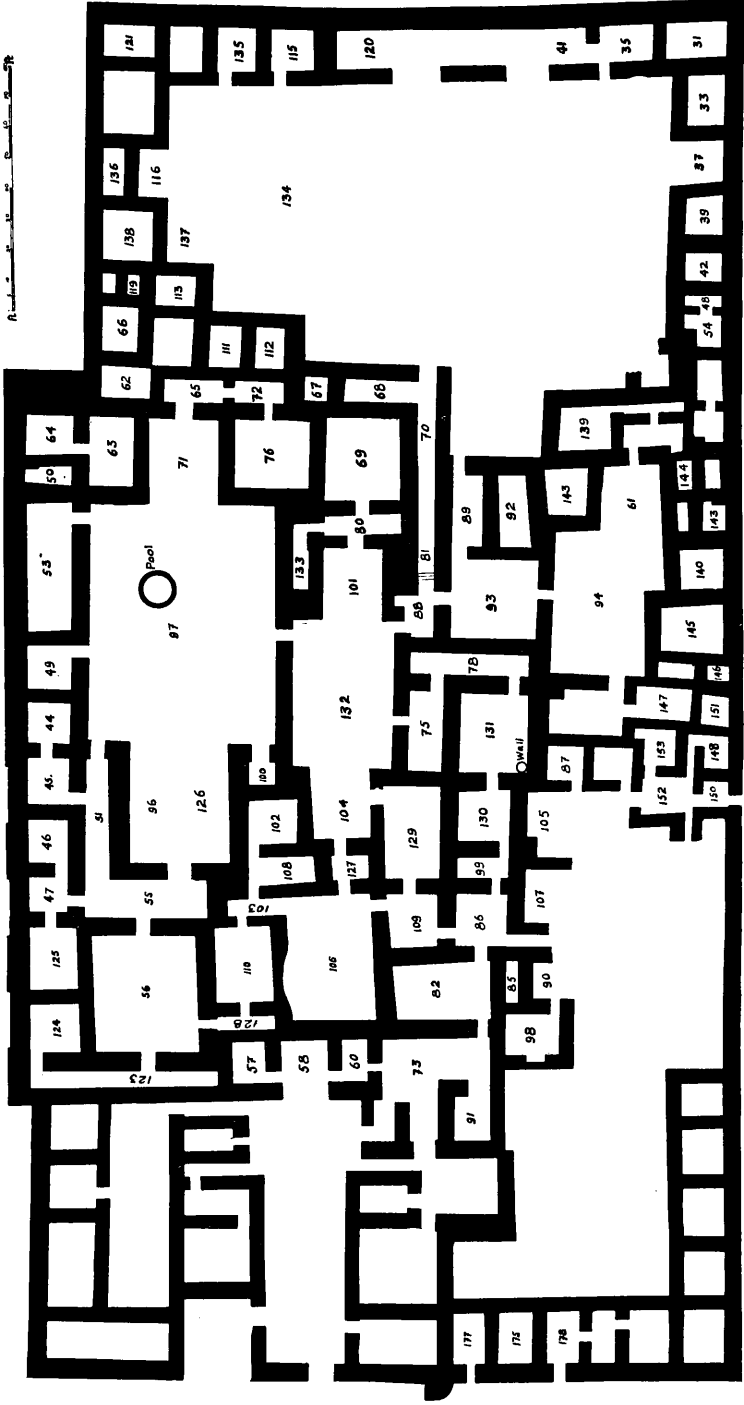


FIG. 7

thus be the innermost and the more suitable of the two for ladies' apartments. However, not much is known of the position of women in Parthian society; even if they were not secluded, there may have been special women's quarters, as in Egypt. The presence of the basin in the replanned courtyard also speaks in favor of this interpretation.

It should be mentioned that the Parthian palace at H̄atra¹ shows two large iwans placed side by side, with a staircase corridor between. If the two central courts of our palace be divided in two by a line running east and west, each half will exhibit approximately the same plan as the H̄atra palace. It is possible that Room 102 (between the two southern iwans) was the beginning of a staircase leading to the second floor. The presence of a second staircase (Rooms 70-81) does not speak against this hypothesis, as the H̄atra palace also shows two.

FOUNDATIONS

No doubt the first level palace was originally a quite high building. Apart from the evidence of the arch of Ctesiphon—the similarity could not have extended to the ground-plan only—the thickness of the main walls and the depth of their foundations speak of the heavy weight which these had to support, i.e., tall arches and probably, at least in some parts of the building, two, or perhaps three or more, stories.

In both first and second levels a peculiar feature was observed in connection with the foundations of walls; a layer of potsherds was placed in a trench and the foundations were built over the layer. This method is easily explained. In heavy soil like the Babylonian some way had to be found to keep the water away from the foundations of buildings, so as to prevent them from rotting, since the soil itself was not subject to easy percolation. A similar procedure was known in ancient Egypt, where quite thick layers of fine sand were usually placed below the foundations of houses.

¹*Wissenschaftlichen Veröffentlichungen der deutschen Orient-Gesellschaft*, Vols. 9 and 21.

The desire to secure solid foundations is probably responsible for a whole or a partial use of burnt bricks as building material for foundations of buildings, otherwise made of sun-dried adobe. In some cases the whole foundation is built of burnt bricks, either whole or fragmentary; in others, only the outer part of the first few courses of the wall was built of burnt bricks (as in the western wall of the palace, top and second levels); in still other cases, the first few courses of the two end strips of the wall were built of burnt bricks, the core being of sun-dried bricks (so far noticed only once and this in the southern insula in remains of a foundation in R. 129); in other instances (as R. 131) these casings seem to be dadoes running round the walls about floor level. In the northern insula there were several examples of both foundations and dadoes.

In most cases the foundations of walls were far larger than the walls themselves above floor level. In the top layer of the western wall this was managed by adopting a twofold procedure: ledges on the inner face of the wall and a batter on the outer face.

DECORATION

All inner surfaces of walls in the first level were covered with a layer of light brown mud plaster about one half of an inch thick and in some places (as in R. 108) containing a large admixture of coarsely chopped straw. In the northern insula and in the second level of the southern insula several walls bore remains of a white gypsum or lime plaster. In the northern insula this was quite thin, but in the southern insula (second level) it was about three fourths of an inch thick; in this case the white plaster was put over a lining of mud plaster about three eighths of an inch thick, and the slightly elevated mastabas running along the four sides of the second level courtyard were plastered in the same way. Nowhere have traces of painted decorations been found thus far, but architectural decorations moulded in plaster have been found in

abundance. Some of these were painted; traces of only two colors have been found, dark red and deep blue. These plaster mouldings include: first, pedestals and capitals of columns (see Pl. II, Figs. 1-2), also a capital with a Roman eagle in relief (see Pl. II, Fig. 3) and pillars, both probably half detached and serving only ornamental, not architectural, purposes; secondly, fragments of torus mouldings; thirdly, cornices, most frequently decorated with egg-and-leaf designs; fourthly, fragments of ceiling decorations, showing lozenge divisions with rosettes in the center, all done in high relief and painted alternately blue and red; fifthly, fragments of "cherubic" heads in high relief. These architectural ornaments in plaster are of the same type as those of the palace of H̄atra, so that this evidence only strengthens the arguments dealt with above, which date the top level in the late Parthian period. On the other hand, the close resemblance between the ground-plan of the palace of Seleucia and that of Taḥti-H̄usru at Ctesiphon, together with some common decorative motives, proves how much Sassanian art was indebted to its Parthian predecessors. At the same time, these decorative pieces bear unmistakable traces of a strong influence of Greek art, in a very barbarized form, although Parthian artists could rise to artistic achievements. An ivory plaque incised with a figure of a man with Dionysiac attributes has a remarkable force of expression about it. Of a more artistic nature are two heads found in Room 165. Both are fragments of rather large statuettes. One in marble (two fragments, apparently broken anciently and glued together with gypsum plaster) seems to represent Hera. It was originally at least partially painted, as it bore when discovered a star-like splash in carmine-colored stucco, now effaced, while the eye cavities were filled with plaster and bore traces of blue (now turned greenish) glaze in the corners (see Pl. III, Fig. 1). Though it is possible to argue concerning this piece of sculpture that it is the product of some western artist and was imported into Parthia, no such argument is possible in the case of the second

PLATE II



FIG. 1



FIG. 2



FIG. 3

Plaster capitals



FIG. 1. Head of statuette, in marble



FIG. 2. Head of statuette, in plaster

piece (two fragments, head and bust; see Pl. III, Fig. 2), which probably represents Venus. This, too, must have been at least partially painted, as the lips still bore a very vivid red paint which paled and vanished soon after discovery. In the same room there was also found a small rectangular base of a pillar (?) decorated in plaster with geometric designs in relief on three of its sides, the fourth surface being broken away; but the base probably was half detached and had a plain surface on this side. The designs, and especially the rosettes on the largest of the three surfaces, are of the patterns so common later on Muslim-Persian glazed tiles. All these finds belong to the first level.

These connections with Hellenistic-Parthian style on the one hand and Sassanian-Muslim-Persian motives on the other tend to show that, from the point of view of the history of art, the first level at Seleucia may prove to be of the utmost importance, furnishing the transition link between the two in this part of the world.

Several fragments of burnt bricks showing decorative designs in relief were found in the débris of the second and third (?) levels. Some long and narrow pieces had only spiral designs inclosed between two horizontally parallel border lines. One square brick showed a griffin in relief. These must have been inserted in the surfaces of walls to form long friezes of designs and probably were associated with the second level palace, possibly also with the third level, but do not seem to have been in use in the first level. These are, of course, closely related to the decorative glazed tiles in the Neo-Babylonian and Achaemenean buildings.

IV. "BULLAE" STAMPED WITH GREEK LEGENDS

By R. H. McDOWELL

DURING the season 1929-30 three fragments of clay and of bitumen, each bearing a stamped legend in Greek, were found in débris near the surface. Toward the close of the season, in a room of a structure of Level III,¹ there was found a quantity of bitumen objects, most of them fragmentary, bearing seal impressions and stamped legends. In 1927 three clay fragments of a similar kind had been obtained.

Only a few rooms of Level III have as yet been excavated, and it is not possible to state at present what is the nature of the structure in which these objects were found. The type of architecture and the evidence of coins, pottery, and other objects recovered all establish definitively that this level was Greek and Seleucid, in contrast to the two distinctly Parthian levels lying above. The Parthian buildings excavated at this point, on the first two levels, have proved to be very important structures.

A few of the objects were almost complete, while, from the shape of most of the fragments, it is possible to reconstruct approximately the original form of the others. When complete they were roughly spherical, with a hole extending through the center from surface to surface. The largest complete piece has a diameter of a little more than two and one-half centimeters; but the large fragments show that some had a diameter of more than five centimeters. The holes are from seven to eight millimeters in width and bear the marks left by cords. On some examples there is the trace of a single string, on others, the marks of from two to five strings in parallel rows. The surfaces of some of the objects were covered with seal impressions only; others bore a stamped

¹Pending further excavation, this level is tentatively designated III.

legend surrounded by seal impressions. At least one of the objects was completely girdled by a row of circular depressions which, apparently, were made by the end of a hollow reed.

All the objects found together bore unmistakable evidence of having been burned, although the room itself shows no signs of a conflagration. The fragments themselves give the impression that they have been intentionally broken. On some there is clear evidence of the employment of a sharp instrument to deface the seal impressions.

The expedition has, altogether, sixteen examples of legends and more than a hundred fragments bearing seal impressions. The latter offer a great variety. Some are profile heads which resemble closely those found on the royal Seleucid coinage. The others represent human and animal figures, some distinctly Greek in style, others, Oriental. The legends are transcribed and explained below. On Plate IV are reproduced Nos. 2, 5, 10, 14, 15, 16; on Plate V, Nos. 17 and 18, together with four other seal impressions.

DESCRIPTIONS OF STAMPED BULLAE

No. 1		mm.
	Length of object	17
άλικῆς	Width of object	13
	Height of letters	2
ς κ	Height of numerals	3
Σελευκεία[ς]	Material, clay	

Bottom and right edge of face missing; letters regular, numerals almost indistinguishable; at right extremity of second line, a symbol. Found alone on the surface

No. 2 (Plate IV)		mm.
	Length of object	24
άλικῆς	Width of object	25
Σελευκείας	Height of letters	1
γπ	Height of numerals	2
ἐπιτε[λῶν]	Material, bitumen over clay	

Lower right side of face missing; letters irregular, cramped; elaborate symbol follows numerals. From Level III

No. 3		mm.
ἀλικῆ[ς]	Length of object	23
Σελευκεία[ς]	Width of object	24
ηϞ	Height of letters	2.5
[ἐπι]τελῶν	Height of numerals	3.5
	Material, clay	

Face complete, but right extremity of lines and lower part of bottom line incomplete, owing to careless application of stamp; letters regular; an abrasion of the surface has partially destroyed first numeral; numerals followed by symbol. Found alone near surface

No. 4		mm.
[ἀλι]κῆς	Length of object	12
[Σελ]ευκείας	Width of object	15
ρ	Height of letters	2
[ἐπιτελ]ῶν	Height of numerals	3
	Material, bitumen	

Left half of face missing; letters regular; symbol as usual. From Level III

No. 5 (Plate IV)		mm.
ἀλικῆς	Length of object	23
δρ	Width of object	25
Σελευκεί[ας]	Height of letters	1
ἐπιτελῶ[ν]	Height of numerals	2
	Material, bitumen	

Face complete, with loss of final letters of two lines in the application of the stamp; letters regular; different type of symbol, placed as usual. From Level III

No. 6		mm.
Σελευκείας	Length of object	21
ειρ	Width of object	16
ἐπιτελῶν	Height of letters	1.5
	Height of numerals	2
	Material, bitumen	

Upper half of face missing; letters irregular, cramped; usual symbol. From Level III

No. 7		mm.
ἀλικῆς	Length of object	17
Σελευκεία[ς]	Width of object	15
ςιρ	Height of letters	2
ἐπιτελῶ[ν]	Height of numerals	2
	Material, clay	

Face complete; letters regular; symbol as usual. Found alone on the surface

- No. 8
- | | | |
|--------------|--------------------|---------|
| ἀλικῆς | Length of object | mm. .22 |
| Σελευκεία[ς] | Width of object | .21 |
| θ ι ρ | Height of letters | 2 |
| ἐπιτελῶ[ν] | Height of numerals | 3 |
| | Material, clay | |
- Face complete, with loss of final letters of two lines in the application of the stamp; letters regular; no symbol appears, but this may well have been lost in the application of the stamp. Found alone on the surface.
- No. 9
- | | | |
|--------------|--------------------|---------|
| ἀλικῆς | Length of object | mm. .21 |
| Σελευκεί[ας] | Width of object | .18 |
| []κρ | Height of letters | 2.5 |
| ἐπιτελῶ[ν] | Height of numerals | 2.5 |
| | Material, bitumen | |
- Face complete, with loss of final letters; lettering good; first character of third line damaged by an abrasion. Found alone on the surface
- No. 10 (Plate IV)
- | | | |
|--------------|--------------------|---------|
| ἀλικῆς | Length of object | mm. .20 |
| Σελευκεία[ς] | Width of object | .22 |
| ακρ | Height of letters | 1.75 |
| ἐπιτελῶν | Height of numerals | 2.25 |
| | Material, clay | |
- Face complete; letters regular; third numeral worn; symbol as usual. From Level III
- No. 11
- | | | |
|--------------|--------------------|---------|
| ἀλι[κῆς] | Length of object | mm. .10 |
| Σελ[ευκείας] | Width of object | .14 |
| ε ι | Height of letters | 2 |
| ἐπιτε[λῶν] | Height of numerals | 2 |
| | Material, bitumen | |
- Greater part of face missing; only the first letters of each line remain; letters regular. From Level III
- No. 12
- | | | |
|--------------|-------------------|---------|
| [ἀλικ]ῆς | Length of object | mm. .22 |
| [Σελε]υκείας | Width of object | .20 |
| [ἐπιτελ]ῶν | Height of letters | 1.5 |
| | Material, bitumen | |
- Bottom of face missing; all the rest of the face, except right extremity, has been gouged out; letters regular. From Level III

No. 13		mm.
ἀνδραπ[οδικῆς]	Length of object	.18
Σελευκε[ίας]	Width of object	.18
βκρ	Height of letters	1.5
εἰσαγω[Height of numerals	2
	Material, bitumen	

Face complete, but does not contain the final letters of the stamp; letters regular and well executed; double symbol occurs at usual place. From Level III

No. 14 (Plate IV)		mm.
[ἀν]δραποδικῆς	Length of object	.24
	Width of object	.20
	Height of letters	2
	Material, bitumen	

Only part of first line of legend preserved; letters irregular. This fragment bears three seal impressions which are almost complete, two of them made by the same seal. These represent a female figure holding a bow in one outstretched arm. The other is of two heads, right, jugate (Plate V, No. 20). Level III

No. 15 (Plate IV)		mm.
[ἀνδ]ραποδικῆς	Length of object	.25
	Width of object	.24
	Height of letters	1
	Material, bitumen	

Face complete; beginning of upper line and all the lower line abraded; in the center are three symbols; letters regular. From Level III

No. 16 (Plate IV)		mm.
λιμένο[ς?]	Length of object	.18
μρ	Width of object	.15
]α[Height of letters	2
	Height of numerals	3
	Material, bitumen	

Face complete, but final letters of first line missing; letters regular; bottom line cannot be read owing, apparently, to the action of heat on the material. The word composing the bottom line was made up of four or five letters. No trace of a symbol. From Level III



2



5



10



14



15



16

Greek bullae

(The numbers of the figures on this plate are those given in the list of stamped bullae.)



17



18



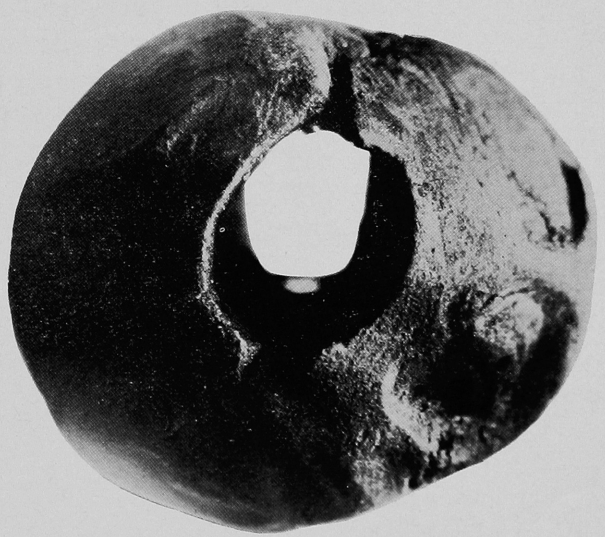
19



20



21



22

Greek bullae

(The bullae in this plate are those given in the list of stamped bullae.)

No. 17 (Plate V)

]υκλιοφυλακικος

Length of object	mm.	.33
Width of object		.24
Height of letters		1.5
Material, bitumen		

Face complete; one line of inscription above tripod-lebes; first letter destroyed by finger marks; letters regular. From Level III

No. 18 (Plate V)

]λακων

or

]αλκων

Length of object	mm.	.35
Width of object		.40
Height of letters		1.5
Material, bitumen		

Face complete; impression bears a profile head, right; to the left, reading up, is the inscription; head badly worn, but apparently similar to that reproduced on Plate V, No. 19. The fragment bears the impression of three other seals. One is obscure, but the other two are shown on Plate V, No. 21. From Level III

Professor A. T. Clay, in *Babylonian Records in the Library of J. Pierpont Morgan*, Part IV (Yale University Press, 1923, 52-54) has described objects of a similar type found at Warka, the site of Uruk, or Erech. In this city the Deutsche Orientgesellschaft uncovered considerable remains from the Seleucid period, among which were a great number of these objects. Professor Clay himself examined several thousand, which he speaks of as "bullae." He describes them as "lumps of clay which had been pressed upon a light cord, encircling some reed-like object," and says that "most of these bullae are literally covered with seal impressions. . . . One . . . contains no less than forty impressions, every one of which is different." He found no examples of the types of our Nos. 1-16. Four of these bullae had seal impressions bearing Greek legends, which have been published as Nos. 54-57 in the above mentioned volume (pp. 53-54). Of these he says: "No. 54. The center of this seal bears an emblem or design. The inscription reads ΑΛΙΚΗ ΟΡΧΩΝ, 'The salt-works of Erech.' This interpretation and reading seems reasonable because of

the fact that business transactions in salt frequently occur in the contracts and letters from Erech.

"No. 55. This seal contains a standing figure leaning upon a stand and touching what is probably an altar with a wand or spit. The inscription reads ΧΡΕΟΦΥΛΑΚ[ΟΣ] ΟΡΧΩΝ 'The public accountant of Erech.' [Speleers has published a similar inscription which he reads ΧΡΕΟΦΥΛΑΚ-ΚΟΣ ΟΡΧΩΝ, 'du comptable des Orchaéniens,' *Catalogue des intailles et empreintes orientales des Musées Royaux du Cinquantenaire*, Brussels, 1917, p. 234.]¹

"No. 56. The impression of this seal is very indistinct. It has also a standing figure, with an inscription of a similar character; but the office is different. It reads [?]ΧΟ[?]ΦΥΛΑΚ[ΟΣ] ΟΡΧΩΝ.

"No. 57. This seal contains a well executed head, encircled with a garland. It is inscribed on the left side, ΕΝ ΟΡΧΩΙΣ, 'in Erech.' The right side of the impression is incomplete; it doubtless contained the name of the office. The head is probably of one of the Seleucid kings."

A similar stamped bulla is in the Ashmolean Museum. It is described by G. R. Driver (*Journal of Hellenic Studies*, XLIII, 1923, 55) as an "egg-shaped lump of bitumen with a slit through the centre, in which can be seen carbonised remains of the tag; stamped on it are the impressions of two different seals." One impression, in the opinion of Professor Gardner, is a representation of the head of Apollo. To quote again: "More important than the figures are the legends, for they provide new words for the Greek lexicon. The bulla reads Χρεοφυλακικός ἐν Ὀρχοῖς." Without entering into Mr. Driver's discussion of the words, we note only that he considers the first as a new adjectival form from χρεοφύλαξ, which he translates as "registrar of public debts."

Dr. Julius Jordan, the director of the German excavations at Warka, in a report, *Uruk-Warka. Deutsche Orientgesellschaft wissenschaftliche Veröffentlichungen* (Leipzig, 1918)

¹The bracketed sentence appears as a footnote in Clay's volume.

describes a legend found on one of the bullae, No. 26 of his series. He says (p. 65) that it was a three-line Greek legend, not very clear in meaning, in the first line of which can be recognized ΛΙΚΗΣ, in the second Φ, and in the third OPX, the beginning of OPXΩN. Dr. Jordan does not attempt to translate this fragment, but in the light of the evidence from Seleucia, it is clear that the legend read ἀλικῆς, with the date following, then the city name.

Dr. Jordan has also an impression bearing the legend χρεοφυλακικός, which he translates "Sachwalter."

K. Friis Johansen, "Tonbullen der Seleukidenzeit aus Warka," *Acta Archaeologica*, Vol. I, Fasc. I (Copenhagen, 1930) describes a series of bullae with legends closely resembling those from Seleucia. The new impressions from Warka have the city name, the date, and either ἐπώνιου, or ἀνδραπο[], both kinds of legends being found on the same bullae. He translates ἐπώνιον as "öffentliche Abgabe." The second form, incomplete on his impressions, he restores as ἀνδραποδικοῦ, as having reference to "Sklavenhandel." On page 51 he says: "Weiter lernen wir aus den Stempeln dass in Orchoi eine öffentliche Abgabe bei Sklavenhandel zu bezahlen war." Johansen gives additional references to discussions of bullae; from Warka, Delaporte, *Catalogue des cylindres, cachets, et pierres gravées, de style orientales*, Musée du Louvre, II, Paris, 1923; from elsewhere, Leon Legrain, *Culture of the Babylonians*, University of Pennsylvania, The University Museum, Publications of the Babylonian Section, Vol. XIV, 1915.

In our series it will be noticed that Nos. 1-13 are of one general type, with four lines of writing, the second and third of which give the date and the city name, with no apparent regard for the order in which these are written. No 13 is concerned with ἀνδραποδικῆς and εισαγω[]; the other twelve, with ἀλικῆς and ἐπιτελῶν. A symbol or symbols appear as a part of the date line on most of these numbers, and, perhaps, were a part of all of them. No attempt will be made in this paper

to discuss these symbols. The first line of No. 15 is identical with that of No. 13, but the center of the face is occupied by symbols, with no evidence of there having been a date. No. 16 resembles the greater number in having a date, but the first word is new, and, to judge from the apparent shortness of the inscription on the third line, there was no city name.

In transposing the dates in these legends the Seleucid era has been taken as beginning in 311 B.C. in Babylonia (M. Rostovtzeff, in *The Cambridge Ancient History*, VII, 75). The characters "A.S." are employed to denote this era. It will be noticed that in all the examples the numerals of the dates are found in this order: units, tens, hundreds, from left to right, as is the case on the Seleucid coinage. This order is also found in inscriptions (Salomon Reinach, *Traité d'épigraphie grecque*, Paris, 1885, p. 222).

There can be no question as to the proper reading of the date in Nos. 3, 5, 6, 10, and 13. No. 3 is 98 A.S., 214 B.C.; No. 5, 104 A.S., 208 B.C.; No. 6, 115 A.S., 197 B.C.; No. 10, 121 A.S., 191 B.C.; No. 13, 122 A.S.; 190 B.C. It will be noted that all these dates fall within and toward the middle of the reign of Antiochus III, and cover a span of twenty-five years. No. 3 was found by itself; the others were in the room of Level III.

No. 1. This impression is so badly worn that the reading of the date is difficult. It is clearly composed of but two numerals, the second of which is κ; the first is either γ or ς, more probably the latter. This reading gives 26 A.S., 286 B.C., a date falling toward the close of the reign of Seleucus I. There is a span of fifty-seven years between the date of No. 1 and that of No. 2, the next in chronological order.

No. 2. From the photograph one might read the date here as ιπ, but an inspection of the original makes it clear that we have γπ. The question may arise whether there may not have been a ρ to the right of the symbol. If, however, one extends the curve of the edge of the impression to complete the face,

and notes that the symbol group is not complete in our fragment, but was carried on toward the right edge, it will become evident that there could have been no proper space for another numeral. Taking, then, the reading $\gamma\pi$, we have 83 A. S., 229 B.C., in the reign of Seleucus II. This is the earliest date found among the group from the Third Level room. There is a fifteen-year span between this date and that of No. 3.

No. 4. We have here the numeral ρ standing alone except for the symbol at the right edge. One must consider whether another numeral stood at the left, on the part which has been broken off. It may be noted in connection with all these dates, as a general, not an absolute, rule, that, when the date is composed of two numerals, these are written closely together and well centered on the face of the impression. When three characters make up the date, they tend to be spaced out, the first toward the left edge of the face, the third toward the right edge. On the basis of this generalization we may conclude that the ρ was preceded by two other numerals. Since they are lacking, the most that can be said in placing the date of this number is that it did not fall before the accession of Antiochus III.

No. 7. It might be possible to read here $\gamma\rho$, rather than $\varsigma\rho$, but the latter is more likely. This gives 116 A.S., 196 B.C., in the reign of Antiochus III.

No. 8. On this date line the numeral ρ is clear, well to the right of the center. In the corresponding position on the left we have, as the first numeral, either θ or \omicron . If we read the latter, we have the order tens, units, hundreds, which is possible (Reinach, *loc. cit.*). In the center there are a number of indistinct lines. It is difficult to decide which of these are accidental, but I think that the possible numerals here may be limited to ι or π . Both these make it necessary to read the first numeral θ , in place of \omicron . If, for the center position, π is taken, this gives an awkward spacing of the nu-

merals, thus, $\theta\pi\rho$; but the reading $\theta\rho$ gives a normal spacing. I choose the latter as the most logical under the circumstances. This gives the date 119 A.S., 193 B.C., in the reign of Antiochus III.

No. 9. We have here the numerals $\kappa\rho$, written closely together and well centered. To the left of these there is a character which has been partially destroyed by a nick out of the surface. This character would seem to be a τ , but this would be out of place here. One may assume a badly made γ , or ς , but, as the rest of the lettering on this impression is rather well executed, there is no ground for the assumption. It has been suggested that the character should be read σ and should be taken as the final letter of the city name form, missing from the preceding line. There is no other clear example in these legends that would strengthen this theory; in *No. 14* we have, on the contrary, a handling of a similar situation in a manner exactly opposite. Nevertheless, in the absence of some better solution, and in accordance with the generalization given above, under *No. 4*, with reference to the position of the numerals, it seems best to assign the first character of the date line to the city name, and to read $\kappa\rho$, which gives 120 A.S., 192 B.C. This, likewise, falls within the reign of Antiochus III.

No. 11. On this fragment we have the numeral ε , well to the left. In the center, at the edge of the break, there is a perpendicular stroke. The date on this impression may have been composed of two or of three characters. On the basis of a two-numeral date, the perpendicular stroke may be taken as the beginning of a π , or a ρ . The date would then be $\varepsilon\pi$, or $\varepsilon\rho$, both of them close to other known dates in this series. On the basis of a three-numeral date, the middle stroke may be taken as ι , or as the beginning of a number of characters from κ to π . The letters $\varepsilon\rho$ would give a date corresponding to the majority. The fact that this number was found with the large group from Level III gives one little basis for any assumption, for the reason that *No. 16*, from the same lot, is in-

disputably dated much later than any of the others. Because of the space separating the first two numerals I do not think that it is wise to assume a two-numeral date. It will have to be left open, with a range of possible dates from ειβ, 115 A.S., 197 B.C., to a date which may be determined by a study of coins from the second level of the excavations.

No. 12. The date is entirely missing from this fragment.

No. 14. Here, also, the date is lost, but the seal impression it bears of two portrait heads may give a clue.

No. 15. This impression is of a different character from the others and bears no date. It is possible that a study of the symbols appearing on its face, in connection with a study of the symbols of the whole group, would aid in fixing a date.

No. 16. The numerals μρ occupy the center of the face and are placed close together. To their left is a character the form of which it is difficult to judge. It resembles a reversed z. Many errors and examples of careless workmanship are remarked in the coins of the East (Wroth, *Catalogue of the Coins of Parthia*, British Museum, 1903, Introduction, §6). It is not unreasonable, therefore, to assume an error in the making of this stamp. It is also possible to consider the character as a badly made σ. This would then be taken as the final letter of the word on the first line. These readings give ζμρ, or μρ, 147 A.S., 165 B.C., or 140 A.S., 172 B.C. Both these dates fall within the reign of Antiochus IV.

To sum up, we have one impression dated from the reign of Seleucus I; one from that of Seleucus II; eight of Antiochus III; one of Antiochus IV; while of two, Nos. 4 and 11, it may be said only that they do not date from before the reign of Antiochus III.

Of the impressions having to do with ἀλικῆς, one lacks a date; the dates of two, Nos. 4 and 11, cannot be closely placed; and the nine others fall, one in the reign of Seleucus I, one in that of Seleucus II, seven in that of Antiochus III, with

a span of ninety-five years from the earliest to the latest. Of the three impressions having to do with ἀνδραποδικῆς, but one bears a date, 122 A.S., in the reign of Antiochus III. The one legend reading λιμενο[ς?] dates from 140 A.S., in the reign of Antiochus IV.

Among the legends found in the room of Level III, eight bear dates, two of which cannot be accurately read. There is a span of fifty-seven years between the date of the earliest, in the reign of Seleucus II, and that of the latest, in the reign of Antiochus IV. In any consideration of these impressions from the room of Level III, one must bear in mind that the fragments which have been preserved are only a very small proportion of the total number which were at one time together in this room. A large quantity of particles and fragments in such a condition that they were of no value for the purpose of study attested this.

The dates of the legend-bearing bullae from Warka range from 221 B.C. to 171 B.C. (Johansen, *op. cit.*, p. 50).

The word ἀλικῆς, which, as has been noted, occurs on twelve of our impressions, is the genitive form of ἀλική, meaning "salt tax." It is derived from ἄλς, "salt" (see the new edition of Liddell and Scott, *Greek Lexicon*). The word, with the meaning "salt tax," is found in a number of Egyptian papyri. Wilcken, in his *Griechische Ostraka*, p. 141 ff., discusses it in some detail. His conclusion is that, as the texts have so little to say with reference to the administration of the salt tax in Egypt, beyond showing that it was a monopoly, it is very difficult to arrive at a real understanding of this tax and of the manner of its administration. Tax receipts simply state that on a given date someone paid to someone else a certain sum for ἡ ἀλική, through another man. Beyond this statement of Wilcken I have found nothing that will throw further light on the salt tax in Egypt.

On the administration of the salt tax in the Seleucid Empire, I find little of value in published works. Professor Ros-

tovtzeff states (*The Cambridge Ancient History*, VII, 188) that cuneiform tablets of the Seleucid period, found at Warka, mention a salt monopoly. I have not found a published translation of such documents. Johansen, in his Bibliography, in reference to ἀλική, gives Delaporte, *op. cit.*, Taf. 123, Nr. 5c; and Clay, *Babylonian Records*, Part IV, Taf. 5c, Nr. 54, vgl. S. 53.

The genitive case of ἀλική, as found on our legends, is natural. One may understand ὑπέρ, in the sense of "for." In a somewhat analogous situation, Wilcken, *op. cit.*, p. 162, says "ἀρχαίων ἱππέων *wird also für* ὑπὲρ ἀρχαίων ἱππέων *stehen.*"

The legend ἀνδραποδικῆς occurs on three of our impressions, although it is not complete on any one of them. So far as I have been able to ascertain, this term is found nowhere else. Its form, however, is a normal derivative from ἀνδράποδον, "slave." One may assume either that it is an adjective, with its noun understood, or that, as in the case of ἀλική, it is an adjective used as a noun. Basing one's opinion on the analogy of the construction of ἀλικῆς, one is tempted to assume the meaning "slave tax." For the moment it may be safer to rely simply on the rule of grammar (Goodwin, §851) that "denominatives formed by ἰκο- denote relation"—thus obtaining "relating to slaves." The genitive form has here, without doubt, the same value that it has in ἀλικῆς.

The ordinary word used to denote "slave tax," or, rather, "tax on the sale of slaves," is ἀνδραποδωνία (new edition of Liddell and Scott; Pauly-Wissowa, *Real-Encyclopädie*, I; Dittenberger, *S.I.G.*, Leipzig, 1915, 4.8). Professor Rostovtzeff, in his article quoted above, speaks also of a tablet which contains a reference to a slave tax in Seleucid Babylonia. This is found in Otto Schröder, *Kontrakte der Seleukidenzeit aus Warka, Vorderasiatische Schriftdenkmäler der königliche Museen zu Berlin*, Heft XV, Leipzig, 1916; and in Clay's *Babylonian Records in the Library of J. Pierpont Morgan*, Part II ("Legal Documents from Erech"), New York, 1913.

I have not been able to secure translations of the cuneiform texts.

The word ἐπιτελών occurs as the last line in all the legends having to do with the salt tax. Although I have not been able to locate any reference to a use of this form in regard to taxes, it appears probable that it is the genitive plural of ἐπιτελής, "subject to taxation" (*Milet, Ergebnisse der Ausgrabungen und Untersuchungen seit dem Jahre 1899*, herausgegeben von Theodor Wiegand, Königliche Museen zu Berlin, 3.149. 19). On this assumption the bullae would have to do with goods subject to taxation, or with documents dealing with such goods.¹

The legend εἰσαγω[] unfortunately occurs on but one of our impressions, in connection with ἀνδραποδικῆς. The number of letters missing from this word cannot be accurately determined, but apparently there is room for four. It is likely that we have here some form of one of the derivatives εἰσαγωγῆ (Liddell and Scott, *op. cit.*, "importation of goods"), εἰσαγωγικός (*ibid.*, "of or for importation") or εἰσαγωγιμός (*ibid.*, "that can or may be imported"). Of the two adjectival forms εἰσαγωγικός would seem to be the more common in Greek of this period. Since we have found as yet only one bulla having the formula ἀνδραποδικῆς—εἰσαγω[], it seems best to defer further interpretation of these forms.

An interesting problem is raised by a comparison of the two sets of formulae from Warka and from Seleucia. Do both refer to the payment of a slave tax? If they do, why were differing forms used in the same region during the same general period?

In No. 16, λιμένο[ς?] clearly refers to the port. From the analogies of the other impressions, it would seem reasonable

¹Excavations carried on during the season 1930-31 have brought to light in another room of the same building a series of bullae, all with ἀλικῆς, but with ἀτελών in place of ἐπιτελών. Liddell and Scott, *op. cit.*, give for ἀτελής, referring to persons, "free from tax" (Herod. 2.168, 3.91; Lysias 32.24); referring to things, "untaxed" (Demos. 34.36, 42.18). These new bullae appear to make this rendering of ἐπιτελών obligatory.

to assume that here also we have the genitive case. As stated above, there is the possibility that the final ς of this form stands at the beginning of the second line. The form λιμένος occurs in a number of the papyri, in connection with a tax for the "harbor of Memphis" (*Greek Papyri*, Series II, Grenfell Hunt, L (k); Wilcken, *Ostraka*, p. 359). We may think of it at Seleucia as a tax for the support of the port, or a tax paid by those using the port, or both. The absence of the city name from this number is noteworthy. Though the third line of the legend is not legible, it is clearly not the city name. One is tempted to wonder whether this may not indicate a port authority independent of the city.

In No. 17, a seal impression, we have the incomplete legend]υκλιοφυλακικός; in No. 18, λακων or αλκων. In No. 17 there is the obvious analogy with χρεοφυλακικός and the other forms of the same term. The reading ἐνκ]υκλιοφυλακικός seems to be required. (Cf. ἐγκύκλιον in Liddel and Scott, new edition.)

Any attempt to interpret the meanings of the legends on these stamps is somewhat dependent on an understanding of the uses to which the bullae were put. Professor Clay, in his work already referred to, says: "After they had served their purpose as bullae, they were baked, and preserved as a record. . . . These bullae appear to have been used like those published by Dr. Keiser in Part III of this Series." Dr. Clarence E. Keiser, in Part III, "Cuneiform Bullae of the Third Millennium, B.C." (*Babylonian Records in the Library of J. Pierpont Morgan*), makes a detailed study of this type of object. He groups them into four classes: bullae, or labels; tags in the shape of tablets; archive labels; animal tags. Of the first two groups he says: "With few exceptions, the scribe impressed his seal on those labels and tags which were used in connection with receipts and expenditures. . . . In a few instances, however, the seal is that of another person, i.e., the one mentioned as having received the package." Dr. Keiser believed that these bullae were attached to all goods coming into the temple in the form of tribute. Such goods,

paid into the temples of early Babylonian times, correspond to the taxes paid into the government warehouses of a later date. Finally, "after serving this, its first purpose, the label . . . was baked and preserved as a permanent record." It must be borne in mind that Professor Clay and Dr. Keiser were discussing bullae that had been stamped with simple seal impressions. Their conclusions may, however, apply equally well to our bullae with their stamped legends. On this assumption we should consider the salt tax bullae to have been employed on sacks of salt that had paid the tax, or that were subject to the tax; and the bullae concerned with slaves to have been worn around the neck to indicate that these slaves were registered, or had paid the tax. A bulla that bore the harbor stamp would be evidence that a certain ship had paid the harbor tax.

On the other hand, these bullae may have been attached to documents. This view appears to be rather generally held today. Johansen expresses it well in his article already referred to, pp. 50-51, "Offenbar hatten also die Urkunden, zu denen die Bullen gehört haben, Bezug auf den Sklavenhandel; es werden griechische Kaufkontrakte gewesen sein, den gleichzeitigen Keilschriftverträgen über Sklavenverkauf, deren mehrere in Warka gefunden sind, genau entsprechend." On the basis of this theory the various types of bullae were attached to documents, either tax receipts or contracts presented for registration. These would be sealed by the private individual concerned and also by at least one government official. The type of official stamp used would naturally vary with the nature of the document.

V. COINS

By R. H. McDOWELL

DURING three seasons of excavation a very large number of coins have been obtained. Some, perhaps one per cent of the total, have been found in the areas actually under excavation. The rest have been picked up on the surface of the mounds by the Arab workmen as they come and go. It is well to state in this connection that, since the mounds cover an area of several square miles, traversed in all directions by public trails, it is therefore impracticable to attempt to forbid the collection of these surface coins by the Arabs. By accepting them and rewarding the finders the Expedition secures the objects that would otherwise find their way into the hands of dealers.

Such coins come from all parts of the mounds and are all classed as surface finds. The coins which have been cleaned (with the exception of those from the areas of excavation) have been taken quite haphazardly from this accumulation, with no attempt at selection. They may be said, therefore, to represent, within the limits of chance, a fair average of the types to be found over the mounds as a whole. Since objects of an enduring nature tend to be passed along from generation to generation, and so from level to level, surface objects represent in a general way a cross-section of the material to be found in all the levels of a given site. This is true, naturally, only where there have been no breaks in the continuity of occupation of the site, as is the case at Seleucia. Money is peculiarly subject to such transference from period to period. The coins under discussion may, therefore, be said to furnish at least an idea of the types of coinage in use during the existence of the city and of the proportions in which they were found at any period. They may serve, at any rate, to set

up hypotheses which may later be disproved or confirmed by a more detailed study of a larger number of coins.

Two methods of cleaning have been followed; a comparatively few coins have been first soaked in a solution of five parts of caustic soda and fifteen parts of Rochelle salts to one hundred parts of water and then brushed; but the greater number have been simply brushed with a soft copper wire brush. For this reason it has not been possible to distinguish dates or monograms on a number of specimens. Most of the coins are in remarkably good condition and will respond to further cleaning.

In studying these coins there have been available only the British Museum catalogues, *Catalogue of Greek Coins*, *The Seleucid Kings of Syria*, by Percy Gardner, London, 1878; *Catalogue of the Coins of Parthia*, by Warwick Wroth, London, 1903; *Catalogue of the Greek Coins of Arabia, Mesopotamia, Persia*, by G. F. Hill, London, 1922; and *Monnaies grecques*, by F. Imhoof-Blumer, Paris and Leipzig, 1883. In the accompanying coin lists the British Museum catalogues have been referred to as *BMC, Syria, Parthia*, or *Mesopotamia*. These lists give a brief description of each coin type, so far as it has been possible to identify them without further cleaning and without reference to other important catalogues. Unless otherwise stated all coins are bronze. There will be discussed below only those types that present certain peculiarities.

Nos. 8-9. These two coins are assigned by Professor Gardner to Antiochus Hierax, but with the general reservation covering a group of similar coins that there is difficulty in deciding whether they should be assigned to Antiochus III or to Hierax (*BMC, Syria*, Introduction, p. xvi). The fact that Antiochus Hierax did not extend his sway to Babylonia and that bronze coins are very rarely found far from the area in which they were intended to circulate establishes a possibility that these two types should rather be assigned to Antiochus III. The monogram found on No. 8 is one that appears to

have been employed by Antiochus III alone of the kings of that name.

No. 12. No exact duplicate of this coin is to be found in *BMC*. It differs, however, from *BMC, Syria*, Nos. 36-39, p. 27, only in the position of the feet of the elephant on the reverse, a feature duplicated by *BMC, Syria*, No. 28, p. 26. In view of this resemblance to two types of the coins of Antiochus III it seems reasonable to assign our coin to him.

No. 16. The obverse and the reverse type of these two coins are those of *BMC, Syria*, Nos. 83-84, p. 42. The inscription on the latter, however, shows it to have been issued in Syria. On our specimens the inscription is not yet legible. The clear portrait of Antiochus IV on the obverses makes the assignment of these coins to him unquestionable. It is not likely that bronze pieces from a Syrian city would be found at Seleucia on the Tigris, and it is reasonable to assume that identical coins with differing inscriptions were minted for various cities.

No. 17. As stated in the lists, the obverse of this coin is that of one of the known coins of Seleucus I; the reverse, that of one of Seleucus II. No monograms or symbols are visible; hence no attempt has been made to assign this coin to one of the two monarchs.

No. 18. The reverse type of this coin is not found in *BMC*, and the portrait on the obverse is not sufficiently clear to enable one to identify the king. We find, however, the monogram similar to that on No. 8, which as has been stated, seems to have been one that was peculiar to Antiochus III. Provisionally, therefore, this coin has been assigned to him.

No. 19. In the case of this coin, again, the reverse type is not found in the catalogues available, nor can the king's name in the inscription be read. The type evidently represents Pallas, but this figure does not seem to have been employed by one king more than by another. The bearded head on the obverse resembles most nearly Seleucus II, so that the coin is tentatively assigned to him.

No. 20. There seems to be no question but that the obverse here represents Demetrius and Laodice. The reverse of our coin, however, is not found in *BMC* on the coins of Demetrius. It is found on a coin of Timarchus, *BMC, Syria*, No. 3, p. 50, assigned by Gardner to the mint of Babylon. No. 2 in *BMC, Syria*, p. 50, is a coin of Demetrius and Laodice which has been struck and double-struck on a tetradrachm of Timarchus. Our specimen is, therefore, probably a coin of Timarchus, the obverse of which has been restruck, while the type of its reverse has been retained.

No. 21. This coin is not clear, but on the obverse, which has heads jugate, it is certain that the female portrait is in the foreground and the male in the background. This position seems to indicate a coin of Cleopatra and Antiochus VIII, since the reverse type, likewise, is found in their coinage. The last known campaign of the Syrian kings to recover the East was that of Antiochus VII against Phraates II, in 130 B.C. The reign of Cleopatra and Antiochus VIII extended from 125 to 121 B.C. If this coin belongs to them it is one of the rare instances of a copper coin found outside the area of its natural circulation. Among the bitumen bullae found in a room of Level III of the past season's excavations is a seal impression, with a representation of heads jugate resembling closely the obverse of this coin. Granted the possibility of a coin finding its way from Syria, it is extremely unlikely that a bulla of an apparently official character from Syria should be found among remains of an archive in Seleucia. If the heads jugate are the same in both cases, it would make it necessary to assign the coin to some other royal pair, probably to Cleopatra and Alexander Bala.

No. 25. It is worth noting that here we have on a bronze coin a symbol used by Gotarzes, but among the British Museum specimens this symbol is found only on the tetradrachms (*BMC, Parthia*, p. 177).

No. 34. The treatment of the hair and the beard of the obverse and the Tyche type of the reverse bear some resemblance to the coins of Phraates IV (38/37-3/2 B.C.).

No. 35. The execution of this coin is barbaric and points to a late king; the portrait on the obverse resembles those of Volagases V, *BMC, Parthia*, Pl. XXXVI, 7. It is not unreasonable, therefore, to assign the coin to him.

No. 38. The monogram found on specimen *a* of this number is not found on any of the British Museum specimens (*BMC, Mesopotamia*, p. 141).

No. 40. Owing to the condition of this coin it has not been possible to read the inscription and determine whether it bears the name of the month ΤΟΡΡΑΙΟΥ, as does *BMC, Parthia*, No. 16, Pl. XXIII, or of the month ΥΠΕΡΒΕΡΕΤΑΙΟΥ, as does No. 4 of Pl. LII.

No. 41. This type, of which we have three specimens, is interesting and the use of a monogram as a reverse type is unusual. It is not found in the British Museum collection, but is referred to by Mr. Hill in his Introduction (pp. cxvi-cxvii), with further reference to De Saulcy, *Terre sainte*, p. 287, No. 1. Two of our specimens have the date $\zeta\kappa\tau$, which apparently corresponds to that of De Saulcy's. Our specimen (*a*) bears a date fifty years later, which is evidence of the re-use of old types. An examination of Parthian coin lists demonstrates that the monogram used here as a type was very distinctive of the coins of Mithradates I. Professor Gardner, in his *Parthian Coinage*, London, 1877, p. 24, identifies it with the town name Charax. Mr. Wroth, *BMC, Parthia*, Introduction, p. lxxxii, disagrees with this on the ground that there are other similar coins of about the same date, but with other monograms. If these are to be taken as town names, indicating different mints, one must assume that similar coins were being minted in different places at the same time, which he considers unlikely. Since we have here the monogram used as a type, with ΒΟΥΛΗ, it could scarcely have been the city mark of Charax. Since it is so generally used by Mith-

radates on his later coinage, after his capture of Seleucia, it is possible to assume that the monogram represents the Seleucia mint, which may have been used for all the Mithradatic coinage issued for the western part of his empire.

No. 43. This type, of which we have sixteen, is not found in *BMC*. It was seen by Mr. E. T. Newell and identified by him as being Seleucia civic coinage. Without further cleaning it is not possible to read the inscriptions on the coins.

No. 44. This type is referred to in *BMC, Mesopotamia*, Introduction, p. cxv, No. 1, and is given by Imhoof-Blumer, *op. cit.*, p. 451, No. 60. It would seem to be somewhat rare in collections, but as we have twenty-seven specimens, forming over 17 per cent of the total so far identified, it must have been very common in Seleucia. Three of our specimens were found in lower levels, undoubtedly Seleucid and earlier than the latest Seleucid level. Even without further cleaning it is evident that some of this group, from the surface, are crudely executed and would seem to be of a late date. It is possible, therefore, to conclude that this type was used and re-used over a long period of the city's history, which would explain the quantities which have been found.

No. 46. The question may be asked in connection with this coin, whether the use of the Seleucid anchor as a type indicates that these coins were minted during the early period of Seleucid rule at Seleucia.

No. 47. We have again here the use of a monogram as a coin type. Professor Gardner in *BMC, Syria*, Introduction, p. xxxiii, thinks it probable that the character M on Seleucid coins stands for Metropolis, referring, in the case of Syria, to Antioch. It is possible to consider that the M of this monogram and of other similar ones found on coins from Seleucia stands for Metropolis.

The meaning of the monograms found on so much of the ancient coinage has troubled many who have attempted to explain them. Though these coins from Seleucia are too few in number to throw much new light on the subject as a

whole, coming as they do from one known locality, they do serve to show what may be done, by a proper study of a large number, to clear up the question of whether monograms represent city mints or magistrates' marks or both.

We have here a total of 153 coins at least roughly identified, representing 59 issues. Of these, the Seleucid royal coinage accounts for 26 pieces of 20 issues; the Parthian royal, for 32 pieces of 16 issues; the Seleucia civic, for 83 pieces of 19 issues; the Roman, for 5 pieces of 2 issues; the Sassanian, for 7 pieces, probably of 2 issues. It is, perhaps, not proper to take into consideration the coinage issues, in view of the fact that so many of the specimens have not yet been properly cleaned, and therefore not completely identified in respect to dates and monograms. For example, the twenty-seven coins comprised under Nos. 44-45 are considered of one issue simply because it has not been possible to identify the various issues which undoubtedly account for the total. The issues are given here, however, simply to show the variety of the coins which have been found and their distribution.

The Seleucid royal specimens cover nine reigns. From Seleucus I to and including Demetrius I, we have coins of all the kings save Antiochus II, Seleucus III, and Antiochus V, all of whom reigned for but short periods. Antiochus IV is represented by 7 coins of 3 issues; Antiochus I, by 5 of 3 issues; Seleucus I, by 3 of 3 issues. If the coins supposed to be of Antiochus Hierax are to be assigned to Antiochus III, the latter would have a maximum of 5 coins of 5 issues.

In the Parthian coinage we find that our first coins are those of Orodes I, about a century after the city fell into Parthian hands, and these are tetradrachms, which were more apt to be carried from place to place. The earliest Parthian copper coinage is of the reign of Gotarzes (40/41-51 A.D.), approximately two hundred years after the capture of the city. This first copper coinage coincides with the date of the recapture of the city after its seven years of revolt, placed by

A. von Gutschmid (*Geschichte Irans*, 1888), at 43 A.D., by others in 46 A.D. (see Wroth, *BMC, Parthia*, Introduction, p. xlvi). As we shall see below, the bulk of the civic coinage comes before the date of Gotarzes. For the period before the revolt, therefore, we have an abundant city coinage, with practically no Parthian coinage; after the revolt, a dwindling civic coinage, while the Parthian copper coins become common. Naturally this tendency in the distribution of our coins should not be given too much weight until further studies can be made of the mass of coins waiting to be cleaned. From the time of Gotarzes to and including the reign of Volagases V, whose successor saw the rise of the Sassanian revolt, we fail to find among our coins the money of more than three of the Parthian kings. Osroes, with a total of 3 issues and 12 pieces, is credited with the largest number of coins in the Parthian group. These coins of his cover a period of from 116 to 127 A. D., immediately after the capture of the city by Trajan in 116 A.D. Volagases III has the next largest group, represented by 3 issues and 6 pieces, dating from 173 to 176 A.D., within ten years of the burning of the city by Avidius Cassius in the reign of Marcus Aurelius. After the sacking of the city by Septimus Severus in 198-99 A.D., we have 2 issues, represented by 2 pieces. A study of further quantities of these coins may serve to indicate whether the city suffered really complete disasters during these campaigns.

Our coins of Volagases II may aid in clearing up one obscure point in Parthian history. This king ruled during the same period as did another Parthian king, Mithradates IV, but it is not known how the empire was divided between them (Wroth, *op. cit.*, pp. lix, 215). The fact that we have two coins of this Volagases, and none of Mithradates, may indicate that the former controlled Babylonia; but this conjecture would need to be confirmed by the discovery of a like relation in subsequent finds of coins.

Of a total of 83 coins of 19 issues of civic coinage, 53 pieces, of 15 issues, are dated. Of the dated coins 25, of 4

issues, are of the era before Christ, and 28, of 2 issues, of our era. Taking the reign of Gotarzes as a dividing point, when Parthian copper money first appears in our group, we find that the period before this king is represented by 9 issues and 40 coins; the period, including and succeeding his reign, by 6 issues and 13 coins.

One may assume that the Roman coins were brought to the city during the various Roman occupations. The finding of considerable quantities of Roman coins at Seleucia will raise some interesting questions as to the length of these occupations.

LIST OF COINS

All coins were found on the surface except those listed under Nos. 4, 7, 28, 45, 46, which came from the excavations. They are referred to by their Register (R.) numbers, with the area of location (e.g. T.T.4) and with capital letters to indicate the season (A=1927-28; B=1928-29; C=1929-30).

SELEUCID ROYAL COINAGE

(The references are to the British Museum Catalogue, volume on Syria, unless otherwise indicated.)

NO.	DESCRIPTION	REFERENCES	NO. OF COINS IDENTIFIED
1.	Seleucus I (312-280 B.C.). Obv.: Head, horse, r., bull's horns Rev.: Anchor, inverted; to r., symbol, obscure; inscr. as usual	P. 5, No. 47 Pl. II, 6	1
2.	Seleucus I Obv.: Medusa head, r., Rev.: Indian bull, butting, r.; inscr. as usual	P. 6, Nos. 62-64 Pl. II, 14, 15	1
3.	Seleucus I Obv.: Head of Apollo, r., laureate Rev.: Indian bull, butting, r., inscr. as usual; above M	P. 7, No. 71 Pl. II, 15	1

NO.	DESCRIPTION	REFERENCES	NO. OF COINS IDENTIFIED
4.	Antiochus I (280–261 B.C.) Obv.: Head of Pallas (?), crested helmet, facing $3/4$ r. Rev.: Apollo, seated, r., on omphalos, r. <i>band hanging down</i> , behind him tripod No. 1651–A, T.T.4, Level IV	Not in BMC	1
	BMC has similar coin of Antiochus I, but Pallas $3/4$ l., and Apollo <i>playing lyre</i>	P. 13, No. 56	
5.	Antiochus I Obv.: Head of Apollo, laureate, facing $3/4$ r. Rev.: Nike, r., erecting trophy; inscr. as usual	P. 12, Nos. 51–54 Pl. IV, 10	1
6.	Antiochus I Obv.: Head of Apollo, laureate, r. Rev.: Apollo, seated on omphalos, l.; ar- row r. hand, l. on lyre	P. 13, Nos. 59–60 Pl. IV, 16	2
7.	Identical with No. 6, but location, T.T.4, Level V, 838–B		1
8.	Antiochus Hierax (?) (227 B.C.) Obv.: Head of Antiochus, diadem, r. Rev.: Apollo, seated on omphalos, l., holds arrow and bow; inscr. as usual; mono- gram $\overline{\text{M}}$; not on this coin in BMC	P. 41, No. 15 Pl. VII, 4	1
9.	Antiochus Hierax (?) Obv.: Head of Antiochus, diadem, r. Rev.: Nike, standing, l., holds long palm; monogram as in No. 3	P. 21, No. 17 Pl. VII, 5	1
10.	Seleucus II (246–226 B.C.) Obv.: Head of Seleucus, diadem, r. Rev.: Apollo, naked, standing, l., holds bow and arrow Monogram as in No. 3	P. 16, Nos. 12–13 Pl. VI, 3	1
11.	Antiochus III (222–187 B.C.) Obv.: Head Antiochus, laureate, r. Rev.: Apollo, naked, standing, l., holds arrow and bow	P. 28, Nos. 52–53 Pl. IX, 11	1


NO.	DESCRIPTION	REFERENCE	NO. OF COINS IDENTIFIED
12.	<p>Antiochus III Obv.: Head of Antiochus, laureate, r. Rev.: Elephant, advancing r., usual inscr. behind, inverted anchor BMC, No. 4, Pl. IX, Antiochus III, similar, but position of elephant's feet differs; in this respect No. 1, Pl. IX, similar</p>	Not in BMC	1
13.	<p>Seleucus IV (187-175 B.C.) Obv.: Head of Apollo, laureate, r.; behind Α; not on this coin in <i>BMC</i> Rev.: Apollo, naked, standing, l.; holds arrow in r. hand; left elbow on tripod</p>	P. 32, Nos. 19-21 Pl. X, 9	1
14.	<p>Antiochus IV (175-164 B.C.) Two chalkoi Obv. Head of Antiochus, radiate, r., be- hind B X Rev.: Female, turreted, seated on throne, l., in r. hand Nike, at feet bird, l.</p>	P. 36, Nos. 24-25 Pl. XII, 2	1
15.	Identical with No. 14, but small		
16.	<p>Antiochus IV Obv.: Head of Antiochus, radiate, r. Rev.: Winged thunderbolt; inscr. not legible BMC specimen has ΣΕΛΕΥΚΕΩΝ ΤΩΝ ΕΜ ΠΙΕΡΙΑΙ</p>	P. 42, Nos. 83-84 Pl. XIII, 6	2
17.	<p>Seleucus I or Seleucus II (?) Obv.: Head of Apollo, laureate, facing; similar to Seleucus I, No. 58, p. 6, <i>BMC</i> Rev.: Nike, l. crowning name ΣΕΛΕΥΚ[], similar to Seleucus II, No. 29, p. 18, <i>BMC</i></p>	Not in BMC	1
18.	<p>Antiochus III (?) Obv.: Head of king, diadem, r. Rev.: Male figure, naked, standing r., arms raised To r., down, ΒΑΣΙΛΕΩ[Σ], to l., down, ANTIOXO[Y] Behind, monogram as in No. 8</p>	Not in BMC	1

NO.	DESCRIPTION	REFERENCES	NO. OF COINS IDENTIFIED
19.	Seleucus II (?) Obv.: Royal head, garlanded, bearded, r. Rev.: Pallas (?) standing l., in r. hand, spear, in l., shield; to r., down, ΒΑΣΙ- ΛΕΩΣ, to l., not legible	Not in BMC	1
20.	Demetrius I and Laodice (162-150 B.C.) ? Obv.: Heads, jugate, r. Rev.: Nike, standing, l., crowns name of king (not legible) This type of reverse not found on coins of Demetrius in <i>BMC</i> , but occurs on those of Timarchus (revolted, 162 B.C.)	Not in BMC	1
21.	Cleopatra and Antiochus VIII (125-121 B.C.) (?) Obv.: Heads, jugate, r. Rev.: Nike advancing l., holds wreath; inscr. not legible	P. 86, Nos. 7-8 Pl. XXIII, 4	1

PARTHIAN ROYAL COINAGE

(The references are to the British Museum Catalogue, volume on Parthia.)

22.	Orodes I (57-38/37 B.C.). Tetradrachm Obv.: Bust of Orodes, l., close beard, hair flowing, diadem, cuirass Rev.: Orodes, seated on throne, r., raises r. arm of Tyche, kneeling; Tyche holds sceptre in l.	P. 72, No. 31 Pl. XIV, 11	1
23.	Phraates V and Musa (3/2 B.C.-4 A.D.) Tetradrachm Obv.: Bust of king, l., pointed beard, dia- dem, cuirass, at side, Nike Rev.: Arsaces seated on throne, r., holds bow	P. 137, Nos. 5-8 Pl. XXIII, 11	1


NO.	DESCRIPTION	REFERENCES	NO. OF COINS IDENTIFIED
24.	Artabanus III (10/11-40 A.D.). Tetra- drachm Obv.: Bust of king, l., pointed beard, hair flowing, diadem, cuirass Rev.: King, seated on throne, l., before him Tyche standing, offering palm, male figure kneeling	P. 147, Nos. 8-13 Pl. XXV, 2-3	1
25.	Gotarzes (40/41-51 A.D.) Obv.: Bust of king, l., long beard, flow- ing hair, diadem, cuirass Rev.: Bust of Tyche, r., turreted, be- hind  Date, obv., in front, (a) ZNT, (b) ΣNT, 357 A.S., 45/46 A.D.	P. 170, Nos. 89 ff. 2 Pl. XXVII, 15	2
26.	Pacorus II (77/78-109/10 A.D.) Obv.: Bust of king, l., slight beard, hair in formal rows, diadem, etc. Rev.: Bust of Tyche, r. turreted Date, obv., (a) ΔϙΤ, (b) Δϙ-, (c) - -Τ, 394 A.S., 82/83 A.D.	P. 199, No. 37 ff. 3 Pl. XXX, 11	3
27.	Osroes (106/7 or 109/10-130?) Obv.: Bust of king, l., pointed beard, hair in bunches, diadem, etc. Rev.: Bust of Tyche, turreted, r. Date, rev., in front, (a) and (d) HKY, rest obscure; 428 A.S., 116/7 A.D.	P. 206, No. 13 Pl. XXX, 13	5
28.	Same type as No. 27, date obscure; location, T.T. 4, Level II, R. 3, 709-B		3
29.	Same type as No. 27, date ΘKY, 429 A.S., 117/18 A.D.		2
30.	Osroes Obv.: Bust of king, l., pointed beard, hair in tuft, helmet, diadem Rev.: Bust of Tyche, turreted, r., holding palm Date: rev., behind, (a) ΘΛΥ, (b) not on flan; 439 A.S., 127/28 A.D.	P. 207, No. 22 Pl. XXXII, 3	2

NO.	DESCRIPTION	REFERENCES	NO. OF COINS IDENTIFIED
31.	Volagases II (77/8–146/7 A.D.) Obv.: Bust of king, l., long pointed beard, helmet with flap Rev.: Head of Tyche, turreted, r. Date, rev., in front, (a) ΛΥ, (b) not legible; 430 A.S., 118/19 A.D.	P. 216, No. 49 Pl. XXXIII, 3	2
32.	Volagases III (147/8–191 A.D.) Obv.: Bust of king, l., long beard, helmet with flaps Rev.: Tyche, seated l., turreted, in front, palm Date, obv. in front, (a) ΗΙΙΥ, (b) ΕΠΙΥ or [ΠΙΥ, (c) (d) (e) –ΠΙΥ, (f) obscure (a) 488 A.S., 176/7 A.D., (b) 485 or 486 A.S., 173/4 or 4/5 A.D.	P. 233, No. 77 ff. Pl. XXXIV, 11	6
33.	Volagases V (207/8–221/2 A.D.). Tetradrachm Obv.: Bust of king, l., long beard, helmet with spiked appendages Rev.: King seated on throne, l., receives diadem from Tyche, standing Date. Coin requires further cleaning before it can be read.	P. 241 No. 1 ff. Pl. XXXV, 14	1
34.	Not identified Obv.: Bust of king, l., pointed beard, hair in formal rows Rev.: Female figure (Tyche?) standing l., holding wreath outstretched	Not in BMC	2
35.	Volagases V (?) Obv.: Bust of king, l., long beard, helmet, as in Pl. XXXVI, 7 Rev.: Figure (Tyche?) r., in front palm, behind . . .	Not in BMC	1

CITY COINAGE

(Unless otherwise stated, the references are to the *British Museum Catalogue*, volume on Arabia, Mesopotamia, Persia, section on Mesopotamia.)

NO.	DESCRIPTION	REFERENCES	NO. OF COINS IDENTIFIED
36.	Obv.: Bust of Tyche, turreted, r. Rev.: Tripod, inscr. r. and l., down: ΣΕΛΕΥΚΕΩΝ ΤΩΝ ΠΡΟΣ ΤΩΙ ΤΙ ΓΡΕΙ Date, BMC specimens II and I centuries B.C.	P. 140, Nos. 1-2 Pl. XXIII, 3	10
37.	Obv.: Bust of Tyche, turreted, r. Rev.: Cornucopia, inscr. as in No. 36 Date, BMC specimens II and I centuries B.C.	P. 140, No. 3 Pl. XXIII, 5	3
38.	Obv.: Bust of Tyche, turreted, r. Rev.: Tyche, seated, l., holding Nike in r., cornucopia in l., behind Thymiaterion; in field, l., Κ Date, BMC specimens II and I centuries B.C.	P. 141, No. 4 Pl. XXIII, 6	7
39.	Obv.: Bust of Tyche, turreted, r. Rev.: Tyche, seated, r., circular seat, palm in r., at feet river god Date rev., (a) ΑΟΣ, others not legible; 271 A.S., 42/41 B.C. (Orodes I)	P. 141, No. 6 Pl. XXIII, 8	5
40.	Obv.: Bust of Tyche, turreted, r. Rev.: Female head, r., with kalathos and veil; inscr. from l. above to r.; behind monogram, found in No. 41 as rev. type Date, BMC specimen, 326 A.S., 14/15 A.D. (Artabanus III)	P. 145, No. 41 Pl. XXIII, 16	1
41.	Obv.: Bust of Tyche, turreted, r. Rev.: ΧΡ, surrounded by ΒΟΥΛΗ and date Date, rev., (a) [OT, 376 A.S., 64/65 A.D. (b) (c) [KT, 326 A.S., 14/15 A.D. (a) reign of Volagases I; others of Arta- banus III	P. cxvi, No. 6; De Saulcy, <i>Terre sainte</i> P. 287, No. 1	3

NO.	DESCRIPTION	REFERENCES	NO. OF COINS IDENTIFIED
42.	Obv.: Bust of Tyche, turreted, r. Rev.: Nike, advancing l., palm in hand Date, rev. (a) ΓNT, (b) BNT, (c) ANT, (d) not legible (a) A.S. 353 (b) 352 (c) 351, A.D., 41/42, 40/41, 39/40, reigns of Artaban- us III and Gotarzes	P. 145, No. 43 ff. Pl. XXIII, 18	4
43.	Obv.: Bust of Tyche, turreted, r. Rev.: Bull, r., tail elevated; traces of inscr. obscure Date, rev., (a) (b) [Λ ?, (c) (d) [Λ ([ΛT ?), (f) -OT, (g)-ΠIT (c) (d) 336 A.S., 24/25 A.D.?, (f) 370-79 A.S., 58-68 A.D. (g) 380-9 A.S., 68-78 A.D. Ten others require cleaning.	Not in BMC	16
44.	Obv.: Bust of Tyche, turreted, r. Rev.: Two Tyches, r. and l., tripod be- tween them Dates not legible without further cleaning	P. cxv, No. 1; Imhoof-Blumer, <i>Monn. gr.</i> , P. 451, No. 60 ff.	24
45.	Same type as No. 44, but location (a) T.T. 21, Level II, R. 110-B; (b) T.T.4, Level IV, R. 530-B; (c) T.T.4, Level V, R. 1705-B		
46.	Obv.: Bust of Tyche, turreted, r. Rev.: Anchor, reversed, traces of inscr., obscure No date legible, Level I, R. 144, 2363C	Not in BMC	
47.	Obv.: Bust of Tyche, turreted, r. Rev.:  Date, rev., above, [ΠIT, 386 A.S., 74/75 A.D. (Volagases I)	Not in BMC	3
48.	Obv.: Bust of Tyche, turreted, r. Rev.: Bust, r., obscure, to l., the monogram used in No. 47 as rev. type; trace of inscr.	Not in BMC	1

NO.	DESCRIPTION	REFERENCES	NO. OF COINS IDENTIFIED
49.	Obv.: Bust of Tyche, turreted, r. Rev.: Bust, apparently l., obscure, to l. monogram as in No. 48; traces of inscr. from l. above to r. down.	Not in BMC	1
50.	Obv.: Bust of Tyche, turreted, r. Rev.: Tyche, standing, l., holding Nike, at feet, river god (?); traces of inscr. Date. The specimen of Imhoof-Blumer has ΔO [274 A.S., 39/8 B.C. (Ordes I)	Imhoof-Blumer, <i>Monn. gr.</i> P. 452, No. 67	1

MISCELLANEOUS

- | | | | |
|-----|--|--|---|
| 51. | Roman. Trajan (98–117 A.D.). Identified
by Mr. E. T. Newell.
Obv.: Head, Trajan, r.
Rev.: SC, encircled by garland. | | 4 |
| 52. | Roman. Antonius Pius (138–161 A.D.).
Identified by Mr. Newell.
Obv.: Bust, Antonius, r.
Rev.: Standing figure, l. | | 1 |
| 53. | Sassanian. All have fire altar as reverse
type. No further identification made. | | 7 |

VI. NOTES AND COMMENTS

By LEROY WATERMAN

THE figurine types shown in Plates VI-X were chosen from over thirteen hundred examples in a similar state of preservation. The material is being studied under the supervision of the Near East Research Committee of the University of Michigan.

Attention is called here to certain details that might escape notice from observation of the plates alone. For example, the missing arms of the torsos (Pl. VI, Figs. 7-8) are not due to mutilation. Plate VI, Figure 4, although a torso, is complete, and there are duplicates. Of Plate IX, Figures 33, 34, and 36 are also complete designs. Figure 36 consists simply of a head and beard, made to stand as shown; Figure 35, consisting of the "Santa Claus" features, was made to be attached to a plaque. Plate VII, Figure 13, a fetish-like object, is of practically natural size, resembling a penguin, having wings for arms, but partly human features. It is made of a crude glaze.

Of some types we have at present but few examples. This is true of the strongly Sassanian type (Pl. VIII, Fig. 26), of which there are but two. Both are of the same plaque design. The strongly Asiatic type (Pl. VI, Fig. 2) has also but one close parallel. Of the animal figures, the boar's head (Pl. VII, Fig. 16) is noteworthy because it is decorated with a double crown. The boar's head suggests a Macedonian influence. On Plate XI, Figures 1-2 represent objects made of a substance closely resembling jade, and show fine workmanship. Figure 3 represents a tiny urn with stopper. Figure 4, the "incense burner" (from the first Parthian level), stands about fourteen inches high, with a base seven inches square, and is finished in a very delicate green glaze. It is to be seen in the Baghdad museum.

The sealed jar (Pl. XII, Fig. 1) is one of four examples found during the closing days of the 1930 season at T.T. 30 (see Fig. 1). All are small jars, from six to eight inches in height, of very common unglazed ware, but of different types. Two have a handle, the others none. All were sealed with bitumen stoppers. Only one was found in an upright position and it contained fragments of a small glass bottle. The other three were lying in a horizontal position and each was held in place by small rods set upright at the ends and sides. These rods were from six to ten inches long and projected slightly above the jars. Each jar had one iron rod, the rest being of bronze. The maximum number of rods found with any one jar was four.

Each of the three horizontally placed jars contained a small bronze cylinder originally sealed at both ends (Pl. XII, Fig. 2). The cylinders were all of the same dimensions, being approximately one and one-fourth inches in diameter and three inches long. Each cylinder originally contained what appears as a tightly wrapped roll, though in one instance, owing to the loosening of the ends of the cylinder, the contents had become a mass of mere flakes. A second roll had partially disintegrated, so that only a small closely wrapped core is preserved. The third appears to be intact and gives the impression of a roll of paper folded over at the ends. A preliminary microscopic examination of the flakes proves the substance to be plant and not animal fibre, hence probably papyrus. In any case, there is presumptive evidence of writing, which will be verified as soon as practicable.

The jars were found at different points and in no observable order, but scattered about a peculiar rectangular structure built of sun-dried bricks, which stands isolated on the mounds with every indication that it is later than the first Parthian level. None of the jars were connected with burials. Three incantation bowls were found in the same vicinity. Two of these were of the usual Aramaic variety, covered with the simulation of writing. One of them was placed as a

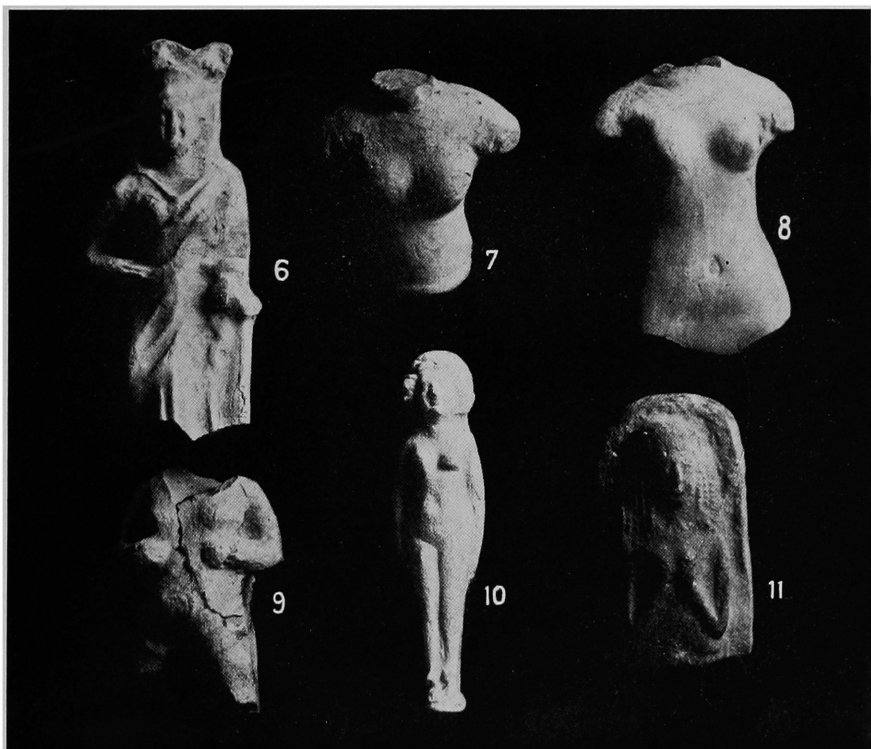
cover over the other and the receptacle thus formed contained an egg-shell covered with the same design. The third bowl, which was inscribed with Syriac writing, had been broken.

The date of these objects may be inferred in general from a small cloth bag (the fibre of which is still intact) which was found in close proximity and which contained a small quantity of copper and silver coins, the silver exemplars being definitely Sassanian.

The vaulted tomb (Pl. XIII) was found at T.T. 18 (see Fig. 1) at a depth of 18 feet. It is a barrel-vaulted structure of burnt brick, 11 feet by 11½ feet, and 6 feet 8 inches high, inside measure at the highest point. The walls are approximately one foot thick. The tomb has three regular means of entrance: one through the chimney-like stairway leading down from the top (left); a second by the arched opening at lower right; and a third, an exact counterpart of the second, but on the opposite side. The hole in the top (middle) is an ancient artificial break. The structure appears to have been a family vault. It contained four burials. All had disintegrated except for the remains of teeth, and all but one had been rifled in ancient times. This yielded very interesting examples of beads and semiprecious stones.

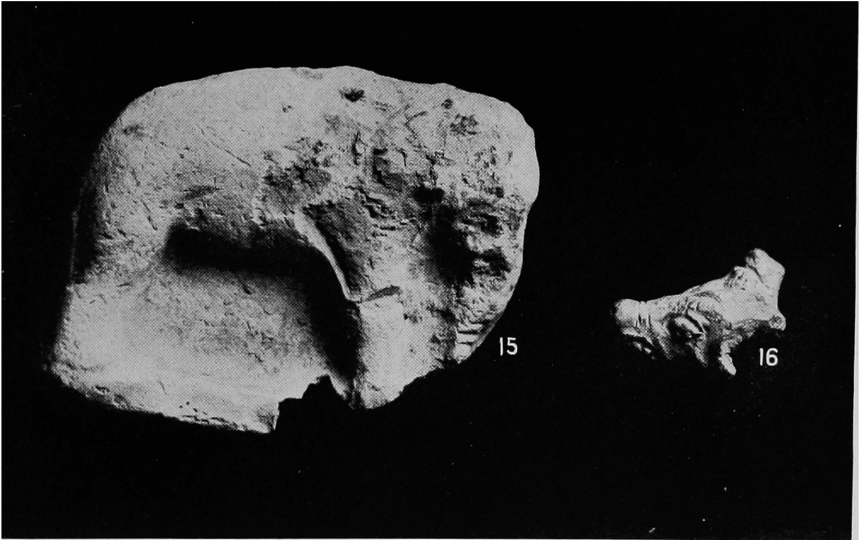
None of the objects found in the tomb permit of precise dating. A Sassanian coin, found high up in the intrusive débris that filled the vault, is therefore of practically no assistance in this regard. Further excavation will be needed to settle the point definitely.

PLATE VI



Figurine types

PLATE VII



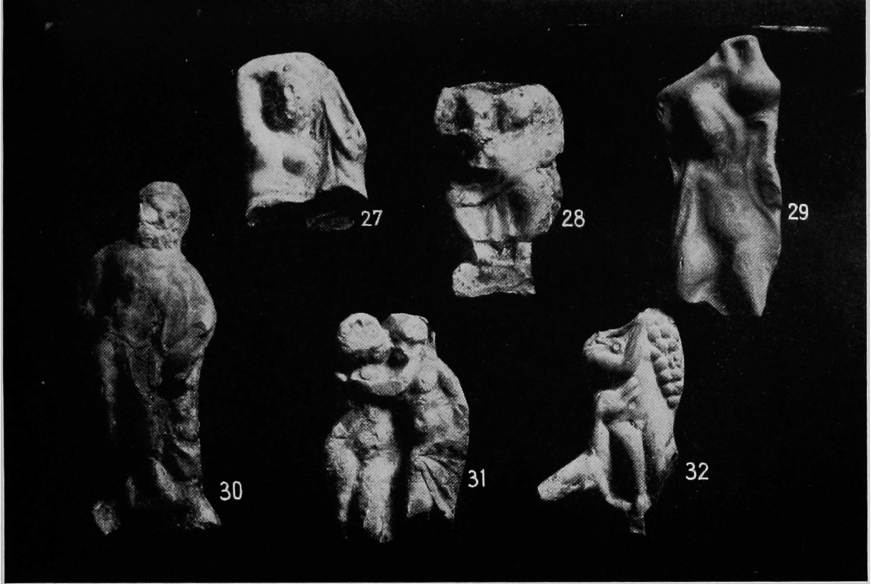
Figurine types

PLATE VIII



Figurine types

PLATE IX



Figurine types

PLATE X



Figurine types

PLATE XI



FIG. 1. Jade (?) rabbit

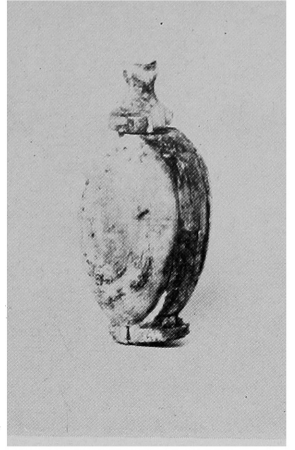


FIG. 3. Ivory urn



FIG. 2. Green goddess

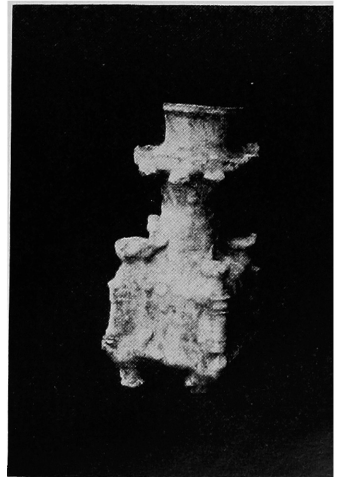


FIG. 4. Incense burner

PLATE XII



FIG. 1. Sealed jar

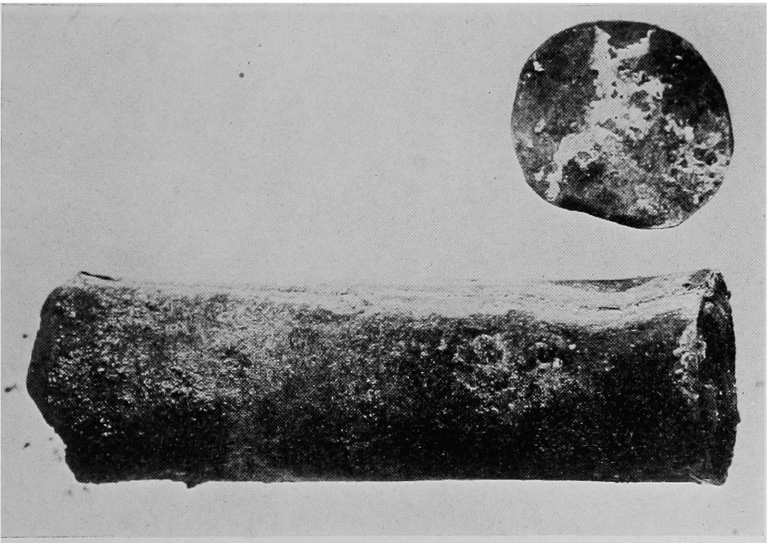


FIG. 2. Bronze cylinder found in the jar shown above

