

THE UNIVERSITY OF CHICAGO  
ORIENTAL INSTITUTE PUBLICATIONS  
VOLUME LXIX



# PERSEPOLIS

## II

### CONTENTS OF THE TREASURY AND OTHER DISCOVERIES







TRIBUTE FROM ARIA(?), BABYLONIA, AND SYRIA  
EASTERN STAIRCASE OF THE APADANA

THE UNIVERSITY OF CHICAGO  
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# PERSEPOLIS

## II

CONTENTS OF THE TREASURY  
AND OTHER DISCOVERIES

*ERICH F. SCHMIDT*



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## PREFACE

THE introductory pages of Volume I (*OIP* LXVIII) express the writer's indebtedness to his collaborators in the field and at home, to the sponsors of the Persepolis Expedition, and to its benefactors and friends. The expedition architects, in particular Richard C. Haines, were the major contributors to the material presented in the first volume, which deals largely with the structural remnants on the Persepolis Terrace. The present volume, dealing principally with the objects which we uncovered in the debris of these buildings, owes much to Donald E. McCown's conscientious primary registration of the finds. Furthermore, McCown prepared numerous casts of inscribed objects, sealings, coins, and so forth. These casts, supplementing the graphic records, proved very valuable in the preparation of the pertinent sections of this publication, for most of the antiquities excavated on the Persepolis Terrace after 1936 were retained in Iran, and a type collection ceded in 1941 by the Iranian authorities to the American institutions sponsoring the expedition was lost in 1942 by submarine action, presumably in the Arabian Sea.

The graphic documentation of the objects was in the hands of our able field photographer, Boris Dubensky, and two artist-draftsmen, Sako and Minassian. Frederick Lillich, who remained with the expedition after the involuntary cessation of our aerial explorations,<sup>1</sup> completed the photographic field work of the last season<sup>2</sup> subsequent to Dubensky's departure for the United States. Lillich recorded the site and its environs on colored motion picture film. He advised and helped in all technical problems and made molds—by means of liquid rubber compound—of numerous objects, parts of reliefs, and the newly discovered Sasanian inscriptions on the Ka'bah-i-Zardusht. Norair Balassanian, our camp superintendent, proved his loyalty and competence during the liquidation of camp and after the departure of the expedition.

The photographs appearing in this volume were prepared in final form by Dubensky and his able successor, Mrs. Ursula Schneider. Miss Edith Lindquist assisted in editorial and bibliographical problems while typing the Persepolis manuscripts. The writer is greatly indebted to the Editorial Secretary of the Oriental Institute, Mrs. Albert R. Hauser, who with professional skill took care of the final editing, the verification of references, and the preparation of the indexes.

The writer gratefully acknowledges the various contributions to the present volume: Mr. Sydney P. Noe and members of the museum staff of the American Numismatic Society in New York prepared the catalogue of

Alexandrian and pre-Alexandrian coins found at Persepolis. Professor George G. Cameron of the University of Michigan contributed most of the translations of Babylonian and Elamite cuneiform texts and—aided at times by University of Chicago Professor Raymond A. Bowman—of Aramaic inscriptions. Cameron's studies of the Elamite tablets from the Treasury<sup>3</sup> established the basis for the chronology of the impressed seals and for the identification of the owners of the seals. Several problems in regard to pre-Achaemenid Babylonian inscriptions were solved with the aid of Oriental Institute Professors Benno Landsberger, I. J. Gelb, and A. Leo Oppenheim. Gelb, furthermore, interpreted a solitary inscription in Hittite hieroglyphic. Professor George R. Hughes of the Oriental Institute read the Egyptian hieroglyphic inscriptions. Professor Richard A. Parker of Brown University identified Egyptian symbols, and Oriental Institute Professor Helene J. Kantor aided us in tracing certain ornamental features on objects from Mesopotamia. Miss Gisela M. A. Richter of the Metropolitan Museum in New York contributed identifications of several Greek objects and patterns. Professor James B. Parsons and Mr. Grant Urry, both of the University of Chicago, made the computations which resulted in the establishment of the equivalents of ancient measures of capacity. The translations of Old Persian texts are based on Professor Roland G. Kent's final publication.<sup>4</sup> Professor Frederick R. Matson of Pennsylvania State University contributed studies of objects of glass and composition ("Egyptian blue"). Under the supervision of Professor Norman H. Nachtrieb of the University of Chicago, Mr. Lawrence J. Howell prepared spectrographic analyses of metal objects. Miss Louisa Bellinger of the Textile Museum, Washington, D.C., examined charred remnants of fabrics, and some stone specimens were identified by Mrs. Hans Ramberg at the University of Chicago.

The writer is greatly indebted to the staff of the University of Chicago Press for painstaking care in composing and printing the Persepolis volumes. Through the unstinted co-operation of Mr. Edward J. Chalifoux and the skill of his staff and workers at Photopress Incorporated the problems involved in the offset printing of all plates and folded text figures of Volume I were solved in an expert manner. The offset illustrations of the present volume have been reproduced by the same firm with equally gratifying results.

In conclusion, the writer wishes to express his gratitude to the Director of the Oriental Institute, Professor Carl H. Kraeling, for his encouraging words and deeds.

ERICH F. SCHMIDT

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1953

1. See Vol. I 4.

2. For the summary log of the expedition, see *ibid.* pp. 3-5.

3. *OIP* LXV.

4. *OPG.*



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References to classical authors are to the "Loeb Classical Library" editions.

- AI* HERZFELD, ERNST. Altpersische Inschriften (*AMI*, 1. Ergänzungsband [1938]).
- AJA* American journal of archaeology (Baltimore etc., 1885—).
- AMI* Archaeologische Mitteilungen aus Iran (Berlin, 1929–38).
- AOF* Archiv für Orientforschung (Berlin, 1923–42; Graz, 1944—).
- Bab. Babylonian cuneiform.
- CC* Cairo. Musée des antiquités égyptiennes. Catalogue général des antiquités égyptiennes du Musée du Caire (Cairo, 1901—).
- El. Elamite cuneiform.
- IAE* HERZFELD, ERNST. Iran in the ancient East (London and New York, 1941).
- JAOs* American Oriental Society. Journal (New Haven etc., 1849—).
- JNES* Journal of Near Eastern studies (Chicago, 1942—).
- KA* WEISSBACH, F. H. Die Keilinschriften der Achämeniden (Vorderasiatische Bibliothek, 3. Stück [Leipzig, 1911]).
- MDOG* Deutsche Orient-Gesellschaft, *Berlin*. Mitteilungen (Berlin, 1899—).
- MDP* France. Délégation en Perse. Mémoires (Vols. I–XIII; Paris, 1900–1912).  
France. Mission archéologique de Susiane. Mémoires (Vol. XIV; Paris, 1913).  
France. Mission archéologique de Perse. Publications (Vol. XV; Paris, 1914).  
France. Mission archéologique de Perse. Mémoires (Vols. XVI–XXVIII; Paris, 1921–39).  
France. Mission archéologique en Iran. Mémoires (Vols. XXIX—; Paris, 1943—).
- MJ* Pennsylvania. University. University Museum. The museum journal (Philadelphia, 1910–35).
- MVAG* Vorderasiatisch-ägyptische Gesellschaft, *Berlin*. Mitteilungen (Berlin, 1896–1908; Leipzig, 1909–44).
- OIC* No. 21 SCHMIDT, ERICH F. The Treasury of Persepolis and other discoveries in the homeland of the Achaemenians (Chicago. University. The Oriental Institute. Oriental Institute communications, No. 21 [Chicago, 1939]).
- OIP* Chicago. University. The Oriental Institute. Oriental Institute publications (Chicago, 1924—).
- OIP* XXII OSTEN, H. H. VON DER. Ancient oriental seals in the collection of Mr. Edward T. Newell (1934).
- OIP* LXV CAMERON, GEORGE G. Persepolis Treasury tablets (1948).
- OIP* LXVIII SCHMIDT, ERICH F. Persepolis. I. Structures, reliefs, inscriptions (1953). Cited throughout as "Vol. I."
- OLZ* Orientalistische Literaturzeitung (Berlin, 1898–1908; Leipzig, 1909—).
- OP Old Persian cuneiform.
- OPG* KENT, ROLAND G. Old Persian: Grammar, texts, lexicon (American oriental series XXXIII [2d ed.; New Haven, 1953]).
- Pope, *Survey* POPE, ARTHUR UPHAM (*editor*). A survey of Persian art from prehistoric times to the present (6 vols.; London and New York, 1938–39).
- RA* Revue d'assyriologie et d'archéologie orientale (Paris, 1884—).

## LIST OF ABBREVIATIONS

- RT* Recueil de travaux relatifs à la philologie et à l'archéologie égyptiennes et assyriennes (Paris, 1870–1923).
- SAOC* Chicago. University. The Oriental Institute. Studies in ancient oriental civilization (Chicago, 1931—).
- SAOC* No. 5 HERZFELD, ERNST. A new inscription of Xerxes from Persepolis (1932).
- SAOC* No. 24 PARKER, RICHARD A., and DUBBERSTEIN, WALDO H. Babylonian chronology 626 B.C.–A.D. 45 (2d ed.; 1946).
- Vol. I See *OIP* LXVIII.
- WVDOG* Deutsche Orient-Gesellschaft, *Berlin*. Wissenschaftliche Veröffentlichungen (Leipzig, 1900–1941; Berlin, 1954—).
- ZA* Zeitschrift für Assyriologie und verwandte Gebiete (Vols. I–XLIV; Leipzig etc., 1886–1938).  
Zeitschrift für Assyriologie und vorderasiatische Archäologie (Vols. XLV—; Berlin, 1939—).
- ZAS* Zeitschrift für ägyptische Sprache und Altertumskunde (Leipzig, 1863–1943; Berlin, 1954—).

I

*OBJECTS FROM THE PERSEPOLIS TERRACE*







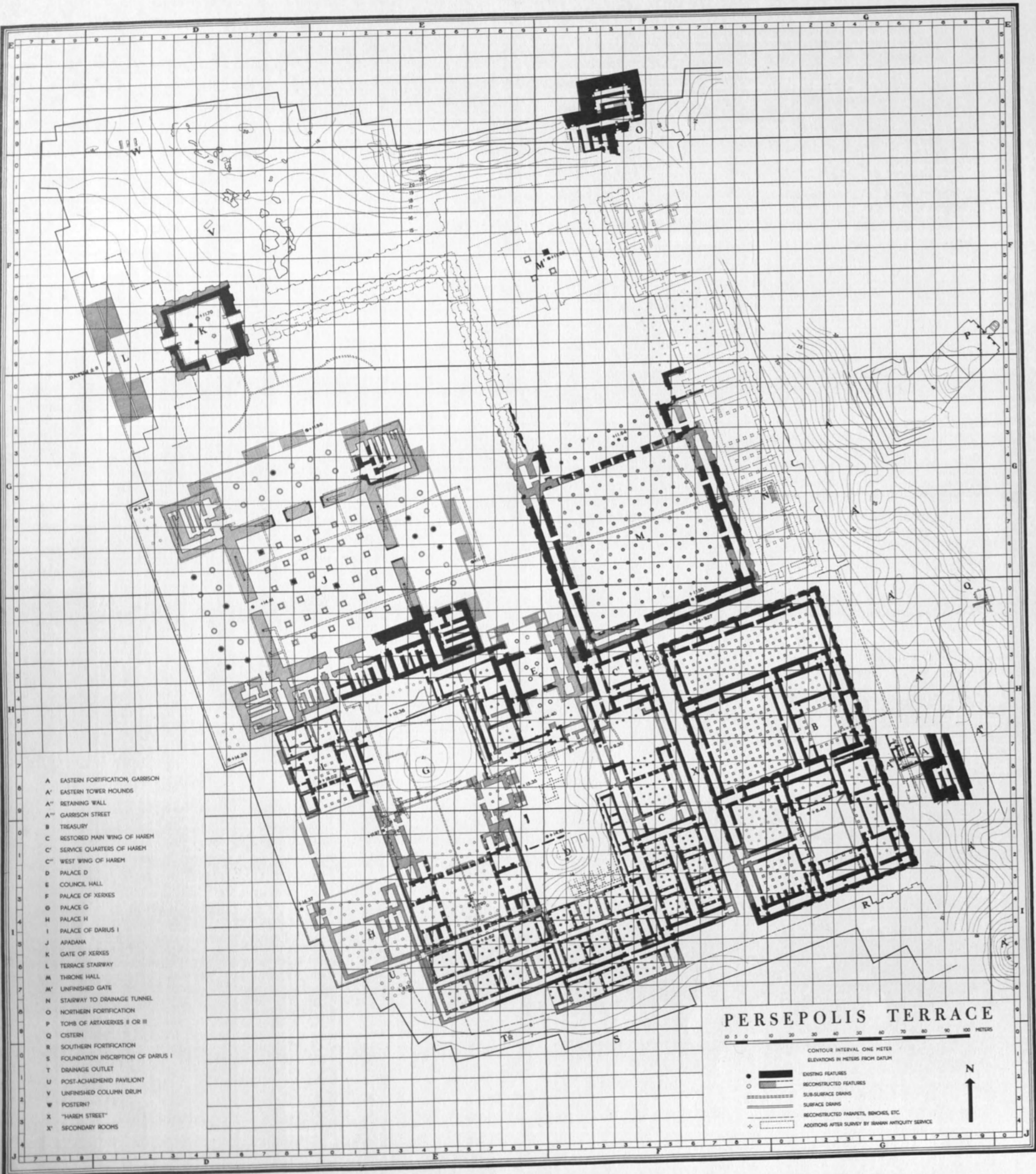


FIG. 1. RECONSTRUCTED PLAN OF PERSEPOLIS TERRACE, WITH EXCAVATION GRID. ORIGINAL SURVEYS BY THE EXPEDITION ARCHITECTS (1930-39)  
 ADDITIONS (in broken lines, unshaded) BY THE IRANIAN ANTIQUITY SERVICE. FINAL DRAWING BY A. R. HAUSER

## INTRODUCTION

THE Terrace of Persepolis is an almost purely Achaemenid site. It was founded by Darius I between 520 and 510 B.C.<sup>1</sup> and destroyed by Alexander in 330 B.C. The remnants of the Apadana, the Throne Hall, and the Treasury show unmistakable marks of the catastrophic end—scorched walls and floors, spalled and discolored columns and other stone parts, piles of charred remains of combustible substances. These clues suggest that the most imposing public structures of the site perished in one great conflagration or, conceivably, in several fires set within a short span of time. Fortunately, the debris of collapsing roofs and walls sealed the objects rejected or lost during the pillage of the site. Thus, the year 330 B.C. is the minimum date of all but a few specimens found on the Terrace and discussed in this volume.

As to post-Achaemenid remains, we have pointed out some instances of sporadic, undoubtedly rather transient occupation, such as Palace H (composed of parts of earlier structures),<sup>2</sup> an adjoining “pavilion,”<sup>3</sup> and remnants of a few walls in the southern courtyard of the Apadana and above the debris of the Treasury.<sup>4</sup> We have shown, further, graffiti of a Sasanian prince<sup>5</sup> and inscriptions commemorating the visits of Sasanian and Moslem potentates.<sup>6</sup> Objects of the post-Achaemenid era include a number of coins,<sup>7</sup> some potsherds, and perhaps a few doubtful specimens to which we shall refer in the descriptions to follow.

In tracing the chronology of our Persepolis finds prior to 330 B.C., we were aided at times by inscriptions. Certain sealings, wall pegs, foundation slabs, vessels, and weights can be definitely assigned to the reigns of the Achaemenid rulers whose names appear in their inscriptions. Again, there are numerous pre-Achaemenid objects, some bearing the names of Egyptian pharaohs, others mentioning monarchs of Assyria and Babylonia, and one representing the former property of a Syrian Hittite king. Furthermore, most coins from Persepolis antedate the foundation of the site, and some of the cylinder seals found in its debris were carved many centuries prior to the Achaemenid era. Thus, where other clues—such as characteristic designs or forms—are lacking, it is possible that some objects classified by us as Achaemenian may actually be pieces of booty brought to Persepolis from the despoiled capitals of earlier (and equally predatory) rulers. Nevertheless, in attempting to determine a more definite chronology for objects of doubtful age one will have to consider the fact—so well illustrated by the tribute procession of the Apadana—that artists and artisans of many distant lands under the sway

of the Achaemenids contributed distinctive products of their skill to the kings' Persepolis treasure.

The title of the present volume indicates that most of our finds are remnants of the contents of the royal storehouse. The treasures and supplies once gathered in this building of almost a hundred divisions undoubtedly reflected the nature and to some extent the disposition of the stores assembled in all treasuries of the ancient East. Since to our knowledge no other storehouse for the yields of taxation, gifts, tribute, and spoil has been completely uncovered nor fully described, we have thoroughly discussed the architecture of the Persepolis Treasury in Volume I and noted the objects which we found associated in its subdivisions.<sup>8</sup> In the present volume these objects are grouped according to classes of similar or related specimens, but the Index of Field Numbers (pp. 141 ff.) co-ordinates the information contained in both volumes.

The find-spots—specified, whenever ascertainable, according to plot (see below) and structural unit—of the objects which occurred in the debris of the completely excavated Treasury can be located in the present volume on any of the five schematized plans showing the particularly instructive distribution of cuneiform tablets (Fig. 2), clay labels (Fig. 3), ritual objects of green chert (Fig. 6), royal tableware (Fig. 17), and martial equipment (Fig. 19).<sup>9</sup>

Additional, though usually much sparser, yields of objects resulted from partial excavations in or near other Persepolis structures<sup>10</sup> identified on the Terrace plan (Fig. 11), which is marked with our grid of survey quadrants (100 × 100 m.) and excavation plots (10 × 10 m.). In all instances the architectural descriptions in Volume I briefly refer to the objects associated in the respective structural units. The buildings—in addition to the Treasury—mentioned in the present volume in connection with the find-spots of objects are plotted on the following plans of Volume I:

Fig. 31. Apadana. Schema of excavation plots in northern courtyard.

Fig. 32. Apadana. Excavated southern part.

Fig. 51. Council Hall. Extant remains (see also Fig. 32).

Fig. 58. Throne Hall. Extant remains (for excavation plots see Vol. II, Fig. 1).

Fig. 82. Eastern fortification and garrison quarters. Excavated portion.

Fig. 103. Harem of Xerxes. Main wing (including northern service quarters).

Fig. 104. Harem of Xerxes. Excavation plan of western apartments of west wing.

Fig. 109 C. Secondary rooms in “Harem Street.”

Fig. 113 A. Palace D. Excavation plan of remnants.

8. See Vol. I 156–200.

9. See also Treasury plans *ibid.* Figs. 63–65.

10. We include also some objects uncovered by Herzfeld prior to 1935 and designated accordingly in each case. Finds published by him elsewhere are referred to at the proper points.

11. This plan includes additional surveys of architectural remains uncovered by the Iranian Antiquity Service, namely drainage canals north of the Apadana and rooms beneath and north of Palace D.

1. See Vol. I 39 ff.

2. *Ibid.* pp. 279–82.

3. *Ibid.* p. 264.

4. *Ibid.* pp. 77 and 211, n. 76.

5. *Ibid.* Pl. 199 and p. 258.

6. *Ibid.* Pls. 157–58 and p. 223, n. 11.

7. For coins of Alexandrian type see p. 110; later coins are to be published by Dr. George C. Miles.

## SEALS AND SEAL IMPRESSIONS

## SEAL IMPRESSIONS

## OBJECTS BEARING IMPRESSIONS

We were fortunate to uncover a considerable number of objects impressed with seals of the early Persepolitan phase of the Achaemenian period. Our collection increases the range of known seal designs of that time, and it will help to date many of them more accurately. A number of these sealings, discovered within a limited area of a purely Achaemenian building, namely the royal Treasury, are affixed to accurately datable and informative documents of the time of Darius I, Xerxes, and Artaxerxes I. This circumstance permits interpretations which cannot be gained from seals alone.

At Persepolis actually two groups of material with seal impressions were discovered. In this study we have to omit the large body of clay tablets found by Herzfeld in a section of the northern fortification near the northeast corner of the Terrace. The technical preparations for a study of this material are incomplete, and many of the tablets have not yet been read. The present chapter deals solely with the second body of material, uncovered in the Persepolis Treasury.

Seal impressions occur on clay tablets with Elamite cuneiform inscriptions<sup>1</sup> and on uninscribed clay labels. The sealings found on the Treasury tablets are without exception those of cylinder seals, but the writer noticed some stamp seal impressions on tablets of the fortification group. Labels bear impressions of cylinder seals, stamp seals, and signet rings, often combined on the same specimen.

Altogether we distinguished impressions of seventy-seven seals, which are illustrated on Plates 3–14. Numbers 1 to 43 are sealings of cylinders impressed on tablets and labels. Numbers 44 to 77 are impressions of stamp seals and signet rings found on labels only.<sup>2</sup>

## CLAY TABLETS

## TECHNICAL DATA

In the Persepolis Treasury we uncovered 198 tablets and large fragments of such, in addition to 548 smaller fragments and a number of small chips and flakes. Almost all the tablets have the form of a flattened incomplete oval. As a rule the seal is impressed on the flat, cut-off end, but in a few instances the same sealing is repeated on other parts of the tablet (see Pl. 3, PT4 331, and Pl. 6, PT4 682).

1. This chapter was essentially complete when George G. Cameron published his *Persepolis Treasury Tablets* (OIP LXV [1948]). Our data derived from the tablet texts are based on translations which Cameron had cordially put at our disposal, but the publication of his important work enabled us to utilize his final conclusions.

2. Prior to the final revision of this chapter we used the term "seal type" (see *ibid.* pp. 55–58) in designating the seal impressions on tablets and labels. We now prefer to call the impressions "seals" (Nos. 1–77), but it must be kept in mind that in the sections dealing with seal impressions our term designates primarily the seal patterns, for we discovered none of the actual sealing devices used on tablets and labels.

In many cases we noticed a small hole at either end of the impression, suggesting a perforation, which seemed to extend through the seal end of the tablet.<sup>3</sup> In order to determine the purpose of this feature Cameron opened a tablet fragment and found that the two holes, filled with remains of string, extended obliquely into the body of the tablet. The ends of the string originally protruded from the tablet. It appears, therefore, that such tablets were strung on cords, to be attached to other objects or to be filed in this manner. Parallel furrows—apparently guide lines of the scribe—often corrugate the surface (see e.g. Pl. 1, PT6 75). The oval Treasury tablets range in length from 28 to 105 mm., in breadth from 24 to 87 mm., and in thickness from 13 to 36 mm.<sup>4</sup>

An atypical rectangular tablet<sup>5</sup> without sealing or string holes is shown on Plate 1 (PT4 808). The character of the message and its language (Bab.) differ from the rest of the Treasury records, and there is little doubt that it originated elsewhere. The tablet measures 106 × 71 × 28 mm. Two or three fragments possibly of the same unusual tablet form occurred, but Cameron informs the writer that with the sole exception of PT4 808 all Treasury tablets, including these fragments of angular form, are inscribed in Elamite.

All the Treasury records under consideration have the appearance of baked tablets, but discolorations show in many cases the effect of the violent conflagration which destroyed the building. This fire would have baked sun-dried tablets in the same manner as it hardened the sun-dried bricks of certain walls to a depth of several centimeters and baked the clay labels described below. On a few tablets we noticed traces of melted iron which destroyed parts of the texts. At any rate, the accidental firing of the tablet clay fortunately preserved details of texts and seals which otherwise might have been lost.

The tablet paste is of fine texture in shades of gray and brown. The surface color ranged originally from light brown to dark brown, including shades of yellowish brown and red-brown. Discolored specimens of gray or black and combinations of brown and gray or black surface colors are frequent.

## FIND-CONDITIONS

Figure 2 shows the distribution of the cuneiform tablets which occurred in the royal Treasury. We mentioned above that Herzfeld uncovered a great number of tablets in the northeastern part of the Terrace fortification. Further records of this kind may of course be expected in other, unexcavated sections of the fortification along the northern and eastern edges of the site. A small number of uninscribed and unbaked clay pieces of tablet form oc-

3. See *ibid.* pp. 25 ff.

4. See *ibid.* pp. 213 f. for list of tablets and their dimensions.

5. *Ibid.* No. 85, pp. 200–203.



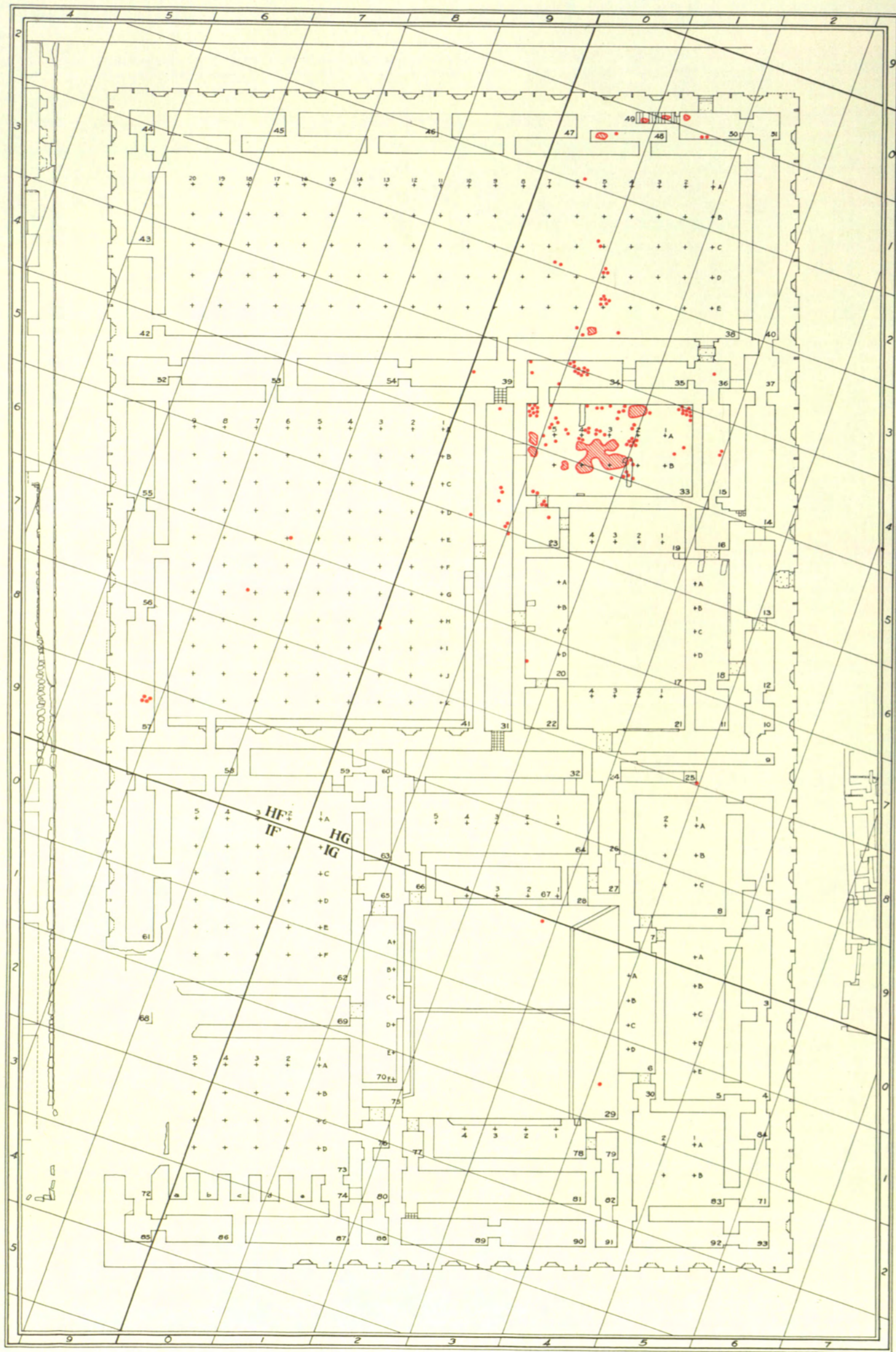


FIG. 2. FIND-SPOTS OF CUNEIFORM TABLETS IN TREASURY. SCALE, 1:500

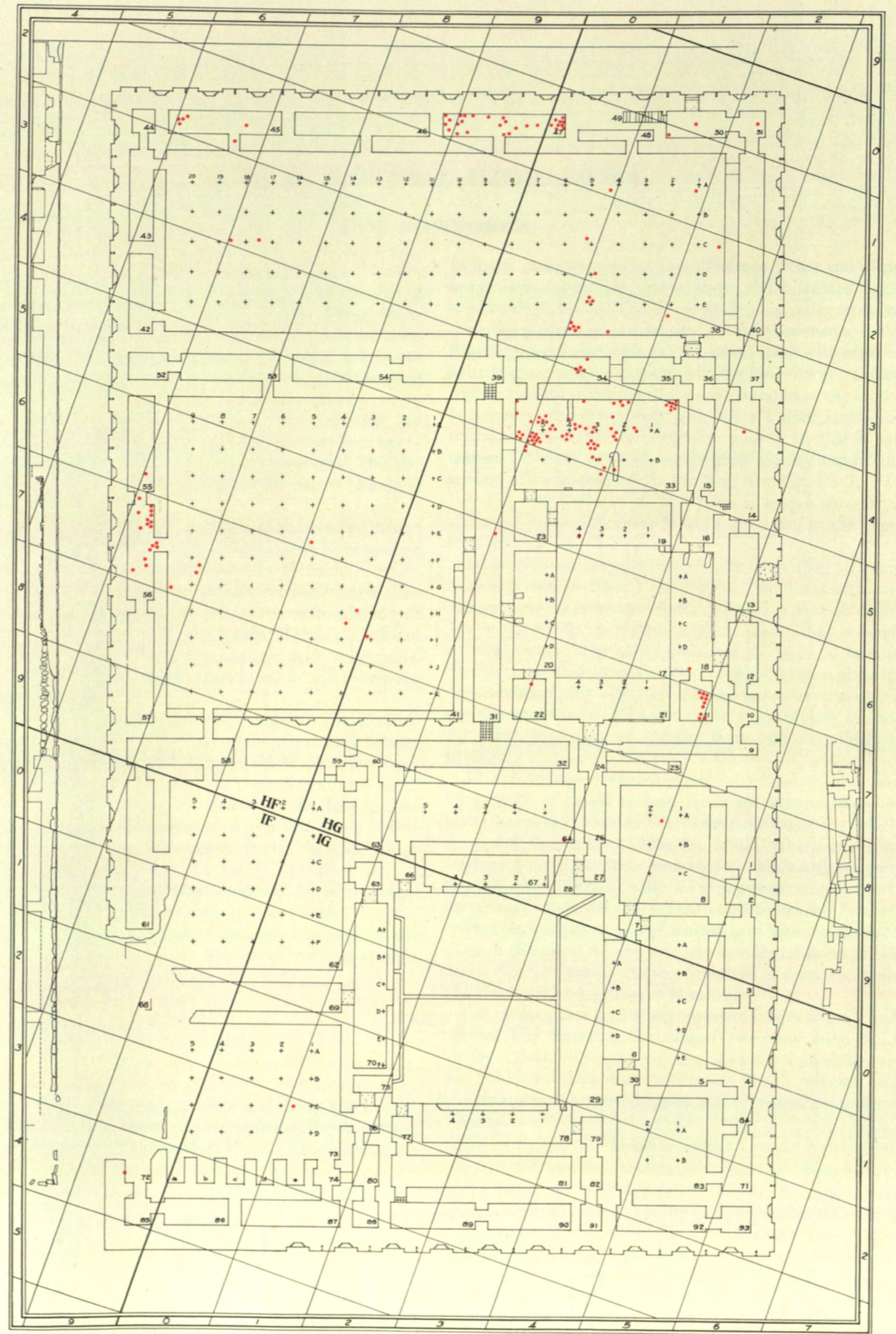


FIG. 3. FIND-SPOTS OF CLAY LABELS IN TREASURY. SCALE, 1:500

curred in the eastern fortification complex.<sup>6</sup> Thus, the fortification group, which remains to be studied, and our Treasury group, with which we are here dealing, are so far the only collections of inscribed clay tablets uncovered at Persepolis.

The Treasury find-spot plan (Fig. 2) shows at a glance that most of the tablets were clustered at one spot, namely in Room 33.<sup>7</sup> Here we found 656 tablets and tablet fragments, of which 602 could be accurately located as to their position within the room. Room 34 contained fourteen tablets and fragments, whereas thirty-five occurred in Hall 38. The distribution of the tablets in the latter hall is significant. During the burning and collapse of the Treasury apparently they spilled from the congested area to the south across Hall 38 along a strip measuring about 8 meters in width.<sup>8</sup> The location of tablets in this hall is paralleled by the distribution of clay labels (see Fig. 3). Our assumption is supported by the complete absence of tablets in other parts of the extensive Hall 38 and by the existence of a burned patch on the south wall of the hall, exactly at the point in Plot HG 31<sup>9</sup> where tablets and labels were clustered most densely. The walls of Hall 38 are scorched only at spots where burning beams and the like must have fallen from adjacent rooms whose walls were reddened and blackened by the conflagration.<sup>10</sup> The tablets of Hall 38 were found at depths ranging from the floor to about 1.50 m. above it. In Room 34 one tablet only lay on the floor, near the doorway to Room 33. The others occurred in the refuse filling of the room .50 to 1.50 m. above the floor.

The majority of the tablets clustered in the central part of Room 33 were found in a burned layer 45 to 75 cm. above the floor. Many, however, occurred on the floor and in the debris filling the first half meter above it. For instance, twenty-four tablets lay on the floor near the center of the north wall, but two tablets from the same part of Room 33 were 1.60 m. above the floor. Furthermore, near the center of the west wall, in the southeast corner of Plot HG 40, fifteen tablets were found 1.00–1.50 m. above the floor. Two tablets, finally, occurred at the northwest corner of the southern doorway at 1.80 and 2.00 m. respectively above the floor of this room.

Obviously, objects once kept on the floor or slightly above it would not have fallen into neighboring rooms when the walls and the roof collapsed. The tablets, and as we shall see the labels as well, which apparently had spilled from Room 33 across Room 34 into Hall 38 must have been located originally at points considerably above the floor level. They could have been kept on shelves, and labels may have been attached to goods piled high. However, the difference in find-levels in Room 33, combined with the scattering of objects from this room as a focal point, could most easily be explained by the existence of a second story above this part of the Treasury, where a number of tablets and labels had been located. Structural debris seems to support such an assumption. We uncovered two wall fragments on the floor of Room 33. Neither

fragment showed distinct traces of the conflagration, which left pronounced marks on the walls still standing and on the very floor strips underneath the two wall fragments. They must have fallen to the floor after the violence of the fire had decreased. If they had formed upper courses of walls of Room 33, we should expect them to show roughly the same marks of burning as the lower parts which remained standing. It is plausible to assume, therefore, that these sections of walls formed parts of a second-story room built above Room 33.<sup>11</sup>

As to the few tablets found in other parts of the spacious Treasury, some occurred in the immediate vicinity of Room 33. They were perhaps dispersed from Room 33 in the same manner as the specimens thrown northward during the collapse of the room. A few fairly large fragments occurred in Hall 41. There were four fragments in Room 57, two fragments in Court 29, and one tablet on Ramp 25.

In the northeast corner of the Treasury we found some clusters of tablet fragments and small chips. One such group occurred in the narrow Room 48, which presumably was below the upper (missing) flight of Stairway 49.<sup>12</sup> Above the lower flight of Stairway 49 two clusters of tablet pieces were uncovered. The upper group (northeast corner of Plot HG 10) was 2.30 m. above the floor level of Room 50. On the floor of the latter room, which is connected with the outside through the northern doorway of the Treasury, lay another group of small tablet fragments, and two pieces were near the south wall.

In describing the Treasury we suggested that the tablets found on Ramp 25, on Stairway 49, in Room 48, and in Vestibule 50 may have been accidentally associated with more desirable loot and thus carried up the ramp and across the roof to the northern exit. On this occasion some tablets may have been lost or discarded at the points mentioned. We actually found small hoards of gold objects at the two bottlenecks, namely on the ramp and on the stairway.<sup>13</sup> Some of the tablet fragments found above the floor of Hall 38 (see above)—in a row pointing roughly toward the northern exit—may have been lost or discarded in the same manner while being carried across the roof of the building.

#### CLAY LABELS

#### TECHNICAL DATA

With the exception of a label fragment found in the southeast tower of the Apadana, all the remaining 199 clay labels occurred in the debris of the Treasury. When the building was despoiled by Alexander, these labels were torn from the objects to which they were attached, or the labeled objects were left with things found useless, to be burned during the subsequent conflagration. The purpose of the labels is indicated by the impressed marks and charred remains of cords and by the seals, presumably impressed by officials who supervised the packing and storing of the objects to which the labels were affixed. It is possible, furthermore, that certain labels had encircled records of parchment or papyrus in the manner explained by

6. See Vol. I 209.

7. See *ibid.* p. 174.

8. For an alternative or supplementary explanation of the find-circumstances see below.

9. The excavation plots covering the Treasury are marked on all find-spot plans (e.g. Figs. 2–3). For explanation of our grid system see Vol. I xxix.

10. See *ibid.* Fig. 64.

11. See *ibid.* pp. 173 f. To judge by a letter of Herzfeld to the Oriental Institute, tablets of the fortification group (see p. 4) too had once been stored in an upper story, since many were found "high above the remnants of stairs."

12. One fragment from Room 48 (PT6 50; seal end lacking), bears the earliest date on the Elamite tablets of the Treasury series, namely "of the 30th year" (of Darius I's reign), according to Cameron (*OIP* LXV, No. 1a, p. 85).

13. See Vol. I 186 f.

Cameron.<sup>14</sup> Herzfeld had previously suggested, by letter, that labels found with the fortification tablets had been used in this manner.

We mentioned above that some labels bear impressions of three sealing devices, namely cylinders, stamps, and signet rings. While there are many specimens with a single seal impression, or with several impressions of the same seal, there are numerous labels sealed by several persons. Four to six seals were frequently impressed on the same label (see Pl. 2, PT4 619 and PT4 704), and one specimen has seven different sealings.

Samples of the principal label forms are shown on Plate 2. Many specimens are simply irregular polygonal or rounded lumps of clay; but roughly circular disks with plano-convex cross section frequently occur (see Pl. 2, PT3 407, PT4 619, PT4 704). There are also concavo-convex labels, which had been stuck to curved objects (see Pl. 2, PT4 950). Other specimens have roughly globular, semiglobular, pyramidal, oval, elliptical, cylindrical, triangular, oblong rectangular, and pentagonal shapes. One group of labels, found almost exclusively in some of the subsidiary storerooms of Halls 38 and 41, comprises specimens of rather uniform oblong shape with irregular rectangular or approximately circular cross section (see Pl. 2, PT6 3, PT6 62; Pl. 4, PT6 215, PT6 12; Pl. 5, PT6 34, PT6 65, PT6 300; Pl. 8, PT6 179; Pl. 9, PT6 62; Pl. 10, PT6 179, PT6 40). Many labels of this group have two lengthwise perforations, but single perforations prevail. In Room 11, on the other hand, small irregular disks only occurred (see Pl. 2, PT3 407 and p. 7; also Pl. 7, PT3 363, PT3 384; Pl. 11, PT3 383; Pl. 14, PT3 386). Such groupings suggest that different types of goods had been stored in the various sections of the Treasury just mentioned, and that label shapes were dependent to some extent on the character of the stored material. In a few instances we noticed impressions of matting or of cloth on the bottoms of labels. As to approximate sizes, the smallest specimen measures 18 mm. in length, the largest 85 mm. The thickness of the labels varies from 5 to 35 mm.

Most Treasury labels were accidentally baked and hardened—in the same manner as the tablets (see p. 4)—by the fire which destroyed the building. This is proved by the fact that the labels had to be soft while being attached to stored goods or records and while being marked with the seal or seals of the officials. Once the label was attached, baking was of course out of the question.<sup>15</sup>

Many labels had simply been pressed upon the cords which tied bundles or the like. Often spots where strings crossed were chosen, as shown by cross-shaped impressions on the bottoms of certain labels (see Pl. 2, PT4 619). In other instances single cord impressions are found. In many

14. *OIP* LXV 27-31.

15. In reference to baked labels with impressions of "royal" seals and seals of officials, found in a room of a storehouse on Büyükkale of Boğazköy, Güterbock assumed that the labels were baked for storage in the archives after receipt of the objects to which they were attached; see H. G. Güterbock, "Das Siegel bei den Hethitern," *Studia et documenta ad iura Orientis antiqui pertinentia* II (Leiden, 1939) 26. For illustrations of these labels see Kurt Bittel and H. G. Güterbock, *Boğazköy* (Preussische Akademie der Wissenschaften, Berlin, Philos.-hist. Klasse, "Abhandlungen," Jahrgang 1935, No. 1 [Berlin, 1935]) Pls. 24 ff. However, the excavation report states clearly that the room in which the labels were found had been destroyed—together with other parts of the building—by a violent conflagration (see Bittel in *MDOG* No. 75 [1937] p. 29 and Fig. 7). It is possible, therefore, that these Boğazköy labels too had originally been unbaked but were scorched and hardened during the conflagration.

cases labels had been strung on cords, the charred remains of which are often preserved in the perforations.

The paste of the labels is apparently identical with the clay used for the cuneiform tablets. It is of fine texture and ranges in color from black to gray and brown. The surface is usually gray or black, discolored by the conflagration frequently referred to. Completely brown or yellowish-brown surfaces are rare; but many specimens show combinations of brown with gray or black patches, caused by burning, in the same manner as the cuneiform tablets described above.

#### FIND-CONDITIONS

The distribution of labels (Fig. 3) and that of tablets (Fig. 2) show interesting parallels. Labels too were most densely concentrated in Room 33 (72 specimens, including 3 of doubtful find-spot), where by far the greatest number of tablets occurred. There is exactly the same pattern of "spilled" labels from Room 33 northward across Room 34 and into Hall 38, even to the extent that clusters of both categories of objects coincide on the find-spot plans. This cannot be accidental. We must assume that in Room 33 labels had been attached to groups or strings of tablets (see p. 4), or that objects to which labels had been affixed—perhaps records on material other than clay—were kept at exactly the same spots as the tablets.

Many labels occurred on the floor of Room 33, such as the cluster in the northeast corner, whereas others were found in debris considerably above the floor level. For instance, the labels seemingly clustered at the center of the west wall were scattered from .50 to about 1.50 m. above the floor. The four labels located in the center of Room 34 occurred at heights of about 1.20 to 1.70 m. above the floor. They had presumably fallen on top of debris from an elevated point in Room 33 in the direction of the strip of single and clustered labels in Hall 38. In the latter hall the labels which could be accurately plotted as to find-level occurred from the floor to about a meter above it, roughly paralleling the find-conditions of the tablets. Thus the find-levels, combined with the distribution of many labels in Rooms 33, 34, and Hall 38, support our deductions with regard to elevated storage places in Room 33—perhaps a second story—suggested by the find-circumstances of the tablets (see p. 5). Again, some labels may have been lost on the roof, as explained on page 5.

Figure 3 shows that further concentrations of labels occurred—at various heights above the floors—in the following parts of the Treasury:

Room	No. of Specimens	No. of Specimens from Doubtful Find-Spots <sup>16</sup>
11	10	3
45	6	5
47	29	2
56	17	2

While the close association of labels and tablets in Rooms 33, 34, and the east part of Hall 38 appears to justify Cameron's theory that the Treasury labels had been attached to records of perishable material which were tied to the tablets,<sup>17</sup> the complete absence of tablets in the four rooms listed above, as well as the shapes of many labels and their string impressions, show that many of these seal-impressed clay objects had been attached to stores of various kinds. We do not know the character of the treas-

16. But found in the rooms indicated.

17. *OIP* LXV 30 f.



ures or equipment. Nevertheless, it is interesting to note that certain rooms contained labels of a specific form absent in other parts of the Treasury. All labels found in Rooms 45 and 56, as well as the single specimen from Room 55, have the oblong shape illustrated by PT6 3 and PT6 62 on Plate 2. In Room 47 all labels but one (disk) have the same oblong form. In the western part of Hall 38 and in the southern half of Hall 41 we found labels of this oblong shape, which had probably once been attached to stores kept in Rooms 45 and 56 and dragged to the adjoining halls during the sacking of the Treasury. None of the numerous labels found in Room 33 or spilled northward into Room 34 and the eastern part of Hall 38 have this oblong form. Most specimens of this group are irregular clay lumps, many of which have multiple seal impressions.

All labels from Room 11 are roughly circular with plano-convex or biconvex cross section, each label bearing one seal impression only. All six labels with the impression of seal No. 20 (see p. 26 and Pl. 7) occurred in this room and (one) in Portico 18 directly north of the doorway to Room 11. The other labels from Room 11 bear impressions of seals Nos. 5 (with Xerxes' inscription), 37, and 73 (see pp. 20–21, 32, 40 and Pls. 4, 11, 14). There are no clues for dating seals Nos. 20 and 73 through direct association on the same label with a datable seal (cf. p. 17 and Table II). Seal No. 20 may have been cut during the reign of Darius, as suggested perhaps by the name of its owner, Datames (see p. 16, n. 96, but cf. p. 26, n. 122). We are convinced, however, that all *labels* found in Room 11 are roughly contemporaneous and dated by seal No. 5 (see pp. 16 ff.).

Some labels were scattered over various other parts of the Treasury. A few occurred near the northern exit of the building. One of these specimens (impressed with seals Nos. 5 and 61), from Room 51, has the oblong shape referred to above. The large treasure halls, 38 and 41, were never used for the storing of cuneiform tablets or for the storing of objects to which clay labels were attached. The tablets and labels there found came from neighboring units of the building, as explained above.

#### IMPRESSIONS OF CYLINDER SEALS

##### SUBJECTS OF SEAL PATTERNS

##### HERO TRIUMPHANT

(Seals 1–13: Pls. 3–5, pp. 18–24)

*The hero.*—The most impressive and also the most distinguished seals show the hero (the king?) as a herculean character and victor over composite monsters or the king of beasts. Seals of this group only—within the Treasury series—bear royal names,<sup>18</sup> engraved beside the pictorial part of the seal pattern (see below). Usually the hero appears once, holding or strangling two identical monsters or lions placed symmetrically one at either side of him. However, on seal No. 8 the hero is duplicated stabbing a centrally located pair of crossing identical lions, and seal No. 1 shows him attacked by one monster. While there is no doubt about the hero as the intended victor, the issue is never shown decided by the death of the antagonist monster or lion. In several instances the hero and his victim or victims stand on antithetic identical pedestal monsters—winged man-bulls or winged lions (Nos. 1, 3, 6; cf. also Nos. 14–15 of the following group). A ground line is shown on seal No. 10.

18. For other "royal" seals of the Achaemenian period see pp. 10 f. and 13.

The hero is always a Persian, dressed in the candies and wearing, with one exception (No. 1, bareheaded<sup>19</sup>), the tiara with dentate upper edge. On seal No. 1 the candies is pulled up to the knee of one leg, but in all other cases it is only slightly tucked, resulting in a central lengthwise fold. The hero's head and feet are always shown in full profile, whereas the body is in front view, or in one case (No. 8) in half profile. The head is usually pictured in right profile. On two "Darius" seals (Nos. 1–2) the left profile is shown. The hero is always bearded, and his hair is bunched at the back of his neck.

As far as we know, on all pertinent Achaemenian reliefs—including that of Behistun<sup>20</sup>—the long square-tipped beard is a distinct attribute of royalty, contrasting with the short pointed beard of persons below royal rank. We may assume, therefore, that the long-bearded triumphant hero of the group under consideration represents the king. In most cases it is doubtful, however, whether the beard tip is squared. Seal No. 9 is an exception. Here the hero's beard is definitely short and pointed, as are the beards of the Susian(?) lancers on seal No. 24 (Pl. 8). On the other hand, the seal of Aspathines (No. 14; Pl. 6), whose name is inscribed thereon, pictures two Persian worshipers with long "royal" beard. One of two other Persians worshiping at the altar (No. 22; Pl. 7) also wears a long, and in this case definitely square-tipped, beard. On seal No. 26 (Pl. 8) the seated king(?) and the Persian standing before him are both pictured with the beard of royalty. Even the Janus-faced genie of seal No. 19 (Pl. 6) has a beard of royal length. The beards of the man-bulls shown on some seals (e.g. Nos. 4–5) are as long as those of the heroes of the same patterns. It must be remembered, however, that at Persepolis the man-bull capitals, the man-bulls at Xerxes' Gate, and the sphinxes on the palace façades—images of benevolent supernatural beings—also are represented with stately beards. In our seal designs, as on monumental sculpture, Ahuramazda too is shown long-bearded as a rule (see No. 17; Pl. 6). Seal No. 16 seems to be an exception, unless the shortness of the beard here shown was caused by distortion.

The preceding examples indicate that we cannot simply identify all long-bearded Persians of the seal designs as the king or other persons of royal rank, although in most instances royalty may actually be represented. The identification of the hero triumphant as the ruler is particularly plausible considering the fact that seven seals of this design group bear royal names (see below). The seal-cutters failed to emphasize another attribute of royalty: the tall cidaris, which in monumental sculpture is usually distinguished from the shorter headdress of Persians below royal rank.<sup>21</sup> Again, the hero combating animals or monsters in certain doorway reliefs of Persepolis wears a fillet instead of the cidaris.<sup>22</sup>

*The winged disk symbol.*—Above the hero hovers in many instances the protective winged symbol. Ahuramazda's bust, oriented in the same manner as the upper part of the hero, rises in several cases from the central circle. Seal No. 8, however, shows the winged symbol centered, for the sake of symmetry, above the leonine antagonists.

19. Or wearing a narrow fillet?

20. See L. W. King and R. C. Thompson, *Sculptures and Inscription of Darius the Great on the Rock of Behistun in Persia* (London, 1907) Pl. XIV.

21. See Vol. I, e.g. Pl. 121.

22. See *ibid.* e.g. p. 136 and Pls. 114–17.

*The victims.*—Among the hero's victims the lion only is shown at times without monstrous additions or changes (Nos. 3, 6, 8, 10). The king of beasts is considered a worthy foe, even without supernatural paraphernalia. In other cases, however, the lion is provided with wings (Nos. 2, 9, and possibly 12; see also the pedestal lion of No. 3). Horns and talons are added on seal No. 2;<sup>23</sup> a horn only is shown on No. 9. The griffin of seal No. 1 also may be horned. Winged bulls (Nos. 7, 11), winged man-bulls (Nos. 4–5; see also the pedestal monsters of Nos. 1 and 6), and finally a man-ibex (No. 13) are other victims of the hero.<sup>24</sup> The wings of the monsters have in most cases the typically Achaemenian upcurl of the tips.

*The palm tree.*—The date palm, usually in fruit, is shown either once or twice on all those seal impressions which bear a royal name. It is significant, perhaps, that not the typical ornamental tree of the Persian homeland was chosen—namely the cypress, which is pictured in the Apadana reliefs of Persepolis—but rather the useful palm tree, which gave sustenance to the lowland subjects of the king.<sup>24a</sup>

*The royal names in the seal inscriptions.*—We mentioned above that within the Treasury collection of sealings royal names are combined solely with patterns showing the hero triumphant as principal figure. The king's name is engraved in a subdivided panel beside the pictorial part of the seal design and oriented transversely to the latter. The seals bearing the name Darius (Darius I; see p. 16) are trilingual (Nos. 1–3). In Old Persian, Elamite, and Babylonian—the usual sequence of languages of the Achaemenian relief inscriptions—the preserved part of the legend reads: "I (am) Darius," on the seals themselves perhaps followed by "the King" or "the Great King." Three of the seals bearing the name of Xerxes, Darius' son and successor, are monolingual. The Old Persian inscriptions state: "Xerxes the Great King" (No. 5) and "I (am) Xerxes the King" (No. 6 and, as far as preserved, No. 8, though the latter may have read "I (am) Xerxes the Great King"). The fragmentary trilingual inscription of seal No. 7 mentions "Xerxes," presumably followed by "the King" or "the Great King."

We are unable to say whether royal names were engraved on seals Nos. 4, 10, 12, and 13, which are represented by very fragmentary impressions. A line suggesting the border of an inscription panel shows to the right of the pattern of No. 11. Seal No. 9, on the other hand, was definitely uninscribed, as indicated by the repetition of the design in one impression.

All seal inscriptions of the Treasury group—royal names and others—were engraved in the seal stones in reverse so

23. An almost identical monster (in walking position) is shown on a glazed-brick relief from Susa (Marcel Dieulafoy, *L'Acropole de Suse* [Paris, 1893] Pl. XI). Cf. also the rampant monster on a Greco-Persian scaraboid from Kerch (Georg Lippold, *Gemmen und Kameen des Altertums und der Neuzeit* [Stuttgart, 1922] Pl. LXXXI 2). However, the wings of the monsters on the Susa relief and the Kerch scaraboid are pronouncedly upcurled in contrast to those shown on our Seal No. 2.

24. One hesitates to call the man-bulls on seals Nos. 4–5 antagonists. They have rather the appearance of benevolent beings under the control of the hero.

24a. For a study of the distribution of the date palm in Iran showing the upper limits of its occurrence and spots of precarious cultivation on the Iranian plateau, see Hans Bobek, "Beiträge zur klima-ökologischen Gliederung Irans," *Erdkunde* VI (Bonn, 1952) 75 ff. See also Bobek, *Die natürlichen Wälder und Gehölzfluren Irans* ("Bonner geographische Abhandlungen" VIII [Bonn, 1951]) p. 37 and map (Fig. 1), and A. H. Pruessner, "Date culture in ancient Babylonia," *AJS* LXXXVI (1919/20) 212–32.

as to appear in normal orientation on the impressions, whereas on certain Assyrian seals the inscriptions were engraved in normal orientation and appear in mirror script on the impressions.<sup>25</sup>

WORSHIP OF THE AHURAMAZDA SYMBOL  
(Seals 14–19: Pl. 6, pp. 24–26)

*The winged disk and the god's effigy.*—Instead of the hero triumphant, the sacred symbol is the focal feature of this group of seal patterns. The symbol of seals Nos. 14 and 15 show the upper body of Ahuramazda, whose Persian dress distinguishes him from his Assur prototype.<sup>26</sup> On Persian glyptique, minor and monumental, Ahuramazda never appears, as far as we know, with bow and arrow, as does at times the warrior god of Assyria. Rising from the winged disk (No. 14), or partly encircled by the central ring (No. 15), the bust of Ahuramazda is shown in left profile, his right arm raised apparently in the same gesture as that assumed by the flanking human worshipers. However, the god's gesture is presumably meant to be one of blessing, whereas that of the worshipers indicates adoration.

The god's effigy is shown apart from the winged symbol on seals Nos. 16–18. Here his bust, pictured in right profile, appears completely inclosed in an oval or circular frame, the lower part of which is thickened. This frame probably corresponds to the discoid symbol with thickened lower edge—the sun (or the moon) with crescent—shown close to the figure of Ahuramazda on the tomb façades of Naqsh-i-Rustam and Persepolis.

On our seal No. 16 the figure of the god is identical, as far as shown, with the worshipers—to be exact, with the worshiper on the left—in every respect but one: the god does not bear bow and quiver. On seal No. 17 too the posture of god and worshipers is the same; but the god is again unarmed and he wears a dentate tiara, while the adorants seem to be bareheaded.

Seals Nos. 18 and 19 express worship of the deity indirectly by showing supporters of his winged symbol and (No. 18) his effigy. The encircled god of No. 18 wears a flat-topped tiara in contrast to the bashlyks of the flanking horsemen and the bare head of the person supporting his effigy; the god's right arm is probably raised in the usual gesture of blessing. Two winged bifront bull-men support the sacred symbol on No. 19; but because of the fragmentary condition of the impression we do not know whether the god's bust rose from the missing central part of the symbol.

The god's attributes, where preserved, are held in his left hand. On seal No. 14 he seems to extend a ring toward the left adorant, whereas on No. 16 he holds a three-lobed blossom, identical with the symbol carried by his human worshipers. The god may carry the same symbol on seal No. 17, but on No. 15 he seems to grasp the ring partly inclosing his bust.

*The worshipers.*—There are always two identical, anti-thetic men—or in one case monsters—flanking the sacred symbol. These worshipers are either pictured in the act of adoration or prayer, with raised right arm, palm upward (Nos. 14–17), or they are shown in the symbolical function of supporting the winged disk (Nos. 18–19). The two worshipers always face the centrally placed divine symbol.

25. See Henri Frankfort, *Cylinder Seals* (London, 1939) p. 14.

26. For origin, development, and interpretation of the winged symbol see *ibid.* pp. 208–15.

The body is shown in half profile, in full profile (No. 15), or in full front view (mounted symbol-bearers of No. 18). In the last case the horses copy the posture of the riders. Their heads too are turned toward the center, but their chests are in front view. On this seal the unique central supporter of the encircled Ahuramazda duplicates, as far as preserved, the posture of the left horseman.

Two of these pairs of worshipers are definitely Persians, as identified by their dress (Nos. 14 and 16). The worshipers on seal No. 17 may be Persians or Susians. The bashlyk-wearing horsemen of seal No. 18 may belong to any of several national groups of the empire. Perhaps they are Medes. Seal No. 15 also shows problematical adorants, dressed in shirtlike gown with a fold in front; a band or tassel is suspended from the hair or from a headdress. The Janus-faced monster of seal No. 19, being pictured as supporter of the sacred symbol, was presumably considered a benevolent genie. The right hand of all worshipers appearing on seals Nos. 14–17 is raised and opened in prayer, whereas the left always holds some symbol or other object. The common three-lobed blossom symbol is held by the Persians on Nos. 14 and 16. A rodlike object with broadened head—perhaps also a flower—is carried by the adorants of No. 15. The Persian or Susian archers of No. 17 hold their bows in almost the same position as does the king worshipping Ahuramazda on the royal tombs.

*The pedestal monsters.*—Goat-fish, known since the 3d dynasty of Ur as one of the symbols of Ea, the water god,<sup>27</sup> are shown on our seal No. 14 as the pedestals of the Persians worshipping before the symbol of their god. Horned, winged lions of rather non-Achaemenian appearance carry the non-Persian adorants on seal No. 15. The pedestal monster or animal of No. 17 is too vague to be defined.

*The seal inscriptions.*—The Elamite texts of the tablets bearing seal No. 14 mention Aspathines as the addressor, who is the owner of the seal affixed (see pp. 12 f.). The seal inscription proper, also written in Elamite, verifies the identification: it names "Aspathines, son of Prexaspes" (see p. 13). The inscription is oriented in the same manner as the rest of the pattern, and it is carved in five lines inside a rectangular panel. Two vertical lines and abraded characters on impressions of seal No. 15 indicate the existence of a cuneiform inscription—possibly Elamite<sup>28</sup>—oriented transversely to the rest of the seal pattern. The remaining seal impressions (Nos. 16–19) of this group give no clue indicating whether or not inscriptions were present.

RITUAL AND WORSHIP AT THE ALTAR  
(Seals 20, 21[?], 22, 23: Pl. 7, pp. 26–27)<sup>29</sup>

*The altar and the ritualistic paraphernalia.*—In this group the center of the scene is the altar, usually protected above by the sacred winged symbol and flanked by worshipers or priests. Seal No. 21 has distinctive, non-Persian features.

None of the altars is completely preserved. It is clear, however, that the altar of seal No. 20 is almost identical with the fire altar shown on the royal tombs and marked by an inverted pyramidal, three-stepped top. Five flames rise from the altar on our seal pattern instead of the mass

27. *Ibid.* p. 165.

28. See *OIP LXV*, No. 83, p. 199.

29. Seal No. 57, tentatively grouped with stamp seal impressions (Pl. 13 and p. 37), may also belong to this category of cylinder designs.

of gently undulating lines on the tomb design. To us the most interesting feature of this sealing is the presentation of certain paraphernalia used in the ritual. On a table beside the altar stands a mortar from which protrudes the handle of a pestle. This mortar is almost identical in shape with a bronze specimen from the Treasury and with mortars of green chert with Aramaic inscriptions in ink which occurred in great numbers in that building (see pp. 53–56). Our seal pattern gave us the first indication that these mortars, as well as some bronze pestles and inscribed chert pestles (the latter found in equally puzzling quantities), had an important function in the altar ritual. There is no doubt that our seal pictures the haoma ceremony.<sup>30</sup> The mortar (*hāvana*) was the receptacle in which by means of the pestle the twigs of the haoma plant were pounded and their juice extracted. To be sure, the description of the ceremony mentions only metal mortars, ringing sonorously when struck by the priest in the process of the ritual.<sup>31</sup> However, this does not preclude the use of stone mortars and pestles for the same purpose.<sup>32</sup> As a matter of fact, there is a (post-Achaemenid) set of rules concerning the haoma ritual which definitely suggests that the device for extracting the haoma juice consisted of metal or stone.<sup>32a</sup>

The altars of seals Nos. 22 and 23 have bifurcate tops. This design may indicate triangular processes with terraced edges at each of the four corners of a square altar top, leaving the center open for view of the sacred fire, as shown on No. 23.<sup>33</sup>

The altar(?) scene of seal No. 21 is badly mutilated. The central object below a crescent or circle may be an altar or Nabu's wedge-shaped symbol.<sup>34</sup>

*The persons at the altar.*—The haoma ritual of seal No. 20 pictures on the right side a priest, whose position behind the mortar marks him as the *hāvanāna*.<sup>35</sup> His headdress is a bashlyk with three(?) knobs in front. The rest of his attire appears to be similar to that of the Median nobles shown in the Apadana reliefs,<sup>36</sup> namely a coat and long trousers partly covered by a loose sleeveless mantle which hangs from the shoulders. In his right hand he holds three rods, presumably twigs of the haoma plant,<sup>37</sup> while his left hand grasps a staff.<sup>38</sup> The attendant priest to the left extends two sticks into the sacred fire. He too is probably a Mede, to judge by his long-sleeved belted coat and Median trousers. His headdress is mutilated, but it is either the distinctive domed hat of the Medes or the bashlyk worn by them and others.

30. For a detailed description see Jivanji Jamshedji Modi, "Haoma," in *Encyclopaedia of Religion and Ethics* VI (New York, 1914) 506–10.

31. *Ibid.* p. 508.

32. For further references to haoma see *OIP LXV* 5 ff., but since the publication of that volume Cameron has informed us that his identification of the haoma priest (*ibid.* No. 11, p. 101) is erroneous and should be disregarded.

32a. See Anatol Waag, *Nirangistan* ("Iranische Forschungen" II [Leipzig, 1941]) p. 105.

33. For a seal pattern—including an altar with one flame—closely resembling that of our seal No. 23 see Louis Delaporte, *Catalogue des cylindres orientaux et des cachets ... de la Bibliothèque nationale* (Paris, 1910) No. 401.

34. Cf. *OIP XXII* 146.

35. See Modi, *op. cit.* p. 506. According to Abel Hovelacque, the *hāvanāna* is merely an acolyte of the main priest, the *zaotar*-; see his *L'Avesta: Zoroastre et le Mazdéisme* ("Les littératures de l'Orient" IV [Paris, 1880]) p. 442.

36. Cf. Vol. I, e.g. Pls. 51–52, where, however, the nobles' overcoats have sleeves.

37. Or barsom? Cf. A. V. Williams Jackson, *Persia Past and Present* (New York and London, 1906) pp. 369 ff.

38. The seal impressions almost suggest that the twigs and the staff are continuous and form a trident.

Two apparently identical Persian worshipers flank the altar on seal No. 22. The right hand, palm upward, is raised in the stereotype gesture of adoration, while the left holds a symbol which may be a three-lobed blossom.

Two men, a Persian (left) and perhaps a Susian, worship at the altar of seal No. 23. Both seem to wear the wide-sleeved candys;<sup>39</sup> but instead of the dentate tiara of the Persian the assumed Susian appears to wear a bashlyk. Only on this seal do we find the left arm (instead of the right) raised in worship. The right hand of the Persian holds a pitcher. An identical or similar object may be held by his counterpart, though it is not preserved on the impression.

The non-Persian seal (No. 21) with late Assyrian or Neo-Babylonian features apparently shows to the left the goddess Ishtar with her circle of rays, and a worshiper or another deity stands to the right of the altar or Nabu symbol.

*The winged disk.*—Above the altar of Nos. 20, 22, and 23 hovers the sacred symbol. On No. 22 the bust of the god rises in right profile from the winged circle, his right hand raised in the same gesture as that of the adorants. It is possible that the god's effigy is present above the symbol of No. 20, but there is a faint suggestion only of arms pointing to the right. Undulating lines, perhaps horns, spread above the symbol of No. 23. A crescent or circle takes the place of the winged symbol above the altar or Nabu emblem of seal No. 21.

*Seal inscription.*—There is one line of an Aramaic inscription behind the back of the main priest on seal No. 20. The inscription is oriented transversely to the axis of the rest of the pattern and mentions the name of the seal owner. It reads: "Seal of Datam. . ." (see p. 26, n. 122).

MISCELLANEOUS SCENES OF RELIGIOUS CHARACTER  
(Seals 24–27: Pl. 8, pp. 27–29)

The main actors in the scenes of this group, except perhaps for seal No. 27, have one thing in common—an attitude of respect or worship before a venerable symbol.

The palm tree in fruit is the focal object of seals Nos. 24 and 25. In one case a fully armed Susian(?) lancer below star and crescent stands at attention at either side of the palm, exalted by the horned and winged disk above it. The other instance shows, rather incongruously, an ibex superposed on a lion at either side of the palm tree. On two impressions of seal No. 24 appears an Elamite inscription carved in two vertical panels behind the left Susian(?) and oriented transversely to the axis of the seal pattern. The inscription mentions the seal owner—Appishmanda—who is the addressor in the tablets to which seal No. 24 is affixed.

On seal No. 26 an exceptionally small sacred symbol is placed between a seated and a standing Persian in identical dress including a crown-shaped tiara. It is an audience scene and not primarily a scene of worship. The seated Persian is presumably the king, and the standing one too is a member of the royal family—considering the identity of headdress and "royal" beard, combined with the fact that the heads of both persons are on approximately the same level.<sup>40</sup> Both raise their right hands, palms upward, toward the winged symbol, while their left hands hold blossoms—that of the king(?) almost closed, the other

39. Worn by both Persians and Susians in the reliefs of Persepolis and Susa.

40. See Vol. I 164.

open. It is possible that the standing Persian is the owner of the seal, invoking divine grace while respectfully approaching majesty.<sup>41</sup> The gesture of the king(?), in this case, may be one of salutation, whereas the same gesture appears to be one of blessing when performed by the effigy of the god. An attendant standing behind the seated Persian and carrying a problematical flail-shaped device (whip?) balances the principal scene. He may lead the horse (or some other quadruped) which is walking behind him—as suggested by the right end of the sealing. The anterior part of the animal is not preserved.

On seal No. 27 a tall staff between two men perhaps represents a sacred symbol. There is a scroll on either side of its upper end; but it may actually continue upward, in some form, beyond the fragmentary impression. The basal part of the staff is incomplete. If this device was meant to be a religious symbol, the person to the left would not turn his back to it. The sequence of the pattern would be as follows: symbol, person, inscription, second person. The scene may have religious significance, although the attitude of the two apparently identical persons does not appear to express reverence. They seem to walk, one flexed arm at the side, the other suspended. Their non-Persian dress consists of a sleeveless robe. Between the two men there is an illegible, apparently Babylonian, inscription in two panels, oriented transversely to the axis of the seal pattern.

MARTIAL SCENES  
(Seals 28–32: Pl. 9, pp. 29–30)

This group includes the victor triumphant, battle duels, and a naval scene. The hero on seal No. 28 is undoubtedly a Persian, although his headdress is mutilated. He leads three Greek captives—identified by their helmets—by a rope tied around their necks, and he dispatches a fourth helpless Greek warrior, who kneels with averted face before the victor. A similar scene is shown on a seal attributed by some to Artaxerxes I, on which the hero—tentatively identified as that king—leads four bareheaded Egyptian captives by a rope and spears a crowned Egyptian, assumed to be the rebel King Inarus.<sup>42</sup> Another seal of this character<sup>43</sup> pictures a fully armed Persian wearing a tucked candys and a dentate tiara and leading by a rope three bareheaded captives with long fringed garments that

41. On the other hand, one is tempted to interpret this scene as an informal variant of that shown in the king-crown prince reliefs (see *ibid.* pp. 116 f. and 163 ff.), representing Xerxes, the chosen successor to the throne, in this case standing before the seated Darius.

42. See A. T. Olmstead, *History of the Persian Empire* (Chicago, 1948) p. 312. Enlarged illustration in Richard A. Martin, *Ancient Seals of the Near East* (Field Museum of Natural History, "Anthropology Leaflet" No. 34 [Chicago, 1940]) No. 17. See also Joachim Ménéant, *Les pierres gravées de la Haute-Asie: Recherches sur la glyptique orientale II* (Paris, 1886) Pl. IX 1 and pp. 168–69. According to Alexander S. Strelkov (American Institute for Iranian Art and Archaeology, *Bulletin V* [New York, 1937/38] 20, n. 22) this seal was acquired in Kerch and measures 3.5 cm. in length, 1.8 cm. in diameter; he cites "*Compte rendu de la Commission Impériale archéologique pour l'année 1881*, St. Petersburg, 1883, Pl. V, Nos. 8 and 9, pp. 81–82." Ménéant mentions that the seal is made of chalcedony. See also Julius Junge, *Saka-Studien* ("Klio," Beiheft XI.1, n.F. Heft 28 [Leipzig, 1939]) pp. 63–64, n. 4, identifying the Persian king as Artaxerxes III and the Egyptian king as Nectanebo II.

43. Illustrated on a loose plate of unknown publication, marked "The Pushkin State Museum of Fine Arts," with typewritten legend: "Cylinder Seal of Artaxerxes I Longimanus. Chalcedony, height: 2.8 cm., diameter: 1.5 cm. In Pushkin State Museum, USSR, since 1924." An article by Strelkov ("The Moscow Artaxerxes cylinder seal," American Institute for Iranian Art and Archaeology, *Bulletin V* 17–21) deals with this seal and illustrates it—slightly distorted—in Fig. 2 (by courtesy of the Museum of Fine Arts, Moscow); Strelkov (*ibid.* p. 20) suggests that the seal should be attributed to Artaxerxes III.

appear to be draped around the body. The victor holds his spear vertically in front of him, point downward. Behind the captives is a palm tree, and beyond is an Old Persian inscription in two lines, oriented transversely to the rest of the pattern. It reads: "I (am) Artaxerxes the Great King." A further example of this type of seal design<sup>44</sup> shows a fully armed victorious Persian with dentate tiara leading three roped captives dressed in trousers and wearing pointed helmets. The winged disk spreads above the entire scene.

A dual between an archer and a Susian or Persian lancer is shown on our seal No. 29. The archer wears a cap (presumably a bashlyk with raised flaps) with knobs in front, such as is worn by members of the Median, Armenian(?), Cappadocian(?), and Sagartian(?) delegations in the Apadana reliefs. Again, the headdress may be a Scythian cap. The archer seems to wear trousers of Median type. His bareheaded foe is dressed in the candys, which is worn by Persians and Susians alike. An indistinct figure lying between the duelists may be a fallen enemy.

The dress of the two antagonists on seal No. 30 gives no specific clue as to their origin. However, the image of Ahuramazda rising from the winged symbol protects and blesses the warrior to the left, who is obviously the victor, since his spear pierces the foe. The victor either is a Persian, or he belongs to an ethnic group closely related or allied to the head nation of the empire. In this connection it is interesting to note that on a seal in the Metropolitan Museum of Art<sup>45</sup> the victor in a battle with Greeks wears the same sort of chest armor (of leather or the like) and, as on our seal, a battle-ax protrudes behind and above the head. Its handle must be inserted in a sheathlike tube at the back of the armor vest. The warrior on the Metropolitan seal too wears a close-fitting bashlyk. This headdress may actually be a felt or leather helmet. The significant feature of the Metropolitan specimen is the garment below the chest armor. It is the Persian candys. There is also a seal showing two warriors who wear armor vest with inserted battle-ax, close-fitting headdress, and skirtlike garment.<sup>46</sup> On our seal No. 30 the well equipped victor contrasts strongly with the poorly armed, apparently half-naked savage whom he dispatches. A club (or sword?) and a shield seem to be his only weapons. The horse(?) without doubt is meant to stand behind the victor.

All impressions of seal No. 31 are faint and blurred. It is certain that there are two pairs of combatants, the farther warrior in each case slightly protruding in front of the nearer one. Some impressions of this seal suggest that the two spear-thrusting men to the left are Persians with flat-topped tiaras and that the spear-hurling adversaries to the right wear domed headdresses of Median type.

The naval scene of seal No. 32 does not show active combat; but on deck men-at-arms stand ready for battle. The ship, a galley, is presumably meant to be in motion, propelled by the oars while the square sail is reefed. Rowers are not visible, but the helmsman appears below the head of the carved monster curving from the stern. There is no

44. William Hayes Ward, *The Seal Cylinders of Western Asia* (Washington, D.C., 1910) p. 327, No. 1048.

45. *Ibid.* p. 328, No. 1053.

46. *Ibid.* p. 327, No. 1051; better illustration in Delaporte, *Catalogue des cylindres orientaux et des cachets ...*, Pl. XXVIII 403; Junge, *op. cit.* p. 92, identifies the two antagonists of these warriors as Saka Haumavarga (see our p. 52, n. 49) and attributes the seal to the time after Darius I.

indication that the bowsprit, projecting from the deck above the pronounced ram spur or beak, is modeled in a similar manner.<sup>47</sup> Palm tree and fish symbolize land and water.

#### HUNTING SCENES

(Seals 33-36: Pl. 10, pp. 30-31)

The seal impressions of this group show persons and monsters hunting lion, ibex, and mouflon. On seal No. 33 a kneeling, bareheaded and beardless Persian or Susian youth (or eunuch?), clad in the candys, dispatches with his arrows an attacking rampant lion. A dead lion cub lies between the hunter and the erect lion. Star and crescent are above. The seal owner, Artadara, is mentioned in the Aramaic inscription carved in two lines in a horizontal subdivided panel behind the hunter.

The scene on seal No. 34 is more spirited. Arm raised in spear-throwing position, a hunter, clad in bashlyk or similar headdress and tight-fitting garments, rides on the bare back of a horse, which appears to leap over a prostrate ibex. The ibex is dead, and so the posture of horse and hunter is that of pursuit of further game not shown in the seal pattern.

On the partly distorted impression of seal No. 35 the game, a fleeing mouflon, is clearly identified by its horns curled sideways. The hunter may be a winged lion or a winged human-headed monster with the body of a lion.

The winged "centaurian" hunter of seal No. 36 has the body of a bull, as shown mainly by the characteristic tail raised like that of an angry attacking bovine. The man part spans a bow and aims at an erect lion, which is partly visible at the left end of the impression. Ahuramazda apparently blesses the action of the bull-man monster. The god's effigy rises above the winged disk, which hovers above and behind the hunter.

#### COMBAT SCENES

(Seals 37-39: Pl. 11, p. 32)

A non-Persian warrior, a genie, and a Persian are the intended victors of the combats pictured on seals Nos. 37-39. The scenes are related to those showing the hero triumphant (Nos. 1-13), who is always a Persian. However, in the group under consideration the hero of No. 39 only appears in Persian dress. He is duplicated, holding and stabbing a horned and winged human-headed monster, which rears in the center of the scene. An Aramaic inscription, oriented transversely to the axis of the scene, is unintelligible.

The warrior on seal No. 37, dressed in a belted sleeveless garment, has a grooved, truncated conoid headdress with knob, quite distinct from the Persian tiara. The lower part of the appendage of the hat may represent hair at the back of the neck. The hero strangles an erect lion with his left hand, while the right holds a dagger. A similar posture is shown by the four-winged skirted genie fighting a winged man-bull on seal No. 38. It is not known whether the latter design had additional features; but on No. 37 a palm tree stands behind the hero, and a definite base line forms the lower border.

#### MONSTERS AND ANIMALS

(Seals 40-43: Pl. 11, pp. 32-33)

The remaining patterns of cylinder seal impressions include a pair of antithetic winged man-ibexes with palm

47. For ships of the Persian fleet see George Rawlinson, *The Five Great Monarchies of the Ancient Eastern World* (2d ed., New York, 1881) III 194-97.

tree (No. 40) and a pair (or two pairs) of identical gazelles, necks intertwined, with an inscription fragment at the side (No. 42). There are, finally, single animals: the humped bull of seal No. 41 and an ibex with tree symbol and base line (No. 43). The running boars of seals Nos. 73 and 74, tentatively classed as stamp impressions (pp. 40 f.), may actually be cylinder impressions belonging to this group.

## THE OWNERS OF THE SEALS

The names of persons and the dates appearing in Table I and in the tabulations given in the catalogue of seal impressions (pp. 18–41) are taken from Cameron's translations of the tablet texts.<sup>48</sup> The writer has treated this material statistically in order to determine the relations of the seals impressed on the tablets to various items of the texts.

It was found that in each group of tablet texts of "letter type"<sup>49</sup> which bear the same seal the name always occurring in the documents is that of the speaker, that is, the addressor. We conclude that the addressor is the owner of the seal. In tablet texts of "memorandum type,"<sup>50</sup> which do not specify the name of the author, the seal owner may yet be definitely identified as one of the persons to whom the texts refer, once the meanings of expressions such as *sharamanna* and *kurmin* are established beyond doubt (see Table I, nn. 6 and 8).

We know the names of ten addressors of tablets and, consequently, the owners of the affixed seals:

Seal No.	Owner	Seal No.	Owner
1	Darkaush	8	Artasyras
2	Artataxma	14	Aspathines
3	Uratinda (=Rumatenda) <sup>51</sup>	16	Megadates
4	Baradkama	24	Appishmanda
6	Ciçavahush	25	Marrezza

In addition the owners of two seals have been identified by seal inscriptions (see below):

Seal No.	Owner
20	Datam[es]
33	Artadara

The identification of addressor with seal owner is verified by the Elamite inscriptions of seals Nos. 14 and 24 mentioning Aspathines and Appishmanda, who are the addressors in the respective tablet texts. Seal No. 33 also mentions the owner, in its Aramaic inscription: "Artadara who (is) chief. . ."<sup>52</sup> This seal, however, as likewise Nos. 5, 15, 26, 30, and 42, appears only on tablets of memorandum type, which do not specifically mention the author of the document. The tablet fragments bearing seals Nos. 35 and 36 are apparently illegible.

We have mentioned that all seal impressions occurring on the tablets of the Treasury group are those of cylinder seals. However, impressions of cylinders are found on clay labels as well, and two sealings (Nos. 5 and 8) are found on both tablets and labels (see pp. 16–17). The following cylinder seal impressions occur on labels only: Nos. 7, 9–13, 17–23, 27–29, 31–32, 34, 37–41, and 43. Since labels bear no texts, seal inscriptions would be the only means of identifying the seal owners. Nos. 20 and 39 were both inscribed, but the impressions of both are fragmentary and

48. See p. 4, n. 1. See also Cameron, "Darius' daughter and the Persepolis inscriptions," *JNES* I (1942) 214–18, and Richard T. Hallock, "Darius I, the king of the Persepolis tablets," *JNES* I 230–32.

49. See *OIP* LXV 25 and 56 f.

50. *Ibid.*

51. See *ibid.* pp. 86 f.

52. Translated by Professor Raymond A. Bowman.

preserve the beginnings only of the Aramaic legends: "Seal of . . ." (No. 39) and "Seal of Datam[es]" (No. 20; see p. 26, n. 122).

As far as is known at present, none of the texts of the Treasury tablets mentions the office or title of the person whose seal—and whose seal alone—is affixed to the document. There are a few clues, however, which shed some light on the position of the owners of the seals. These clues are mainly the positions and the functions of the other persons mentioned in the texts, and the inscriptions and patterns of the seals.

We have shown that the owner of the seals impressed on tablets of letter type is always the addressor of the document. The other persons with whom we are here principally concerned are the addressee of the letters (requisitions), the person who in letters and memoranda is responsible for supervision or payment (see Table I, n. 6), and—to a lesser degree—the person "by the hand of" whom payments have been made (see Table I, n. 8).

All letters of the Treasury group of tablets ranging in time from the 32d year of the reign of Darius I to the 20th regnal year of Xerxes are addressed consecutively to five persons, who whenever their title is mentioned are called "treasurer" or "treasurer of (or at) Parsa." We have no doubt, therefore, that the addressee is in each case the Treasurer of Persepolis, whether or not his title is indicated. Our Table I gives the names of these five treasurers and the regnal year or spans of years in which each definitely held office:<sup>53</sup>

Shakka <sup>54</sup>	(32d year of Darius I)
Baradkama	(32d year of Darius I to 6th year of Xerxes)
Barishsha	(7th year of Xerxes)
Vahush	(13th to 19th years of Xerxes)
Ratininda	(19th and 20th years of Xerxes)

Altogether there are on the Treasury tablets the impressions of eighteen different cylinder seals, representing as many persons who had dealings with the Treasury or were actively engaged in its administration. Ten of these persons (see above) are known to us by name as the addressors of letter-type tablets, who corresponded with five men responsible for the "Treasury of the King."<sup>55</sup> The names of two of the seven persons whose seals are impressed on memoranda are also known. One of them, Baradkama (seal No. 4), was the addressor of a letter and during his tenure as treasurer the author of memoranda (see Table I, n. 7). Artadara is identified by the legend of his seal (No. 33; see above). In two instances we do not even know the nature of the fragmentary documents on which seals are preserved (Nos. 35–36).<sup>56</sup>

The tenor of the letter texts suggests that their addressors—as a rule requesting the treasurer to transact payments for services rendered by various kinds of workmen, artisans, and officials<sup>57</sup>—were the treasurer's peers or his superiors in rank.<sup>58</sup> The lack of continuity in our list of addressors (see Table I) contrasting with the uninterrupted sequence of addressees suggests that the former do

53. See also *OIP* LXV 32 f.

54. Whose title is not specified in the only tablet (PT4 601) which mentions him as addressee.

55. See *OIP* LXV, No. 27, p. 128.

56. The remnants of the texts are apparently illegible, for they are omitted in Cameron's list *ibid.* pp. 56 f.

57. See *ibid.* pp. 14 f.

58. *Versus* Cameron *ibid.* p. 96.

not represent one public office comparable with that of treasurer. On the other hand, the rather uniform character of the messages or requisitions shows that all addressors—that is, the owners of the ten seals with which we are here concerned—had the same or similar responsibility, namely (among other duties) the supervision of Persepolis constructions. Baradkama seems to be the only one of this group who appears also as addressee and treasurer. Shortly after addressing a requisition<sup>59</sup> to Shakka—undoubtedly the treasurer in the 32d year of Darius' reign—he appears as addressee and treasurer himself, retaining in this office his seal (No. 4<sup>60</sup>) which he used as addressor. Aspathines the owner of seal No. 14 may be the same Aspathines who carries Darius' battle-ax and bow in the reliefs on the king's tomb<sup>61</sup> and whom we identified as the bearer of the royal weapons in the Treasury reliefs.<sup>62</sup> If the identification of the owner of seal No. 14 as Darius' weapon-bearer is correct, the position of this trusted dignitary of the king suggests the status of the other nine persons who had the same or similar functions in the Treasury documents. Another person of high rank appears as *sharamanna* who "is responsible for" workmen whose wages have been paid. He is Megapates (OP: Bagapāti), a cousin of Darius I and an admiral of the Persian fleet. To be sure, the tablet<sup>63</sup> mentioning his name is a memorandum sealed by "Artadara who (is) chief" (seal No. 33), and it is doubtful whether in this case the seal owner was the superior of the "responsible" official. In any event, the duties of Megapates apparently were the same as those of the ten officials mentioned above.

At this point we have to consult the patterns of the seal impressions for further information with regard to the status of the seal owners. As previously mentioned, among all the Persepolis seals, whether represented by their impressions or by the actual objects, the most distinguished ones are those which bear a royal name. Altogether there are seven such "royal" seals impressed on tablets of the Treasury group, and all show the hero triumphant as the principal feature of their patterns. These seals are not the king's own seals. They may be seals of office,<sup>64</sup> and they are certainly the seals of persons of high rank. By inference the famous "royal" seal of Darius<sup>65</sup> and the Artaxerxes

59. *Ibid.* No. 1, pp. 83 f.

60. Impressed on memoranda of Xerxes' 4th, 6th, and 7th years. Baradkama appears in these texts as *sharamanna* (see Table I), but he is mentioned in the same capacity on tablets of the 2d and 4th years of Xerxes bearing another sealing, namely No. 26, which in turn is used on a memorandum of Xerxes' 10th year mentioning Vahush as *sharamanna*. We disregard the faint possibility that the seal of Baradkama the addressor and the seal impressed on the memoranda mentioned belonged to two distinct officials but were so similar that the preserved portions of their impressions appear to have been made by one and the same seal (see Pl. 4).

61. See *OIP* LXV 103 f.

62. See Vol. I 169. The identification of the owner of seal No. 14 as Darius' weapon-bearer would be more certain if the two worshipers on the seal wore Median dress as do the relief figures. Again, the stately beard of these worshipers—who presumably both picture the same person—might suggest that they are meant to represent Aspathines' royal master (cf. also seal No. 26; p. 10 and n. 41).

63. *OIP* LXV, No. 8, pp. 94 f.

64. The existence of a seal of office would imply that the possessor had a personal seal too. According to Cameron (oral information) the addressor of one of the tablet texts of the fortification group emphasizes that the seal impressed on the tablet is his new seal. It is not known, however, whether his old seal was lost, or whether it was replaced for other reasons.

65. Burned chalcedony cylinder in the British Museum. See Ménant, *op. cit.* Fig. 145 and pp. 166 ff.; Frankfort, *Cylinder Seals*, Pl. XXXVII d. The find-history of this seal is traced in an interesting communication by J. Yoyotte, "La provenance du cylindre de Darius [BM 89.132]," *RA* XLVI (1952) 165–67.

seals (see pp. 10 f.)—none of which is more impressive than our seals of the hero triumphant—are those of high dignitaries but not the kings' own seals. Five of the ten officials who are the addressors of our letter-type tablets—requisitions written at their command—were privileged to use the distinguished seals with royal names. The sealings of Darkaush (No. 1), Artataxma (No. 2), and Uratinda<sup>66</sup> (= Rumatenda; No. 3) bear the name of Darius (I), whereas Xerxes' name was engraved on the seals of Ciçavahush (No. 6) and Artasyras (No. 8<sup>67</sup>). Although there is no trace of an inscription on the fragmentary sealings (No. 4) of Baradkama, the sixth official of this group (who subsequently became Treasurer of Persepolis), the hero triumphant of the seal pattern may also have been combined with a royal name. If so, it was the name of Darius (see Table I). All seals of the remaining four addressors of requisitions were engraved with scenes of religious character. Worship of Ahuramazda is represented on the seals of Aspathines (No. 14) and Megadates (No. 16), and venerable symbols are flanked by soldiers or animals on the seals of Appishmanda (No. 24) and Marrezza (No. 25) respectively.

We have pointed out that in our opinion the ten officials of this group were either equal in rank to the treasurer or (perhaps in most cases) his superiors. Those dignitaries whose seals bear the king's name presumably held the highest position or positions.<sup>68</sup>

According to the extant sealings there are seven authors of tablets of memorandum type, but as far as we know, their names are never specifically indicated and linked with the seals. The purport of the memoranda—recording that payments have been effected<sup>69</sup>—suggests that the authors are the successive treasurers or their subordinates. This assumption seems to be substantiated by tablets which bear the seal of Baradkama (No. 4) and which were written during his tenure as treasurer.

Among the seven seals of the assumed Treasury officials there is only one "royal" seal (No. 5) which definitely mentions the name of the ruler (Xerxes). It does not occur prior to Xerxes' 19th year, but is found on all extant memoranda of the 19th and 20th years of that king and on those of the beginning of Artaxerxes I's reign. It is doubtful, though possible, that this seal was the "Seal of the Treasury." If true, it was used in succession by treasurers Vahush and Ratininda (see Table I).<sup>70</sup> It is the only one of the seven memoranda seals which occurs on labels also (see also seal No. 8; n. 67 and pp. 16 ff.).<sup>71</sup>

The patterns of the other seals found on memoranda in-

66. We do not believe that a scribe called Uratenda who wrote Darkaush's requisitions in the 3d and 4th years of Xerxes (see Table I) is the same person as the owner of seal No. 3; the Uratinda who appears as *sharamanna* in memoranda of the 19th and 20th years of Xerxes and in the 1st year of Artaxerxes I may be a third official of the same name (see *OIP* LXV, No. 3, pp. 86 f.).

67. The only seal found on letter-type tablets which occurs on labels as well.

68. Walther Hinz suggests that the "royal" seals impressed on the letter-type tablets are those of the "grand viziers" (review of *OIP* LXV in *ZA* XLIX= n.F. XV [1950] 350).

69. *OIP* LXV 25.

70. Cf. Hinz, *op. cit.* p. 351. There is, however, no indication that a "Seal of the Treasury" existed prior to Xerxes' 19th year. Further, even if Baradkama's seal pattern (No. 4) did include the name of the king—which cannot be proved (see our pp. 12–13)—there would be only two "royal" seals in our group of seven used by authors of memoranda (vs. Hinz, *loc. cit.*: "Auch die *memoranda* tragen meist ein 'Königssiegel' . . .").

71. The seventh of the "royal" seals (No. 7, bearing the name of Xerxes) is known from one impression only, found on a label from the Treasury.

clude the hero triumphant (No. 4, the seal of Baradkama, occurring also on a tablet of letter type; see n. 70), worship of the sacred symbol (No. 15), a dignified audience scene (No. 26), a combat scene (No. 30), a lion hunt (No. 33, bearing the name of Artadara), and a fragment with intertwined gazelles (No. 42).

#### IMPRESSIONS OF STAMP SEALS AND SIGNET RINGS

##### SUBJECTS OF SEAL PATTERNS

##### PERSONS, COMBATS, ALTAR SCENES, DIVINE BEINGS

(Seals 44–65: Pls. 12–13, pp. 33–39)

A glance at Plate 12 will show that we have left the sphere of Persian glyptique and entered the realm of Greek art. Compared with the animated little sculptures of human beings—unclad in many cases<sup>72</sup>—which appear almost to have been carved after living models, the rigid stereotyped heroes of our Persian cylinder seals give the impression of lifeless though often well cut marionettes.

It is beyond the scope of this report to enter into the controversy regarding the Greek, East Greek, or Greco-Persian origin of certain seals of the Achaemenian period with non-Persian features.<sup>73</sup> Our sealings found in the Persepolis Treasury and pictured on Plate 12 are Greek (except perhaps No. 50), according to the style and subject matter of their patterns. It is plausible to assume that these seals were the products of Greek artists of western Asia Minor. Again, classical archeologists may be able to determine whether they originated rather on the mainland of Greece, on the islands of the Aegean, or in Greek colonies on the shores of the Black Sea. Chronologically our seals belong roughly to the period of Furtwängler's "late archaic transitional style" of Greek glyptique<sup>74</sup> and extend into his period of the "free style preceding Alexander."<sup>75</sup>

There are no Persian seals, or—according to Miss Maximowa<sup>76</sup>—even Greco-Persian seals, whose patterns show any relation to Greek life or to the mythology or pantheon of the Greeks. This fact alone indicates the purely Greek origin of our seals Nos. 44 and 45. The former seems to picture the nude Heracles<sup>77</sup> armed with his club and seated on a chariot which is drawn by two horses. Seal No. 45 represents Athena standing in a chariot which is hidden behind the horses of her quadriga.<sup>78</sup>

Most of the other sealings shown on Plate 12 portray nude men, singly or in pairs, in various postures and activities. There is a helmeted warrior (No. 46), who kneels behind his shield and holds a drawn dagger in his right hand ready to stab a foe who is not shown. Seal No. 47 pictures a man, perhaps also meant to be a warrior, who leans against an object which is possibly a shield. His

72. Persian sculpture in general shuns the representation of the completely nude human body. Cf. Dio Chrysostom xiii. 24 as to the repugnance of the Persians to exposure of the body.

73. See Adolf Furtwängler, *Die antiken Gemmen: Geschichte der Steinschneidekunst im klassischen Altertum* (3 vols.; Leipzig and Berlin, 1900) esp. III 78–146; also M. E. Maximowa, "Griechisch-persische Kleinkunst in Kleinasien nach den Perserkriegen" in *Deutsches archäologisches Institut, Archäologischer Anzeiger*, 1928, cols. 648–77; Gisela M. A. Richter, "The late 'Achaemenian' or 'Graeco-Persian' gems," *Hesperia: Supplement VIII* (Baltimore, 1949) 291–98, Pls. 31–38 (with bibliography).

74. "About 500 and beginning of the 5th century"; *op. cit.* Vol. III 95.

75. *Ibid.* pp. 116 ff.

76. *Op. cit.* col. 676.

77. As suggested by Gisela M. A. Richter, of the Metropolitan Museum of Art.

78. For similar representations of quadrigae see Furtwängler, *op. cit.* Vol. I, Pls IX 10 and X 6; see also Vol. III 107.

hands are raised to his chest and to his lowered head in an attitude of devout prayer. The meaning of the group shown on No. 48 is problematical. A naked man, apparently a youth, kneels in front of a standing man, who holds some object almost above the head of the former. A tucked garment covers the loins of the standing man and is draped over his left arm. Another kneeling man is shown on seal No. 49, together with a problematical device. Seal No. 52 seems to picture two nude wrestlers, and No. 53 shows a man apparently struggling with his unruly horse. The label bearing seal No. 51 is instructive. At the right edge of the elliptical, almost circular, clay piece is an animated Greek design picturing a nude man with raised left arm, perhaps being attacked by a dog (see p. 35, n. 131). In strong contrast to this figure, the fragment of another seal pattern (without seal number) at the left edge of the same label shows a fully attired Persian in the rigid posture of the conventional Persian style. In the group of Greek seals we may include Nos. 54 and 56 of Plate 13. The former shows a nude man in a position similar to that of the standing man of No. 48. The man of seal No. 54 too carries a garment of some kind draped over his left arm. The greatly distorted impressions of No. 56 picture a nude standing man or woman.

There may be differences of opinion as to the origin of the rest of this group of stamp seals and signet rings, but there is hardly a doubt that they show influence of western glyptique. There is a bearded man's head (No. 50) with bushy hair (or fur cap) and coarse naturalistically carved features. On seal No. 55 a man is seated in front of a rod-like symbol with bifurcated top. He wears a conoid head-dress, from which a scarf seems to extend along the back. His left foot apparently rests on the table which carries the symbol. His right arm seems to extend to this foot, pulling at the low boot or fastening it.<sup>79</sup> Three seals show a Persian in kneeling-running position (Nos. 58–60). There is a close similarity between the pattern of seal No. 58—the running hero in Persian dress armed with bow and spear—and the design of the darics. Our numismatic collection includes coins from the reign of Croesus (561–546 B.C.) and others ranging in time from the 7th century B.C. to post-Alexandrian periods; but there is not a single example of the darics, which assumedly displaced the Lydian gold stater.<sup>80</sup> Thus, our seal No. 58 provides the only illustration of a daric pattern from Persepolis. The relationship of the kneeling-running Heracles of eastern Greek glyptique to the pattern of the darics has been pointed out previously.<sup>81</sup> The patterns of Nos. 59 and 60 are closely related, and both resemble somewhat the focal scene of the Persian design on cylinder seal No. 1 (Pl. 3). In either case a Persian—one bareheaded, the other with plain tiara—is shown in kneeling-running position, combating a rampant lion, which on No. 60 is provided with wings.

There is no doubt as to the purely Persian origin of seal No. 57. A Persian in stereotyped attire and posture (as far as preserved) stands in front of an object which appears to be a fire altar. It is possible that this impression was made

79. A subject favored by Greek glyptique of this period; see e.g. *ibid.* Vol. I, Pl. XXXI 9.

80. Kurt Regling, *Die antiken Münzen nach Alfred von Sallet* (3. Aufl.; Berlin and Leipzig, 1929) p. 3.

81. Furtwängler, *op. cit.* Vol. III 98. See also Anton Moortgat, *Hellas und die Kunst der Achaemeniden* (Altorientalische Gesellschaft, "Mitteilungen" II 1 [Leipzig, 1926]) p. 16.



by a cylinder rather than a stamp seal, in spite of the curved outline of the sealing.

Winged genii are shown on seals Nos. 63 and 65. The pattern of the former, faint and indistinct, reminds one of the four-winged bifront bull-men of seal No. 19. It may be the sealing of either a cylinder or a stamp seal. Above the genie of No. 65 hovers the *hmhm*-crown of Egypt (see p. 39, n. 132). It is identical, as far as it can be recognized, with the crown of the four-winged genie carved on a doorjamb of the Gate Structure of Cyrus at Pasargadae.<sup>82</sup> However, the wings of the genie on our sealing, upcurved in favored Achaemenian fashion, are distinct from the straight wings of the Pasargadae sculpture. At any rate, the presence of the Egyptian crown on the Pasargadae relief, undoubtedly carved at the site, suggests that our seal too may have been cut in Persia proper.

The Egyptian god Bes, pictured on seal No. 64 together with a canine and a cock, was a favorite subject for seal-cutters in various lands during the period under consideration.<sup>83</sup> Bes figurines, probably imported from Egypt, were found in the Persepolis Treasury (see p. 68 and Pl. 31:4, 6). Our seal too has the appearance of non-Persian workmanship.

Neo-Babylonian seals, presumably imported from Mesopotamia, are represented by Nos. 61 and 62, showing the stereotyped pattern of many such seals: a priest worshipping at the altar with the couchant *mušhuš* monster,<sup>84</sup> the spear of Marduk, and the styli of Nabu.<sup>85</sup>

ANIMALS AND MONSTERS  
(Seals 66-77: Pl. 14, p. 39)

The heraldic schematism of seals Nos. 66, 68, 69, 71, 76, and 77 marks them as Persian seals. This group includes monsters such as the winged lion(?) with ibex horn (No. 66), reminding one of later (Sasanian) patterns of seals and stucco-work. A horned griffin is shown on No. 68,<sup>86</sup> and a winged bull on No. 69. The fragmentary sealing of No. 71 seems to picture a rampant bull. The cutter of No. 76 apparently had difficulty in placing his subjects. A lion couches on a ground line oriented along the long axis of the seal, while his prey, perhaps an onager, breaks down on a transversely oriented ground line. The pattern of No. 77 shows two antithetic sejant regardant lions above a ground line.

The remaining seals are non-Persian, either pure Greek or greatly influenced by Greek glyptique. But for the vessel balanced on its head, the graceful heron of No. 67, a seal of unusual form, has many counterparts in Greek glyptique during the Achaemenid era.<sup>87</sup> The running dog of No. 75 is very similar to the dog on a seal pointed out by Miss Maximowa<sup>88</sup> as an example of a Grecized multiple

82. See Vol. I 22 and Fig. 7 B.

83. See Furtwängler, *op. cit.* Vol. III 110.

84. See Benno Landsberger and Ingo Krumbiegel, *Die Fauna des alten Mesopotamien nach der 14. Tafel der Serie HAR-ra hubullu* (Sächsische Akademie der Wissenschaften, philol.-hist. Klasse, "Abhandlungen" XLII 6 [Leipzig, 1934]) pp. 48 ff.; Eckhard Unger, "Mischwesen" in *Reallexikon der Vorgeschichte VIII* (Berlin, 1927) 213.

85. Cf. *OIP XXII*, Nos. 484, 486, 489, 491, 496.

86. Resembling the monster in the Achaemenian relief pictured in *IAE*, Fig. 362.

87. See Furtwängler, *op. cit.* Vols. III 145 and I, Pls. IX 29, XII 46, XIV 11 and 17, etc. Cf. the heron on a Greek chalcedony scaraboid from the Peloponnesus in Lippold, *Gemmen und Kameen des Altertums und der Neuzeit*, Pl. XCV 10.

88. *Op. cit.* cols. 673-74 and Fig. 28c.

pattern, which in addition to a fox and a lizard pictures also a heron resembling the bird of our seal No. 67.

There are finally some spirited little animal sculptures which belong to the sphere of Greek glyptique rather than to that of Persia. No. 70 seems to picture a gamboling or charging bullock. On No. 72 a running or jumping horse or similar animal is shown. Running boars appear on sealings Nos. 73 and 74; both may have been made by cylinder seals, for distinct stamp seal edges are missing.

Among the cylinder sealings discussed on preceding pages there are several belonging to this group of patterns which are closer to Greek glyptique than to Persian. We refer to the humped bull of No. 41 and the ibex of No. 43.<sup>89</sup> The animated scene of the mounted hunter (No. 34) also belongs to this group, and possibly the hunting bull-man of No. 36.

Nevertheless, in summarizing our impressions as to the affiliations of the seals whose patterns we found on tablets and labels in the Persepolis Treasury, we conclude that by far the greater proportion of cylinder seals have typically Persian designs. On the other hand, the majority of the patterns of stamp seals and signet rings are Greek, or at least Grecized. There are only a few designs of stamp seals and rings which we may call definitely Persian.

Thus, our Treasury sealings—most or all of which are probably to be assigned to the reigns of Darius I and Xerxes (see pp. 15-18)—document a late phase of the use of the traditional oriental cylinder seal with indigenous patterns, coinciding with the arrival of Greek or Grecized designs on sealing devices which were to displace entirely the ancient oriental cylinder seal after the fall of the Achaemenid Empire.

THE OWNERS OF THE SEALS

The impressions of the stamp seals and signet rings under consideration occur on uninscribed labels only, and none of the sealings have inscriptions. Therefore, we do not know the names of their owners, nor do we have documentary information concerning the owners' functions. We know, however, that seals were impressed on clay labels affixed to objects which were stored in the royal Treasury. While some of these goods may have been sent with sealings already affixed from distant parts of the empire, in many cases we have proof that the sealings were impressed at Persepolis. Such proof is furnished by the association of impressions of stamp seals and signet rings on labels bearing impressions of two cylinder seals (Nos. 5 and 8), with Xerxes' name, as listed in Table II. The owners of seals Nos. 5 (name unknown) and 8 (Artasyras), doubtlessly high officers at the Persepolis court, appear as authors of tablets—memoranda and letters (requisitions) respectively—which deal with Persepolis matters. We have no doubt, therefore, that owners of our Greek or Grecized seals were officials in Persian service. Many, presumably, were employed at the Persepolis Treasury. These conclusions concern primarily the owners of the stamp seals and signet rings whose impressions are associated with those of seals Nos. 5 and 8; but they may be valid with regard to most or all of the persons who impressed their seals on the clay labels which we found in the royal storehouse.

We are inclined to believe that the owners of our seals with Greek patterns were Greeks in Persian employ. On

89. Cf. a seal found in Greece: Furtwängler, *op. cit.* Vol. I, Pl. VIII 47.

the other hand, it is interesting to conjecture that Persians—ignoring customary rules of propriety (see p. 14, n. 72)—esteemed the products of Greek gem-cutters to such an extent as to prefer Greek seals as symbols of identification.

CHRONOLOGY OF SEAL IMPRESSIONS FROM  
THE TREASURY

For dating the seal impressions of the Treasury group we have the following criteria:

1. The names of kings, either inscribed on seals or mentioned in the texts of the tablets to which the seals are affixed.
2. The tablet texts, often dated to a month of a year of reign of a king.<sup>90</sup>
3. Association of otherwise undatable impressions on the same label with sealings occurring also on tablets and dated by points 1 and 2.

SEALS OF THE TIME OF DARIUS I

(Nos. 1–4, 24, 33, and possibly 14)

The name of Darius engraved on the seals of Darkaush (No. 1) and Artataxma (No. 2) proves conclusively that these seals originated during the reign of Darius I (522–486 B.C.<sup>91</sup>) in spite of the fact that we found their impressions on tablets of the time of Xerxes solely. The seal of Darkaush occurs on tablets ranging in time from the 2d to the 4th year<sup>92</sup> of Xerxes (484–482 B.C.). Artataxma's seal is impressed on records of the 4th to the 20th years of this king (481–466 B.C.). No. 3, the seal of Uratinda (= Rumatenda), also bears the name of Darius, but the dates of the tablets<sup>93</sup> to which it is affixed are uncertain or destroyed. Nevertheless, the name of the addressee—Baradkama—indicates the period during which the tablets bearing Uratinda's seal were inscribed, namely during Baradkama's tenure as treasurer, between 489 and 479 B.C. (see following paragraph). The attribution of the tablets with Uratinda's seal to the last years of Darius rather than to the first years of Xerxes is based on the names of persons otherwise mentioned in texts of Darius' time only. They are the scribe Hipirukka and a man by the name of Hittipella.

The date of Baradkama's seal (No. 4) is determined not by a royal name—which may or may not have existed on this seal—but by the date of the earliest tablet bearing his seal, namely the end of the 32d or the beginning of the 33d year of Darius I (489 B.C.). The latest tablet with the seal of Baradkama is dated in the beginning of the 7th year of Xerxes (479 B.C.).<sup>94</sup>

Appishmanda's seal (No. 24) is dated in the same manner as that of Baradkama. It also occurs on a tablet<sup>95</sup> assignable to the 32d or 33d year of Darius I (489 B.C.).

No date appears in the texts of the tablets bearing the seal of "Artadara who (is) chief" (No. 33); but one tablet sealed by Artadara states that "Darius the King" gave the order (for the payments mentioned in the text), this king being without doubt Darius I. Another tablet with Artadara's seal simply mentions that Darius gave the order.<sup>96</sup>

90. Darius I, Xerxes, and Artaxerxes I; see Table I and *OIP* LXV 32 ff. For a bibliography of seal impressions on datable documents found at other locations see Delaporte, *Catalogue des cylindres orientaux et des cachets ...*, pp. XLI–XLIII.

91. All Achaemenid dates given in this chapter and elsewhere are taken from *SAOC* No. 24.

92. For dating by months of all seals mentioned in this chapter consult Table I and the catalogue of seal impressions (pp. 18 ff.).

93. *OIP* LXV, Nos 3 and 3a, pp. 86–88.

94. See *ibid.* Nos. 1 and 24, pp. 83 f. and 124 f., respectively.

95. *Ibid.* No. 2, p. 85.

dara's seal simply mentions that Darius gave the order.<sup>96</sup>

The seal of Aspathines (No. 14) was undoubtedly cut in the reign of Darius if its owner is correctly identified as the weapon-bearer of the king (see p. 13). The use of the seal in the beginning of Xerxes' reign (end of 2d year and 3d year,<sup>97</sup> i.e., 483 B.C.) also tends to attribute it to the reign of Darius (see p. 17).

These seven seals, attributed to the time of Darius I, are all cylinder seals. No impressions of them occur on clay labels, where they might have been associated with impressions of other cylinders, stamp seals, or signet rings, as is the case with certain seals of Xerxes' reign (see below). We are therefore deprived of the possibility of attributing further seals to Darius' time by their association with dated specimens, but we shall point out some clues suggesting that other seals of the Treasury group may be attributed to the reign of this king.

SEALS OF THE TIME OF XERXES

(Nos. 5–8, 16, 25–26, 30, and associated specimens)<sup>98</sup>

Xerxes' name is never mentioned in the tablet texts of the Treasury group; but it appears on four seals (Nos. 5–8), three of which are affixed to records of the following years of his reign:

No. 6 (seal of Ciçavahush)	Years 15–18 (470–467 B.C.) <sup>99</sup>
No. 5 (owner unknown)	Years 19–20 (467–466 B.C.) <sup>100</sup>
No. 8 (seal of Artasyras)	Year 20 (466/65 B.C.) <sup>101</sup>
No. 7 occurs once only, on a clay label without further data.	

These seals can be attributed with certainty to the reign of Xerxes. The *terminus a quo* is the date of his accession to the throne (486 B.C.).<sup>102</sup> The *terminus ad quem* is the first documented use of the seal. Consequently, the four seals must have been cut during the following years:

No. 6 between 486 and 470 B.C.
No. 5 between 486 and 467 B.C.
No. 8 between 486 and 466 B.C.
No. 7 486–465 B.C.

Seals Nos. 16, 25, 26, and 30 do not bear Xerxes' name; but the dates and names mentioned in the texts of the tablets to which they are affixed—especially the treasurers' names—prove that these seals were used during the following years of Xerxes' reign:

No. 26 (owner unknown)	Years 2–10 (483–476 B.C.) <sup>103</sup>
No. 25 (seal of Marrezza)	Year 7 (478 B.C.) <sup>104</sup>
No. 30 (owner unknown)	Year 16 (470/69 B.C.) <sup>105</sup>
No. 16 (seal of Megadates)	Year 19 (466 B.C.) <sup>106</sup>

96. See *ibid.* Nos. 4–5, pp. 88–92. If the scribe (Dadumania) who wrote Artadara's tablets is the same person (Datam[es]) who is identified by the Aramaic inscription on seal No. 20, that seal too has to be assigned to the time of Darius I (see our p. 7, but cf. p. 26, n. 122).

97. See *OIP* LXV, Nos. 12, 12a, 12b, and 14, pp. 102 ff.

98. It is interesting to note the close similarity of seals Nos. 3 and 4 of the reign of Darius to Nos. 6 and 5 respectively of Xerxes' time (see Pls. 3–4).

99. For dates of first and last occurrences see *OIP* LXV, Nos. 28–29, p. 134, and No. 33, p. 138 (where "468" B.C. should be corrected to "467").

100. For earliest documentation of seal No. 5 see *ibid.* Nos. 34–35, p. 140. This seal occurs also on tablets of years 1–5 of Artaxerxes I (464–459 B.C.); for date of last occurrence see *ibid.* No. 79, p. 196.

101. See *ibid.* No. 68, pp. 182 f., and No. 75, pp. 190 f.

102. Darius I died in November, 486, that is, in the 36th year of his reign (*SAOC* No. 24, pp. 14 and 29). Xerxes evidently ascended the throne on his father's death. Thereafter all "royal" inscriptions—such as, for instance, the legends of our seals—would certainly mention Xerxes—and not Darius—during the remainder of the "accession year." Xerxes' 1st "regnal year" started April 6, 485 B.C. (*ibid.* p. 29).

103. See *OIP* XLV, Nos. 11, 20, 26.

105. See *ibid.* Nos. 30 and 32.

104. See *ibid.* No. 25.

106. See *ibid.* Nos. 36, 44, 44a.

The tablets bearing these seals give us the *terminus ad quem* only, that is, we know the seals were carved prior to their first documented use:

- No. 26 in or prior to 483 B.C.
- No. 25 in or prior to 478 B.C.
- No. 30 in or prior to 470 B.C.
- No. 16 in or prior to 466 B.C.

As to the *terminus a quo*, while there is no doubt that all four seals belong to the Achaemenian period, and while some of them may have been carved in Xerxes' time, those in particular which are impressed on tablets of the early years of this king's reign may actually have been cut during the reign of Darius I (cf. seal No. 14; p. 16).<sup>107</sup> We have shown that seals bearing Darius' name were used to endorse official documents during the entire reign of his successor, as late as 466 B.C., about twenty years after the great king's death (see Table I, seal No. 2).

A third group of seals used during the reign of Xerxes is represented by a considerable number of impressions of cylinder seals, stamp seals, and signet rings associated on clay labels directly or indirectly with seals of Xerxes' time (see Table II).

We have mentioned that no impressions of the seals which are definitely identified as seals of Darius' reign were found on clay labels of the Treasury; but three officials of Xerxes impressed their seals (Nos. 5, 7, and 8), bearing their king's name, on such labels.

Seal No. 7 (owner unknown) occurs once only, on a label without other seal impressions, which therefore does not help us in dating further material.

Seal No. 8, the seal of Artasyras, is associated on labels with No. 5, and with five other seals (Nos. 11, 29, 43, 50, and 53), all of which are also impressed on labels bearing impressions of No. 5.

Seal No. 5 (owner unknown) is the key specimen on which Table II is based. The table shows that impressions of No. 5 appear in direct combinations with twenty-three other seals out of the total of seventy-seven seals comprising the Treasury collection. Combinations of No. 5 with impressions of other seals on individual labels are tabulated in the catalogue (see p. 21).

The top line of Table II lists by number all sealings of the Treasury. The first line of the top register ("Direct Associations") enumerates the sealings occurring with No. 5 on the same labels and the frequency of such associations; for example, seals Nos. 8 and 11 are each found three times on labels with No. 5, whereas No. 12 is only once associated with No. 5 on the same specimen, etc. The following lines of the top register repeat the seals associated with No. 5 and list all seals associated with them in turn. In this manner we determine associations of the second degree. For instance, No. 17, occurring once on the same label with No. 5, is associated on another label with No. 10, which does not appear on labels with the impression of No. 5. Thus, through No. 17, and, as the table shows, through Nos. 32 and 38 as well, No. 10 is indirectly associated with No. 5. Other second-degree associations with No. 5 are formed by the following: Nos. 21 (through No. 70), 28 (through No. 72), and 37 (through No. 32).

<sup>107</sup> Seal No. 26, for instance, must have been cut toward the end of Darius' reign if its pattern actually represents the king and his successor (see p. 10, n. 41).

The second register of Table II tabulates the seals occurring on the same labels with sealings associated in the second degree with No. 5 and thus marks associations of the third degree, namely Nos. 18, 48, 56, 62, 65, and 66.

The third register, listing third-degree associations, determines finally one fourth-degree association, namely No. 75, which is impressed on eighteen labels and always paired with No. 62.

In this manner we determined the direct and indirect associations of impressions of thirty-four cylinder seals, stamp seals, and signet rings with impressions of seal No. 5.

One of these seals is dated, namely No. 8, the seal of Artasyras (see above); but the chronological position of the other seals hinges naturally on the date of the key seal, No. 5. We have shown that this seal must have been cut between 486 and 467 B.C. (see p. 16). This fact supplies the *terminus a quo* for the labels to which seal No. 5 and any of the twenty-three directly associated seals are affixed. These clay labels could not have been attached to royal goods or records and endorsed by the owners of our seals prior to the beginning of Xerxes' reign, that is, 486 B.C. However, the partial dating of the labels through No. 5 impressions does not date equally the seals associated with No. 5 on the same labels. Contemporaneousness of use is proven beyond doubt; but even those seals directly associated with No. 5 on the same labels may have been carved during the reign of Darius I and owned by persons whose span of adult life or whose tenure of office extended over the reigns of both kings. A still earlier date is possible in a few instances, though implausible. Again, seal No. 5 was used on tablets as late as the 5th year of Artaxerxes I (459 B.C.). Theoretically, therefore, labels with seal No. 5 and associated impressions may belong to a period as late as the reign of this king. However, it is reasonable to assume that many or most of the seals directly or indirectly associated with seal No. 5 were cut during the time of Xerxes.

Indirect associations of seals with No. 5 indicate approximate contemporaneousness of use with seal No. 5. They do not even supply us with the *terminus a quo* for the labels on which they occur, as is determined by impressions of seal No. 5 found alone or directly associated with other seals on labels. Contemporaneous use of certain seals of this group is of course proven by their occurrence on the same label, as tabulated in the catalogue of seal impressions (pp. 18 ff.). The period of origin of seals and labels alike may be the reign of any of the first three Persepolitan kings mentioned above in connection with direct associations; but in this case too we are inclined to attribute to the time of Xerxes the origin of the greater portion of these seals, indirectly associated with No. 5, and of the labels on which they are impressed.

Table II (bottom register) lists forty-two seals which do not occur in combination with No. 5 or with seals associated with it. Six of these seals, Nos. 1-4, 24, and 33, belong to the time of Darius (see p. 16). Three more may possibly be assigned to the same ruler: Nos. 14 and 20 (see p. 16 and n. 96) and 26 (see n. 107). Five of these seals (excluding here Nos. 14 and 26) either bear the name of Xerxes or were impressed on tablets of this king's reign: Nos. 6, 7, 16, 25, and 30 (see p. 16). Impressions of No. 9 associated with 31, of 27 with 34, and of 47 with 67 on labels indicate contemporaneous use of each pair; but there are no clues for

dating them or the remaining twenty-two seals except for the fact that they are impressed on tablets (seals Nos. 15, 35, 36, and 42) and labels (seals Nos. 9, 13, 22, 27, 31, 34, 39, 45-47, 49, 51, 57, 59, 60, 63, 64, 67-69, 71, 73, 76, and

77) found in rooms and halls of the Persepolis Treasury under conditions similar to or identical with those of tablets ranging in time from the 30th year (492/91 B.C.) of Darius I to the 5th year (459 B.C.) of Artaxerxes I.<sup>108</sup>

## CATALOGUE

On the preceding pages we have summarized our observations regarding groups of related seal patterns, attempted to define the positions of the owners of the seals, and determined, as far as possible, the chronological relations of the seals impressed on tablets and labels from the Treasury.

In the catalogue we describe the pattern of each seal and tabulate all instances of its use. The first section deals with the impressions of cylinder seals, that is, it includes all sealings of the Treasury tablets and those which are found solely on uninscribed labels and, therefore, are not referred to in *OIP LXV*. In using the tabulations of the seals affixed to tablets the reader should consult the explanatory notes to Table I. The tablet numbers are those used by Cameron in *OIP LXV*.

The second section of the catalogue deals with the impressions of stamp seals and signet rings, which—in the Treasury—were found on labels only.

## IMPRESSIONS OF CYLINDER SEALS (NOS. 1-43)

## SEAL NO. 1: THE SEAL OF DARKAUSH

(Pl. 3, PT4 673, PT4 652)

*Pattern*.—Hero in combat with griffin; two winged pedestal man-bulls; date palm; Darius inscription.

*Hero*.—Head and feet in left profile; body in front view. Long beard, bareheaded (or wearing fillet), hair bunched at back of neck. Tucked candies, right leg bare to knee. Left hand holds curved or offset weapon; <sup>109</sup> right hand grasps throat of griffin. Feet rest on tiara and wing tip of right man-bull.

*Griffin*.—Right profile, erect, facing and attacking hero. Bird's face; horn(?) on top of head curves slightly forward; plain mane marked by line parallel to back of head and neck. Wing with feathers marked has upcurled tip. Both forelegs point straight at hero's waist; hind legs stand on wing tip (and tiara?) of left man-bull. Tail with arrow-shaped tip curves upward.

*Pedestal man-bulls*.—Identical, antithetic, forelegs in walking position. Bearded man's head, hair bunched at back of neck. Plain or slightly dentate tiara. Upcurved wing with faintly marked feathers. Bull's body; upcurved tail, tip looping forward. Right man-bull serves as pedestal for hero, left man-bull for griffin.

*Date palm*.—To left of scene. Convex-conoid crown; traces of leaf design. Bulbous date cluster suspended from crown base at either side of trunk with imbricate bark markings.

*Inscription*.—Behind (to right of) hero; in impression on PT4 673 repeated to left of scene. Trilingual (OP, EL., Bab.): "I (am) Darius . . ." <sup>110</sup>

## TABLETS WITH IMPRESSIONS OF SEAL NO. 1

Field No.	Tablet No.	Find-Spot in Treasury	King	Year of Reign	Ultimate Month	Addressor	Addressee
PT4 158	10	Room 23, near N. doorway to Room 33, 1.95 above floor	(Xerxes)	2	6B	Darkaush	Baradkama
PT4 737	13	Room 33, center area, ±.45 above floor	(Xerxes)	3	6	Darkaush	Baradkama
PT4 673	15	Room 33, center area, ±.75 above floor	(Xerxes)	3	12	Darkaush	Baradkama
PT4 746	16	Room 33, center area, ±.45 above floor	(Xerxes)	4	3	Darkaush	Baradkama
PT4 652	18	Room 33, center area, ±.75 above floor	(Xerxes)	4	6	Darkaush	Baradkama
PT4 747	19	Room 33, center area, ±.45 above floor	(Xerxes)	4	8	Darkaush	Baradkama
PT4 497	10a	Room 33, E. end, Plot HG 42	(Xerxes)			Darkaush	Baradkama, treasurer
PT4 1037	10b	Room 34, 2 m. E. of doorway to Room 33, floor	(Xerxes)			Darkaush	Baradkama, treasurer

## SEAL NO. 2: THE SEAL OF ARTATAXMA

(Pl. 1, PT4 403, PT5 182; Pl. 3, PT4 658, PT4 726)

*Pattern*.—Hero strangling two horned griffins below winged Ahuramazda symbol; two date palms; Darius inscription.

*Hero*.—Head in left profile; body in front view (feet not preserved). Long beard, hair bunched at back of neck. Dentate tiara; tucked candies. Grasps, with horizontally extended arms, throat of griffin at either side.

*Griffins*.—Identical (or almost so), in profile, erect. Body and head of lion. Wing straight back, feathers well marked. One hind leg ending in talon touches hero's thigh, forelegs touch his arm and side. Two goat horns in front view undulate horizontally from vertex; ear extends up and back; mane marked by serrate line. Short, bushy tail (unlike lion's tail; cf. No. 3) curves upward.

*Ahuramazda symbol*.—Centered above hero's head, bust of god in faintly marked circle, left profile. Bearded, hair bunched at back of neck. Plain tiara. Near (left) arm raised. Wings at either side of central circle are oblong rectangles marked by parallel horizontal lines, each wing subdivided into three sections by vertical lines. Bird tail below Ahuramazda bust. Appendage with slightly upcurled tip at either side of bird tail.

*Date palms*.—Apparently identical, flanking scene. Convex-conoid crown; fronds well marked. Date cluster suspended from crown base at either side of trunk with imbricate bark markings.

*Inscription*.—To left of scene. Trilingual (OP, EL., Bab.): "I (am) Darius . . ." <sup>111</sup>

108. We believe that seal No. 73 (together with the possibly earlier seal No. 20, but cf. p. 26, n. 122) was used synchronously with the Xerxes seal No. 5 (see p. 7). As to Nos. 49 and 69, each impressed on one label found in the earliest, rather sterile section of the Treasury, one might be justified in tentatively attributing both specimens to the reign of Darius I (see Vol. I 192 and 196).

109. Cf. e.g. Anubanini's curved ax with lunular blade in a Sarpul relief (*IAE*, Fig. 297, also Fig. 299) and weapons of Persian and Neo-Babylonian heroes on seals illustrated in Pope, *Survey IV*, Pl. 123 G, L.

110. See *OIP LXV* 55, n. 3.

111. See *OIP LXV* 55, n. 5.











## SEAL IMPRESSIONS

TABLETS WITH IMPRESSIONS OF SEAL NO. 2

FIELD No.	TABLET No.	FIND-SPOT IN TREASURY	KING	YEAR OF REIGN	MONTH		ADDRESSOR	ADDRESSEE
					Ultimate	Seal Date		
PT4 676	21	Room 33, center area, ±.75 above floor	(Xerxes)	4	12	10*	Artataxma	Baradkama, treasurer
PT4 726	22	Above Room 39, Plot HG 40, center W. line	(Xerxes)	6		9	Artataxma	Baradkama, treasurer of Parsa
PT4 680	27	Room 33, center area, ±.75 above floor	(Xerxes)	13		6	Artataxma	Vahush, treasurer at Parsa
PT4 740	48a	Room 33, center area, ±.45 above floor	(Xerxes)	(19?)			Artataxma	Vahush, treasurer
PT4 394	38a5	Room 33, column base B4, floor	(Xerxes)	19	10		Artataxma	Vahush, treasurer
PT4 552a	38a1	Room 33, at center of W. wall, 1.50 above floor, Plot HG 40	(Xerxes)	19	10		Artataxma	Vahush, treasurer at Parsa
PT4 646	38a6	Room 33, center area, ±.75 above floor	(Xerxes)	19	10		Artataxma	Vahush, treasurer
PT4 684	38a3	Room 33, center area, ±.75 above floor	(Xerxes)	19	10		Artataxma	Vahush, treasurer
PT4 826	38a4	Room 33, N. of column base A5, floor	(Xerxes)	19	10		Artataxma	Vahush, treasurer
PT4 897	38a2	Room 33, at N. wall, N. of column bases A3 and A4, floor	(Xerxes)	19	10		Artataxma	Vahush, treasurer
PT4 686	38	Room 33, center area, ±.75 above floor	(Xerxes)	19		10	Artataxma	Vahush, treasurer at Parsa
PT4 741	37	Room 33, center area, ±.45 above floor	(Xerxes)	19		11	Artataxma	Vahush, treasurer
PT5 182	42	Hall 38, at column base C5, .15 above floor	(Xerxes)	19		11	Artataxma	Vahush, treasurer at Parsa
PT4 403	41	Room 33, above column base B4	(Xerxes)	19		11	Artataxma	Vahush, treasurer
PT4 700	38a7	Room 33, center area, ±.75 above floor	(Xerxes)	19	11		Artataxma	Vahush, treasurer
PT4 689	42b	Room 33, center area, ±.75 above floor	(Xerxes)	19	12		Artataxma	Vahush, treasurer
PT4 848	46	Room 33, between column bases A3 and A4, floor	(Xerxes)	19	12		Artataxma	Vahush, treasurer
PT4 439	49b1	Room 33, at column base B3, floor to .50 above	(Xerxes)	19	11†		Artataxma	Ratininda, treasurer of Parsa
PT4 651	49b2	Room 33, center area, ±.75 above floor	(Xerxes)	19	12		[Artataxma]‡	Ratininda, treasurer of Parsa
PT4 636	49	Room 33, at column base A4, .85 above floor	(Xerxes)	20	1		Artataxma	Ratininda, treasurer of Parsa
PT4 952	49a3	Room 33, NE. corner, floor	(Xerxes)	20	1		Artataxma	Ratininda, treasurer of Parsa
PT4 440	49a1	Room 33, at column base B3, floor to .50 above	(Xerxes)	(20)	1		Artataxma	Ratininda, treasurer
PT4 648	49a2	Room 33, center area, ±.75 above floor	(Xerxes)	(20)	1		Artataxma	Ratininda, treasurer
PT4 366	59a2	Corridor 31, SE. corner of Plot HG 50	(Xerxes)	20	2		Artataxma	Ratininda, treasurer of Parsa
PT4 406	59	Room 33, above column base B4	(Xerxes)	20		2	Artataxma	Ratininda, treasurer
PT4 437	56	Room 33, at column base B3, floor to .50 above	(Xerxes)	20	2		Artataxma	Ratininda, treasurer of Parsa
PT4 438	53	Room 33, at column base B3, floor to .50 above	(Xerxes)	20	2		Artataxma	Ratininda, treasurer
PT4 645	55	Room 33, center area, ±.75 above floor	(Xerxes)	20	2		Artataxma	Ratininda, treasurer
PT4 677	58	Room 33, center area, ±.75 above floor	(Xerxes)	20		2	Artataxma	Ratininda, treasurer
PT4 656	52	Room 33, center area, ±.75 above floor	(Xerxes)	20	2		Artataxma	Ratininda, treasurer of Parsa
PT4 407	54	Room 33, above column base B4	(Xerxes)	20	2		Artataxma	Ratininda, treasurer
PT4 683	57	Room 33, center area, ±.75 above floor	(Xerxes)	20	2		Artataxma	Ratininda, treasurer of Parsa
PT4 896	59a1	Room 33, between and N. of column bases A2 and A3, floor	(Xerxes)	20	2		Artataxma	Ratininda, treasurer
PT4 647	63	Room 33, center area, ±.75 above floor	(Xerxes)	20	3		Artataxma	Ratininda, treasurer of Parsa
PT4 658	63a	Room 33, center area, ±.75 above floor	(Xerxes)	20			Artataxma	Ratininda, treasurer
PT4 849	68a	Room 33, between column bases A3 and A4, floor	(Xerxes)				Artataxma	Ratininda, treasurer
PT4 649		Room 33, center area, ±.75 above floor					[Artataxma]‡	

Further Tablets Mentioning Artataxma as Addressor (seal impressions destroyed or mutilated, but undoubtedly No. 2)

PT4 678	47	Room 33, center area, ±.75 above floor	(Xerxes)	19		12	Artataxma	Vahush, treasurer
PT4 679	48	Room 33, center area, ±.75 above floor	(Xerxes)	19		12	Artataxma	Vahush, treasurer
PT5 512	42a	Plot HF 49, loose dirt	(Xerxes)	(19?)			Artataxma	Vahush, treasurer of Parsa

\* See Table I, n. 17.

† Tablet was evidently written in the 12th month or later, after Ratininda had displaced Vahush as treasurer.

‡ Name destroyed; identified by seal.

## SEAL NO. 3: THE SEAL OF URATINDA (=RUMATENDA)

(Pl. 3, PT4 860, PT4 331)

*Pattern.*—Hero holding two inverted lions; two winged pedestal lions; date palm; Darius inscription.

*Hero.*—Head and feet in right profile; body in front view. Long beard, hair bunched at back of neck. Dentate tiara encircled by fillet(?); tucked candies with folds marked. Grasps, with extended arms, one hind leg of lion at either side.

*Inverted lions.*—Identical, in profile, regardant. Open jaws, serrate mane. Paws of one hind leg and one foreleg touch hero's hip and lower leg. Paw of other foreleg almost touches wing of pedestal lion. Tail loops upward and forward.

*Pedestal lions.*—Hero's feet stand on heads of two antithetic winged lions, sejant or couchant. Upper part only of each lion is preserved: head with open jaws, dentate mane, and wing of right lion (PT4 860); wing, upcurled tail, and serrate outline of mane of left lion (PT4 331).

*Date palm.*—To left of left lion. Roughly semicircular crown with traces of leaf design. Bulbous date cluster suspended from crown base at either side of trunk with imbricate bark markings.

*Inscription.*—To right of scene. Trilingual (OP, El., Bab.): "I (am) Darius . . ."112

TABLETS WITH IMPRESSIONS OF SEAL NO. 3

Field No.	Tablet No.	Find-Spot in Treasury	King	Addressor	Addressee
PT4 331	3	Room 33, at center of W. wall, in charcoal layer, .50 above floor	(Darius?)	Rumatenda*	Baradkama
PT6 279	3a	Hall 41, SE. of column base E6, floor	(Darius?)	Uratinda*	Baradkama
PT4 860		Room 33, at SE. corner of N. doorway, floor	(Darius?)	[Uratinda or Rumatenda]†	

\* See OIP LXV 86.

† Name destroyed; identified by seal.

## OBJECTS FROM THE PERSEPOLIS TERRACE

SEAL NO. 4: THE SEAL OF BARADKAMA  
(Pl. 4, PT4 332, PT4 601)

*Pattern.*—Hero holding two winged man-bulls; date palm.

*Hero.*—Head in right profile; body in front view (feet missing). Long beard with horizontal lines, hair bunched at back of neck. Dentate tiara; tucked candies, folds marked on lower right half; two horizontal dashes mark belt(?). Arms raised above shoulder line, hands grasping one foreleg of man-bull at either side.

*Man-bulls.*—Identical, rampant regardant. Head and headdress of man-bulls and hero identical. Upcurved wing, feathers marked. Bull's body, hind legs in walking position (PT4 601); one foreleg flexed in front, lower part vertical; other foreleg raised almost vertically and held by hero just below hoof. Tail not preserved.

*Date palm.*—Part of crown and globular trunk end to left of scene; leaves faintly marked. Faint globular date cluster suspended from crown base.

TABLETS WITH IMPRESSIONS OF SEAL NO. 4

Field No.	Tablet No.	Find-Spot in Treasury	King	Year of Reign	Ultimate Month	Addressor or Author	Addressee
PT4 601	1	Room 33, ca. 2 m. W. of column base A5, 1.20 above floor	(Darius)	32	12	Baradkama*	Shakka†
PT4 507	17	Room 33, Plot HG 41	(Xerxes)	4	4	(Baradkama)‡	
PT4 638	23	Room 33, at N. wall, .90 above floor, Plot HG 41, near NE. corner	(Xerxes)	6	12	(Baradkama)‡	
PT4 332	24	Room 33, at center of W. wall, in charcoal layer, .50 above floor	(Xerxes)	7	2	(Baradkama)‡	
PT4 370		Corridor 31, floor, Plot HG 50, SE. corner				(Baradkama)§	
PT4 786		Room 33, center, .30 above floor				(Baradkama)§	

\* The only tablet of letter type mentioning Baradkama as addressor and thus identifying his seal.  
† The treasurer, presumably.

‡ Tablet of memorandum type bearing (the treasurer) Baradkama's seal and thus identifying him as the author of the record.  
§ Fragment of tablet whose extant sealing end shows the seal of Baradkama.

## SEAL NO. 5

(Pl. 1, Tablet PT6 75; Pl. 2, Labels PT3 407, PT4 619, PT4 704, PT6 3; Pl. 4, Tablet PT4 650, Label PT6 215)

*Pattern.*—Hero holding two winged man-bulls below winged disk symbol; date palm; Xerxes inscription.

*Hero.*—Head and feet in right profile; body in front view. Long beard, hair bunched at back of neck. Dentate tiara; tucked candies with pronounced lengthwise fold between legs, incisions on upper part of garment. Arms raised above shoulder line, hands grasping one foreleg of man-bull at either side.

*Man-bulls.*—Identical, rampant regardant. Head identical with that of hero. Tiara without dentate crown, but two minute disks flank central projection on top. Upcurved wing, feathers well marked. Bull's body, hind legs in walking position; one foreleg extends forward horizontally and almost touches hero's side; other foreleg raised vertically and held by hero just below hoof. Tail undulates backward, broadened tip loops back toward body.

*Winged disk symbol.*—Bird tail of encircled disk centered above hero's head; faintly curved line (crescent?) on tail below circle. Appendage with upcurled tip at either side of tail. A wing at either side of encircled disk, feathers indicated, straight top, curved lower edge.

*Date palm.*—Fronds marked individually. No date clusters but discoid knob at crown base, from which rises lanceolate top of trunk. Lower section of trunk has imbricate bark markings.

*Inscription.*—Meant to be to right of scene. Monolingual (OP): "Xerxes the Great King."<sup>113</sup>

TABLETS WITH IMPRESSIONS OF SEAL NO. 5

Field No.	Tablet No.	Find-Spot in Treasury	King	Year of Reign	Ultimate Month
PT4 687	34	Room 33, center area, ±.75 above floor	(Xerxes)	19	8
PT4 744	35	Room 33, center area, ±.45 above floor	(Xerxes)	19	9
PT4 748	39	Room 33, center area, ±.45 above floor	(Xerxes)	19	10
PT4 650	40	Room 33, center area, ±.75 above floor	(Xerxes)	19	11
PT6 75	45	Hall 41, floor, Plot HG 70, center of W. line	(Xerxes)	19	12
PT4 599	51	Room 33, at N. wall, 1.60 above floor, Plot HG 41, near NE. corner	(Xerxes)	20	2
PT4 739	61	Room 33, center area, ±.45 above floor	(Xerxes)	20	2
PT4 333	62	Room 33, at center of W. wall, in charcoal layer, .50 above floor	(Xerxes)	20	3
PT4 405	67	Room 33, above column base B4	(Xerxes)	20	3
PT4 654	66	Room 33, center area, ±.75 above floor	(Xerxes)	20	3
PT4 905	64	Room 33, at N. wall, N. of column base A3, floor	(Xerxes)	20	3
PT4 672	70	Room 33, center area, ±.75 above floor	(Xerxes)	20	4
PT4 477	72	Room 33, between column bases B2 and B3, near floor	(Xerxes)	20	6
PT4 842	73	Room 33, at column base A4, .70 above floor	(Xerxes)	20	7
PT4 693	74	Room 33, center area, ±.75 above floor	(Xerxes)	20	7
PT4 441	76	Room 33, at column base B3, about floor level	(Artaxerxes I)	1	3
PT4 753	77	Room 33, center area, ±.45 above floor	(Artaxerxes I)	1	4
PT4 681	78	Room 33, center area, ±.75 above floor	(Artaxerxes I)	3	12
PT4 996	79	Room 34, center, 1.30 above floor	(Artaxerxes I)	5	12B
PT4 335		Room 33, at center of W. wall, in charcoal layer, .50 above floor			
PT4 396		Room 33, near column base B4, floor			
PT4 659		Room 33, center area, ±.75 above floor			
PT4 738		Room 33, center area, ±.45 above floor			

113. See *OIP* LXV 58, n. 8.



## OBJECTS FROM THE PERSEPOLIS TERRACE

*Date palm.*—Two date clusters suspended from base of (missing) crown. Imbricate bark markings on trunk.

*Inscription.*—Preserved portion to right of scene; perhaps meant to be on opposite side, balancing palm tree. Trilingual: "Xerxes [the (Great?) King]." OP *xa-ša-ya-a-ra-š[a-a : xš . . .]*. El. [<sup>l</sup>*k-še-ir-šá* [*šunki . . .*]]. Bab. [<sup>m</sup>*ḫi-ši-<sup>2</sup>-a[r-ši šarru . . .]*].<sup>115</sup>

## LABEL WITH TWO IMPRESSIONS OF SEAL NO. 7

Field No.	Find-Spot in Treasury
PT6 12	Room 45, in doorway to Hall 38, .35 above floor

## SEAL NO. 8: THE SEAL OF ARTASYRAS

(Pl. 5, Tablet PT4 471, Label PT4 549a)

*Pattern.*—Two Persians (duplicated hero) stabbing two crossed lions below winged disk symbol; date palm; Xerxes inscription.

*Persians.*—Identical, facing two crossed lions, which form center of scene. Head and feet in profile, body in half profile. Long beard, hair bunched at back of neck. Dentate tiara; tucked candies, folds marked on lower part. Quiver visible behind back, three tassels hang from quiver top. Above quiver, curved top of bow. Distant arm raised, hand grasping forelock of lion; near hand holds dagger pointing at lion's chest.

*Lions.*—Identical, symmetrically crossed at middle of body, in profile, erect, each facing a Persian. Open jaws. One raised forepaw touches Persian's elbow; other forepaw points toward his chest, almost touching it; hind legs in walking position. Tail curves downward, tip close to ground level.

*Winged disk symbol.*—Bird tail of encircled disk centered above lions. Appendage with upcurled tip at either side of bird tail. Wings subdivided into three lengthwise sections, feathers marked by parallel dashes, upper edges straight with ends slightly upcurved, lower edges curving to pointed tips above Persians' heads.

*Date palm.*—To right of right Persian. Individual neatly carved fronds. Date cluster suspended from crown base at either side of trunk with imbricate bark markings.

*Inscription.*—To left of scene. Monolingual (OP): "I (am) Xerxes the [Great?] King."<sup>116</sup>

## TABLETS WITH IMPRESSIONS OF SEAL NO. 8

Field No.	Tablet No.	Find-Spot in Treasury Room 33	King	Year of Reign	Ultimate Month	Addressor	Addressee
PT4 436	68	At column base B3, floor to .50 above	(Xerxes)	20	4	Artasyras	Ratininda, treasurer
PT4 471	75	Between column bases B4 and B5, floor	(Xerxes)	20	12	Artasyras	Ratenda,* treasurer
PT4 701		Center area, ±.75 above floor				[Artasyras]†	

\* See Table I, n. 21.

† Name destroyed; identified by seal.

## LABELS WITH IMPRESSIONS OF SEAL NO. 8

Field No.	Find-Spot in Treasury	Other Seals on Same Label					
PT4 549a	Room 33, at center of W. wall, 1.00–1.50 above floor						
PT4 804	Room 33, between column bases A4 and A5, floor	5		29		50	
PT4 980	Room 34, near center, 1.20 above floor		11	29			
PT4 1021	Hall 38, at S. wall, Plot HG 31, center W. line	5	11	29	43		
PT4 1040	Hall 38, N. of column base E5, 1.10 above floor						
PT4 1057	Hall 38, N. of column base E5, .60 above floor	5	11		43	50	53
Seals associated with No. 8		5	11	29	43	50	53

## SEAL NO. 9

(Pl. 2, PT6 62; Pl. 5, PT6 34, PT6 65)

*Pattern.*—Hero holding two winged horned lions. Horizontal axis of design complete, as shown by right lion appearing to left of left lion on PT6 34.

*Hero.*—Head in right profile; body in front view (legs missing). Short pointed beard, hair bunched at back of neck. Dentate tiara; tucked candies, double outlines on upper part, oblique folds marked on lower part. Arms raised to shoulder height, hands grasping lion's throat at either side.

*Lions.*—Identical, in profile, erect, facing hero. Jaws open; dentate mane; horn undulates forward from forehead (PT6 65). One wing, feathers marked, dentate lower edge, medial lengthwise groove, tip upcurved. One foreleg raised obliquely behind hero's arm; other foreleg points horizontally toward his side; hind legs in walking position. Tail loops upward toward body.

## LABELS WITH IMPRESSIONS OF SEAL NO. 9

Field No.	Find-Spot in Treasury	Other Seal on Same Label
PT5 807	Hall 38, between column bases C17 and C18, Plot HF 37	31
PT5 820	Hall 38, E. of column base C19, Plot HF 37	31
PT6 34	Room 47, at N. wall, NW. of doorway, 1.30 above floor	31
PT6 62	Room 47, at N. wall, 1.10 above floor, Plot HF 19, near W. line	31
PT6 65	Room 45, Plot HF 26	31
PT6 147	Room 47, W. end, Plot HF 18	31

115. Read by Cameron.

116. See *OIP LXV* 58, n. 10.

## SEAL IMPRESSIONS

## SEAL No. 10

(Pl. 5, PT4 769)

*Pattern.*—Hero holding two lions, all standing on base line, impressions perhaps incomplete.

*Hero.*—Head and feet in right profile; body in front view. Long beard, hair bunched at back of neck. Dentate tiara; tucked candies, double outlines, vertical folds marked on lower part. Arms raised above shoulder line, hands grasping forelock of lion at either side.

*Lions.*—Identical, in profile, erect, facing hero. Jaws open. Forepaws touch hero's side; hind legs in walking position. Tail loops upward.

## LABELS WITH IMPRESSIONS OF SEAL No. 10

Field No.	Find-Spot in Treasury Room 33	Other Seals on Same Label			
PT4 769 PT4 550a	At W. wall, near NW. corner, .70 above floor At center of W. wall, 1.00-1.50 above floor	17	18	32	38
Seals associated with No. 10		17	18	32	38

## SEAL No. 11

(Pl. 5, PT4 830)

*Pattern.*—Hero holding two winged bulls below winged disk symbol; date palm; inscription(?).

*Hero.*—Head and feet in right profile; body in front view. Long beard, hair bunched at back of neck. Dentate tiara, with fillet(?) suggested by two horizontal lines; tucked candies, folds marked on lower part, two horizontal dashes marking belt(?). Arms raised above shoulder line, hands grasping horn of bull at either side.

*Bulls.*—Identical, in profile, erect, facing hero. Horn curves forward; ear slants backward from top of head. Two wings, feathers marked, tips upcurved. One foreleg touches hero's armpit, the other his waist; hind legs in walking position. Tail with broadened tip loops back toward body.

*Winged disk symbol.*—Bird tail of encircled disk centered above hero's head, touches his tiara. Appendage with looped tip at either side of tail. Wing feathers marked, almost straight upper edges, lower edges curve to tips. Vaguely marked projection above encircled disk suggests Ahuramazda bust with arms extended toward right side.

*Date palm.*—To left of left bull. Only circular date cluster impressed.

*Inscription(?).*—To right of right bull, line suggesting border of inscription.

## LABELS WITH IMPRESSIONS OF SEAL No. 11

Field No.	Find-Spot in Treasury	Other Seals on Same Label					
PT4 551a PT4 581 PT4 830 PT4 880	Room 33, at center of W. wall, 1.00-1.50 above floor Room 34, near N. wall Room 33, N. of column base A5, floor Room 33, between column bases A3 and A4, floor	5		29	43		53
PT4 980 PT4 1016 PT4 1021 PT4 1057	Room 34, near center, 1.20 above floor Hall 38, at S. wall, Plot HG 31, center W. line Hall 38, at S. wall, Plot HG 31, center W. line Hall 38, N. of column base E5, .60 above floor		8	29	29		
		5	8	29	43	50	53
		5	8		43		53
Seals associated with No. 11		5	8	29	43	50	53

## SEAL No. 12

(Pl. 5, PT4 979)

*Pattern.*—Hero holding two winged(?) lions below winged disk symbol.

*Hero.*—Head in right profile; body in front view (legs missing). Long beard, hair bunched at back of neck. Plain tiara; tucked candies. Arms raised above shoulder line, hands grasping forelock of lion at either side.

*Lions.*—Identical, in profile, erect, facing hero. Jaws open. One foreleg with finger-like claws extends horizontally and touches hero's waist. Wing or other foreleg extends backward and ends in feathers or claws.

*Winged disk symbol.*—Bird tail of faintly encircled disk centered above hero's head; faint crescent-shaped line on tail. Appendage at either side of tail, end of appendage bent to form short horizontal line. Wing at either side of disk subdivided into three sections, individual feathers not marked. Crescent (horns?) on top of disk.

## LABELS WITH IMPRESSIONS OF SEAL No. 12

Field No.	Find-Spot in Treasury	Other Seals on Same Label		
PT4 451 PT4 979	Room 33, at column base B3, floor to .50 above Room 34, near center, 1.20 above floor	5	40	41
Seals associated with No. 12		5	40	41

## SEAL No. 13

(Pl. 5, PT6 300)

*Pattern.*—Hero holding two(?) man-ibexes. Impressions incomplete, but there is hardly a doubt that the two monsters are identical.

*Hero.*—Head in right profile; body in front view (feet missing). Long beard, hair bunched at back of neck. Tiara (faint); tucked candies. Arms raised above shoulder line, hands grasping horn of man-ibex, presumably at either side.

## OBJECTS FROM THE PERSEPOLIS TERRACE

*Man-ibexes.*—Probably identical (forelegs only of left ibex impressed), in profile, erect, facing hero. Horn, held by hero, curves upward from forehead; ear slopes back and up; bearded man's face with long nose. One foreleg raised obliquely beyond hero's arm; other foreleg extends almost horizontally to his side, which it touches; hind legs missing.

LABEL WITH FOUR IMPRESSIONS OF SEAL NO. 13

Field No.	Find-Spot in Treasury
PT6 300	Room 56, opposite E. doorway, floor

## SEAL NO. 14: THE SEAL OF ASPATHINES

(Pl. 6, PT4 506, PT4 757)

*Pattern.*—Two Persians, standing on two goat-fish and worshipping Ahuramazda symbol; inscription.

*Persians.*—Identical, in profile, facing central winged disk symbol with bust of Ahuramazda. Long beard, hair bunched at back of neck. Dentate tiara; tucked candies, folds at sleeves and lower part of gown carefully carved (see PT4 757). Right hand raised, palm upward in gesture of worship, almost touching tip of winged disk symbol; left hand holds three-lobed blossom. Feet stand on tail and back of goat-fish.

*Goat-fish.*—Anterior part of goat with fish tail. Identical, antithetic, in profile except for long, spreading horns shown in front view. One ear slanting up and back; circular eye; beard indicated. One foreleg closely flexed below chest; other foreleg bent in rising position. Faint scale markings on fish part with bilobed caudal fin.

*Ahuramazda symbol.*—Centered above horns of goat-fish, whose anterior prongs almost touch it. Bird tail subdivided into two sections, feathers marked by vertical flutes. Appendage at either side of bird tail ends in complete cirlet. Two wings, each subdivided into three lengthwise sections with well marked feathers, spread from encircled central disk. Above latter rises bust of Ahuramazda in left profile (preserved on PT4 757). Bearded, hair bunched at back of neck. Dentate tiara. Right arm raised obliquely, hand apparently in same position as that of flanking Persians, namely, palm upward; left arm straight forward, lying on upper edge of wing, hand seems to hold a ring.

*Inscription.*—To left of scene, outlined rectangle with five registers. Monolingual (El.): "Aspathines, son of Prexaspes."<sup>117</sup>

TABLETS WITH IMPRESSIONS OF SEAL NO. 14

FIELD NO.	TABLET No.	FIND-SPOT IN TREASURY ROOM 33	KING	YEAR OF REIGN	MONTH		ADDRESSOR	ADDRESSEE
					Ultimate	Seal Date		
PT4 752	12b	Center area, $\pm$ .45 above floor	(Xerxes)	2	12		[Aspathines]*	Baradkama, treasurer Baradkama, treasurer (at) Parsa Baradkama, treasurer
PT4 506	12	Near column base B4, floor	(Xerxes)	3		4	Aspathines	
PT4 757	12a	Center area, $\pm$ .45 above floor	(Xerxes)	3		4	Aspathines	
PT4 395	14	Near column base B4, floor	(Xerxes)	3		7	Aspathines	
PT4 742		Center area, $\pm$ .45 above floor					[Aspathines]*	

\* Name destroyed; identified by seal.

## SEAL NO. 15

(Pl. 6, PT4 682)

*Pattern.*—Two men, standing on two winged monsters and worshipping Ahuramazda symbol; inscription.

*Men (priests?).*—Identical, in profile, facing central Ahuramazda symbol. Bearded, hair bunched at back of neck, band or tassel suspended from hair (or headdress?). Plain robe with sleeves, fold apparently protruding in front. Right arm<sup>118</sup> raised obliquely, palm apparently upward in gesture of worship, slightly above but close to tip of wing of symbol; left arm extends straight forward, hand holding rod, or the like, with globular head. Feet on wing of monster.

*Monsters.*—Identical, antithetic, in profile. Horned winged lion in walking position. Horn undulates forward from top of head; ear slants backward; jaws open; mane indicated. Wing slightly raised above back line. Tail curves up and forward forming semicircle.

*Ahuramazda symbol.*—Centered above and between heads of monsters. Ring partly inclosing Ahuramazda bust in left profile, details of head uncertain. One arm straight forward, hand perhaps grasping ring; other arm raised. Wings with horizontal grooves. Bird tail below ring; appendage suspended from ring undulates at either side of tail.

*Inscription.*—Traces of two-line(?) inscription in cuneiform—perhaps Elamite<sup>119</sup>—at left end of impressions.

TABLET WITH THREE IMPRESSIONS OF SEAL NO. 15

Field No.	Tablet No.	Find-Spot in Treasury	Remarks
PT4 682	83	Room 33, center area, $\pm$ .75 above floor	No chronological data obtainable from tablet text

## SEAL NO. 16: THE SEAL OF MEGADATES

(Pl. 6, PT4 444, PT4 759)

*Pattern.*—Two Persians worshipping encircled Ahuramazda below winged disk symbol.

*Persians.*—Identical, in profile, at either side of encircled Ahuramazda. Bearded, hair bunched at back of neck. Dentate tiara (PT4 759), with fillet(?) suggested by two horizontal lines; tucked candies with double outline on wide sleeves and oblique folds on lower part. Right arm raised

117. See *OIP LXV*, No. 12, pp. 102-4.

118. Of man to the right. It is doubtful whether the position of the arms of the man to the left is the same or reversed.

119. See *OIP LXV*, No. 83, p. 199.

## SEAL IMPRESSIONS

obliquely, palm upward in gesture of worship; left hand holds three-lobed blossom in front of chest. Feet missing. Quiver with tripartite tassel behind back, top of bow behind head.

*Encircled Ahuramazda.*—Between worshipers. Large oval frame, base thicker than top, encircling image of Ahuramazda above knees; in right profile. Apparently identical in every feature with worshipers (including gesture of right hand and blossom carried in other).

*Winged disk symbol.*—Bird tail of encircled disk centered above Ahuramazda's head. Appendages not clearly impressed. Wing with feathers marked extends almost to right Persian's tiara (PT4 759).

TABLETS WITH IMPRESSIONS OF SEAL NO. 16

Field No.	Tablet No.	Find-Spot in Treasury Room 33	King	Year of Reign	Ultimate Month	Addressor	Addressee
PT4 244	36	At E. jamb of doorway to Room 23, 1.90 above floor	(Xerxes)	19	9	Megadates	Vahush*
PT4 444	44	At column base B3, near floor	(Xerxes)	19	12	Megadates	Vahush*
PT4 759	44a	Center area, ±.45 above floor	(Xerxes)	19		Megadates	Vahush*

\* Simply addressed "in the fortress" in the three texts with Megadates' seal, written perhaps after Vahush's term as treasurer had ended (see Table I).

## SEAL No. 17

(Pls. 2 and 6, PT4 704)

*Pattern.*—Two archers worshipping encircled Ahuramazda below winged disk symbol; pedestal animals or monsters.

*Archers.*—Identical, in profile, at either side of encircled Ahuramazda. Bearded, hair bunched at back of neck. Apparently bareheaded; tucked Persian candies with double outline on wide sleeves and oblique folds marked on lower part. Right arm<sup>120</sup> raised obliquely, palm apparently upward in gesture of worship; left hand holds one end of bow, whose string is almost parallel to the forward leg. Both archers stand on backs or wings of animals or monsters, of which vague fragments only are extant.

*Encircled Ahuramazda.*—Between archers. Large oval frame, base thicker than top, encircling bust of god in right profile. Long beard, hair bunched at back of neck. Dentate tiara; upper part of candies with double outline on wide sleeves. Right arm raised obliquely, palm upward; left hand holds three-lobed(?) blossom in front of chest.

*Winged disk symbol.*—Bird tail of symbol centered above god's head. Appendage with curled end at either side of bird tail. Serrate lower edges only of wings preserved.

LABELS WITH IMPRESSIONS OF SEAL NO. 17

Field No.	Find-Spot in Treasury Room 33	Other Seals on Same Label					
PT4 704	Between column bases A5 and B5, ca. .50 above floor	5	10	23	32	38	74
PT4 550a	At center of W. wall, 1.00-1.50 above floor				32	38	
Seals associated with No. 17		5	10	23	32	38	74

## SEAL No. 18

(Pl. 6, PT4 976, PT4 805)

*Pattern.*—Two horsemen supporting winged disk symbol and flanking central person, who supports encircled Ahuramazda.

*Horsemen.*—Identical, front view, but head in profile facing center of scene. Bashlyk with drooping tip. Arms raised at either side, outspread hands supporting wing of disk symbol. Legs hang down at either side of horse, which is shown in front view, but head in profile turned toward center of scene. Mane, ear, and straps of harness indicated.

*Winged disk symbol.*—Encircled disk centered above scene. Bird tail in two sections, with feathers indicated, fans out below disk. Traces of appendage undulate at either side of bird tail. Wing subdivided into three sections, feathers indicated, at either side of encircled disk.

*Encircled Ahuramazda.*—Below and almost touching bird tail of winged disk. Frame with thickened base inclosing faint bust of Ahuramazda in right profile. Squared tiara; rest indistinct.

*Central person.*—Head in right profile; body (missing below chest) in front view. Hair bunched at back of neck. Bareheaded. Arms raised at either side, with outspread hands supporting base of ring which encircles god's bust.

LABELS WITH IMPRESSIONS OF SEAL NO. 18

Field No.	Find-Spot in Treasury Room 33	Other Seal on Same Label
PT4 976	At center of N. wall	10
PT4 769	At W. wall, near NW. corner, .70 above floor	
PT4 805	Between column bases A4 and A5, floor	

## SEAL No. 19

(Pl. 2, PT4 619; Pl. 6, PT4 894, PT4 619)

*Pattern.*—Two winged bifront bull-men supporting winged disk symbol.

*Bull-men.*—Identical (as far as impressed), antithetic, erect. Upper body and bifront head of bareheaded man; nose, eye, mouth, and long beard marked on both faces. Double line (belt?) separates human part from posterior part of bull marked with oblique lines (hair?). Long drooping tail. Two wings with serrate lower edge and upcurled tip spread from either side of chest. Arms raised; outspread hands almost touch lower edge of wing of symbol, in gesture of support.

120. Of archer to left. It is doubtful whether the position of the arms of the archer to the right is the same or reversed.

## OBJECTS FROM THE PERSEPOLIS TERRACE

*Winged disk symbol.*—Bird tail of encircled disk centered between bull-men. Center part missing. Wing to right preserved: two lengthwise sections, feathers marked, serrate lower edge.

LABELS WITH IMPRESSIONS OF SEAL NO. 19

Field No.	Find-Spot in Treasury Room 33	Other Seals on Same Label					
PT4 619	N. of column base B5, ca. .80 above floor	5	44	54	55		
PT4 771	NW. corner, floor						
PT4 866	At column base A3, floor	5	44	54	55	70	
PT4 894	Between and N. of column bases A2 and A3, floor	5		54		70	
PT4 946	NE. corner, floor	5					72
PT4 947*	NE. corner, floor						
Seals associated with No. 19		5	44	54	55	70	72

\* With fragment of unclassified impression.

## SEAL NO. 20: THE SEAL OF DATAM[ES]

(Pl. 7, PT3 384, PT3 363)

*Pattern.*—Two priests flanking fire altar and table with mortar and pestle below winged disk symbol; inscription.

*First priest.*—In left profile. Bashlyk with knobs in front; projection below chin, suggesting beard, is probably part of bashlyk.<sup>121</sup> Mantle thrown over shoulders and extending to knees; trousers apparently of Median type. Right arm raised, hand holding three rods, presumably haoma twigs; left forearm straight forward, hand holding plain staff, which appears to rest on right (forward) foot.

*Second priest.*—In right profile, bent slightly forward. Round (mutilated) headdress, possibly bashlyk. Median dress: long-sleeved belted coat, tight trousers. Holds two sticks with extended lower arms toward fire on altar; ends of sticks touch left flame.

*Fire altar.*—To right of second priest. Inverted pyramidal, three-stepped top; shaft formed of three vertical lines; base mostly missing, perhaps pyramidal. Fire on altar top marked by five flames.

*Table with mortar and pestle.*—Between fire altar and first priest. Table with flat top, level with lowest step of altar top. Two legs shown connected by rung, upper half of each leg about twice as thick as lower half; lower end also thickened, suggesting animal paw or hoof. On center of table top stands mortar of same shape as those found in great numbers in Treasury (cf. Pls. 23:1 and 4, 24:10–12, 80:7) and usually bearing Aramaic inscriptions in ink. Upper part of pestle with characteristic discoid top (cf. Pls. 23:2–3 and 24:7–9) projects from mortar.

*Winged disk symbol.*—Centered above scene. Encircled disk; bird tail below subdivided into two sections. Appendage suspended obliquely at either side of tail. Wing of three or four lengthwise sections at either side of encircled disk, lower edges serrate, tips extend almost to heads of flanking persons.

*Inscription.*—Behind back of first priest. Monolingual (Aramaic): "Seal of Datam. . ."<sup>122</sup>

LABELS WITH IMPRESSIONS OF SEAL NO. 20

Field No.	Find-Spot in Treasury
PT3 363	Room 11, SE. corner, floor
PT3 373	Room 11, near center of E. wall, floor
PT3 384	Room 11, near center of E. wall, floor
PT3 385	Room 11, near center of E. wall, floor
PT3 408	Room 11, floor
PT4 5	Portico 18, at doorway to Room 11, floor

## SEAL NO. 21

(Pl. 7, PT4 198)

*Pattern.*—Ishtar(?) with rays and second figure; altar or symbol below crescent or circle.

*Ishtar(?).*—At left end of impression. Torso and part of face recognizable in right profile. Six rays radiate from semicircle in front. One arm straight forward, other raised.<sup>123</sup>

*Second figure.*—Near right end of impression. Badly distorted. In left profile. Apparently bearded. Gown covers one leg, other leg bare. One arm perhaps raised.

*Altar(?).*—Or possibly Nabu's wedge-shaped symbol. Between Ishtar(?) and second figure. Conoid base tapering upward to expanding wedge-shaped top; globular expansion below top seems to be accidental. Crescent or circle above.

LABEL WITH IMPRESSION OF SEAL NO. 21

Field No.	Find-Spot in Treasury	Other Seal on Same Label
PT4 198	Plot HG 51, loose dirt (Room 33?)	70

121. See bashlyk of dignitary behind Xerxes in Treasury reliefs (Vol. I, Pls. 121 and 123).

122. Read by Bowman. According to Cameron, this name is probably rendered in Greek as "Datames" (a hypocoristic form) and in Elamite as "Daddumania." Thus, it is possible that the owner of seal No. 20 is the scribe Dadumania (also Daddumania) who wrote memorandum-type tablets sealed by Artadara in the reign of Darius I (see Table I, seal No. 33). According to Cameron (*OIP* LXV 93) the scribe Dadda who wrote a letter-type tablet for Aspathines (seal No. 14) in the 3d year of Xerxes is the same person as Artadara's scribe. However, subsequently Cameron commented (by letter) that Datames may have been a fairly common name and that the identity of the owner of seal No. 20 with Artadara's scribe is very doubtful. There is another point that seemingly speaks against the attribution of seal No. 20 to the reign of Darius or to the early part of Xerxes' reign, namely the fact that none of the inscribed chert mortars and pestles from the Treasury can possibly be assigned a date prior to the 15th regnal year of Artaxerxes I (see p. 55 below). However, the specimens without inscriptions or the mortar and pestles of bronze (see p. 102) could have been used prior to that time.

123. For representations of Ishtar with ring of rays, see Ward, *Seal Cylinders of Western Asia*, Figs. 752 ff., pp. 248–54; also Frankfort, *Cylinder Seals*, esp. Pl. XXXIII b (= Ward's Fig. 752).



## SEAL IMPRESSIONS

27

SEAL No. 22  
(Pl. 7, PT4 706)

*Pattern.*—Two Persians at fire altar below Ahuramazda symbol.

*Persians.*—Identical (presumably), in profile, at either side of fire altar. Long square-tipped beard, hair bunched at back of neck. Fluted tiara; candys with wide sleeves. Right arm raised, hand with palm upward in gesture of worship; left hand holds symbol which may be three-lobed blossom.

*Fire altar.*—Similar to that of seal No. 23. Shaft marked by vertical lines; flat top, from which rises at either side a triangular process with terraced(?) inner edge; crescent or angle open at top in center, disk above it.

*Ahuramazda symbol.*—Centered above fire altar. Partly encircled bust of Ahuramazda in right profile. Bearded. Right hand raised, rest mutilated. Bird tail, with feathers marked, fans out below. Appendage visible to right of tail. Right wing with feathers marked and serrate lower edge. Left wing not impressed.

LABEL WITH IMPRESSION OF SEAL NO. 22

Field No.	Find-Spot in Treasury
PT4 706	Room 33, near center of W. wall, .50 above floor

## SEAL No. 23

(Pl. 2, PT4 704; Pl. 7, PT4 704, PT4 847)

*Pattern.*—Persian and Susian(?) flanking fire altar below winged disk symbol.

*Persian.*—To left of fire altar. In right profile (feet missing). Bearded, hair bunched at back of neck. Dentate tiara; candys, folds marked on lower part, wide sleeves. Left arm raised, hand (missing) either in position of respect (in front of mouth) or in position of worship (palm upward); lower right arm straight forward, hand holding handle of pitcher with concave cylindrical neck, from which rises lateral tube spout (or second handle) at opposite side above oblong body. Problematical object, perhaps tree, behind his back.

*Susian(?).*—To right of fire altar. In left profile (legs missing). Bashlyk with one end drooping on back; gown similar to that of Persian or identical with it. Left arm raised, palm upward in gesture of worship; right arm straight forward, hand perhaps holding some object. Problematical object with broad lower part and lancelike top (PT4 847) behind his back.

*Fire altar.*—Bifurcate top with terraced inner edges; one vertical line, symbolizing fire, rises from interior (see p. 9, n. 33). Altar top rests on slightly narrower shaft; base missing.

*Winged disk symbol.*—Centered above fire altar. Encircled disk, bird tail fanning out below. Appendage with upcurled end suspended at either side of bird tail. Wing with two or three lengthwise sections at either side of encircled disk, lower edges serrate, tips extending slightly beyond heads of Persian and Susian(?). Undulating line (horn?) with upcurled end extends at either side of top of encircled disk.

LABELS WITH IMPRESSIONS OF SEAL NO. 23

Field No.	Find-Spot in Treasury Room 33	Other Seals on Same Label				
PT4 343 PT4 704 PT4 847	Plot HG 51 Between column bases A5 and B5, ca. .50 above floor Between column bases A3 and A4, floor	5	17	32 32	38 38	74
Seals associated with No. 23		5	17	32	38	74

## SEAL No. 24: THE SEAL OF APPISHMANDA

(Pl. 8, PT4 844, PT4 336a)

*Pattern.*—Two Susian(?) guards flanking small date palm under winged disk symbol; inscription.

*Susian(?) guards.*—Identical, in profile, at either side of date palm and winged disk symbol. Short pointed beard, hair bunched at back of neck, hairdress (if bareheaded) or fillet(?) marked by undulating lines. Candys with wide sleeves. One arm obliquely up, other straight forward; hands on lance held vertically at attention. Quiver with three tassels on back. Curled end of bow visible above quiver and behind head; opposite end of bow protrudes beyond low end of quiver, bowstring roughly parallel to back of guard (left). Eight-pointed star above head of left guard; crescent above head of guard at right.

*Date palm.*—Central position, fronds marked individually. Bulbous date cluster suspended obliquely from crown base at either side of trunk with imbricate bark markings.

*Winged disk symbol.*—Encircled disk centered above palm tree. Bird tail with two tiers of feathers fans out below disk. Appendage with two or three points spreads at either side of tail. Feathers marked on wings divided in three sections. Horns marked on top of encircled disk.

*Inscription.*—To left of left guard (see PT4 336a). Monolingual (El.):

1. "This (is) the seal of Appishman-
2. da, son of . . . ." <sup>124</sup>

124. See *OIP* LXV 53, n. 55.

## OBJECTS FROM THE PERSEPOLIS TERRACE

TABLETS WITH IMPRESSIONS OF SEAL NO. 24

Field No.	Tablet No.	Find-Spot in Treasury	King	Year of Reign	Ultimate Month	Addressor	Addressee*
PT4 639	2	Room 33, at N. wall, .90 above floor, Plot HG 41, near NE. corner	(Darius)	32	12	Appishmanda	Baradkama
PT4 844	9	Room 33, NW. corner, floor	(probably Darius)	(32?)	4	Appishmanda	Baradkama
PT4 690	9a	Room 33, center area, $\pm$ .75 above floor	(probably Darius)			Appishmanda	Baradkama
PT4 692	9b	Room 33, center area, $\pm$ .75 above floor	(probably Darius)			Appishmanda†	Baradkama
PT4 336a		Room 33, at center of W. wall, in charcoal layer, .50 above floor				[Appishmanda]‡	
PT4 371		Corridor 31, .50 above floor, Plot HG 50				[Appishmanda]‡	
PT4 615		Room 33, NW. corner, 1.00 above floor				[Appishmanda]‡	
PT4 698		Room 33, center area, $\pm$ .75 above floor				[Appishmanda]‡	
PT4 785		Room 33, center area, .30 above floor				[Appishmanda]‡	
PT4 828		Room 33, N. of column base A5, floor				[Appishmanda]‡	
PT4 829		Room 33, N. of column base A5, floor				[Appishmanda]‡	
PT4 982		Room 34, center, 1.20 above floor				[Appishmanda]‡	
PT4 995		Room 34, center, 1.30 above floor				[Appishmanda]‡	

\* Undoubtedly the treasurer.

‡ Contents of fragmentary tablet unknown; addressor identified by seal.

† Seal impression destroyed; owner identified by addressor.

## SEAL NO. 25: THE SEAL OF MARREZZA

(Pl. 8, PT4 421)

*Pattern.*—Superposed animals at either side of date palm.*Animals in upper register.*—Ibex to right of central palm tree. Animal on opposite side perhaps identical. Both in profile, walking position; base line indicated. Ibex has long curved horn, ear, beard, short tail.*Animals in lower register.*—Lion to left of central palm tree. Animal on opposite side perhaps identical. Both in profile, walking position. Lion's jaws open. Animal to right has long upcurved tail. Base line perhaps indicated.*Date palm.*—Thick trunk (perhaps indicating protective fence) from which rises semicircular crown in slight relief with superposed individual fronds; three date clusters suspended at either side of trunk top.

TABLET WITH IMPRESSION OF SEAL NO. 25

Field No.	Tablet No.	Find-Spot in Treasury	King	Year of Reign	Ultimate Month	Addressor	Addressee
PT4 421	25	Room 33, E. of column base B4	(Xerxes)	7	10	Marrezza	Barishsha, treasurer of Parsa

## SEAL NO. 26

(Pl. 8, PT4 443, PT4 702, PT4 758)

*Pattern.*—Standing Persian received in audience by seated Persian; attendant; winged disk; horse(?).*Seated Persian.*—King(?) in right profile. Long beard, hair bunched at back of neck. Dentate tiara; candys with wide sleeves. Right arm raised, palm upward; left lower arm straight forward, hand holding three-lobed blossom (almost closed). Seated on simple stool with thick squared top, legs broadened near upper ends.*Persian standing to right.*—Of royal(?) rank (see p. 10). In left profile, facing king(?). Long beard, hair bunched at back of neck. Dentate tiara; candys with wide sleeves, oblique folds on lower part. Right arm raised, palm upward; left arm straight forward, hand holding three-lobed open blossom.*Attendant.*—Standing to left behind king(?). Head in right profile, body apparently in front view, lower part and one arm missing. Bearded, hair falling to shoulder and bunched at back of neck. Headdress mutilated; long garment. One arm, partly flexed, extends toward king(?), hand holding flail-like device (whip?) behind king's(?) shoulder.*Winged disk.*—Between heads of seated and standing Persians. Plain solid disk with superposed horns (curved line with raised ends). Oblong rectangular wing at either side of disk and bird tail below, no feathers marked. No appendages.*Horse(?).*—Behind standing Persian to right (meant to appear behind attendant to left). Quadruped, in right profile, posterior part only, walking position. Tail undulates down, tip upcurled or tied.

TABLETS WITH IMPRESSIONS OF SEAL NO. 26

Field No.	Tablet No.	Find-Spot in Treasury	King	Year of Reign	Ultimate Month
PT4 745	11	Room 33, center area, $\pm$ .45 above floor	(Xerxes)	2	12
PT4 443	20	Room 33, at column base B3, floor to .50 above	(Xerxes)	4	10
PT4 674	26	Room 33, center area, $\pm$ .75 above floor	(Xerxes)	10	9
PT4 387		Corridor 31, Plot HG 50			
PT4 702		Room 33, center area, $\pm$ .75 above floor			
PT4 758		Room 33, center area, $\pm$ .45 above floor			

## SEAL NO. 27

(Pl. 8, PT6 179)

*Pattern.*—Two men; inscription.*Men.*—Almost identical, as far as preserved; separated by faint vertical staff which ends(?) in two scrolls. Head in left profile; body in front view; walking position (head and legs of person to right missing). Hair apparently bunched at back of neck (person to left). Bareheaded; sleeveless(?) garment from shoulder to knees. One arm flexed, hand at waist; other arm suspended, elbow outward (person to left of staff) and inward (person to right).

## SEAL IMPRESSIONS

*Inscription.*—Probably meant to be between the two persons (see p. 10). Cuneiform: unintelligible.<sup>125</sup>

LABEL WITH TWO IMPRESSIONS OF SEAL NO. 27

Field No.	Find-Spot in Treasury	Other Seal on Same Label
PT6 179	Room 47, near S. wall, W. of doorway, floor	34

## SEAL NO. 28

(Pl. 9, PT4 948, PT4 865, PT4 330)

*Pattern.*—Persian leading three Greek captives and spearing kneeling Greek.

*Persian.*—In right profile; walking position. Bearded, hair bunched at back of neck. Headdress doubtful (or bareheaded?); tucked candys with wide sleeves. Raised right arm thrusting spear into neck of Greek kneeling in front; left arm extends obliquely down, hand grasping elbow of Greek. Quiver and bow (lower end) preserved on back. Rope apparently attached to belt and curving upward to neck of nearest captive.

*Greek captives.*—To left of (behind) captor. Apparently identical, in right profile marching in step. Nearest Greek shown in full; fronts of two others shown beyond and in front of nearest one and parallel to latter. Helmet with erect plume crest continued as appendage behind neck. Apparently garment of knee length, belted(?). Wrists seem to be tied together behind back; rope attached to captor's belt appears to be tied around captives' necks.

*Kneeling Greek.*—To right (in front) of captor. Body apparently in back view, kneeling leg in left profile, head in right profile turned away from captor, whose spear is thrust into Greek's neck. Plumed helmet; garment not marked. One limp arm held at elbow by captor; other arm holds circular or oval shield, faintly marked on overlapping impression.

LABELS WITH IMPRESSIONS OF SEAL NO. 28

Field No.	Find-Spot in Treasury Room 33	Other Seals on Same Label							
PT4 330	In charcoal layer, .50 above floor, Plot HG 51, NW. corner S. of column base A4, .70 above floor S. of column base A4, floor Between column bases A2 and A3, floor NE. corner, floor	37	48	56	65	65	66	66	72
PT4 840									
PT4 865									
PT4 871									
PT4 948									
Seals associated with No. 28		37	48	56	65	65	66	66	72

## SEAL NO. 29

(Pl. 9, PT4 830)

*Pattern.*—Combat of two warriors; problematical object between them.

*Left warrior.*—Head and legs in right profile facing second warrior, body in front view leaning forward. Bearded, hair bunched at back of neck. Headdress apparently knobbed in front;<sup>126</sup> coat and trousers distorted, perhaps of Median type. Position of arms suggests that left hand grasps (missing) bow while right hand pulls bowstring.

*Right warrior.*—Head and feet in left profile facing other warrior, rest in front view. Bearded, hair bunched at back of neck. Bareheaded; tucked Persian candys, double outlines on upper part, two horizontal dashes above waist, oblique folds marked on lower part. Arms flexed in front and behind, both hands grasping long spear which points obliquely at body of foe.

*Object.*—Indeterminate figure—perhaps dead foe—on base line between combatants.

LABELS WITH IMPRESSIONS OF SEAL NO. 29

Field No.	Find-Spot in Treasury	Other Seals on Same Label						
PT4 804	Room 33, between column bases A4 and A5, floor Room 33, N. of column base A5, floor Room 34, near center, 1.20 above floor Hall 38, at S. wall, Plot HG 31, center W. line Hall 38, at S. wall, Plot HG 31, center W. line	5	8	11	11	43	50	53
PT4 830								
PT4 980								
PT4 1016								
PT4 1021								
Seals associated with No. 29		5	8	11	11	43	50	53

## SEAL NO. 30

(Pl. 9, PT4 655)

*Pattern.*—Combat of two warriors; horse(?); Ahuramazda symbol; inscription(?).

*Left warrior.*—In right profile (feet missing), facing second warrior. Bashlyk covering chin (or helmet with chin guard); stiff jacket (leather[?] armor) marked with lozenge pattern and extending upward behind head, crosspiece at point presumably being head of battle-ax inserted in armor (see p. 11); form of garment below waist doubtful. Right arm raised, hand holding spear, which is thrust obliquely at enemy; left arm bent in front of chest, hand seizing top of antagonist's shield.

*Right warrior.*—Head in left profile facing left warrior, body in front view. Bearded, hair bunched at back of neck. Bareheaded; upper body apparently nude, perhaps belted skirt. One arm raised, hand holding club (or sword?); other arm bent in front of chest, hand holding shield with almost semicircular cross section. Spear of antagonist pierces shoulder.

*Horse(?).*—Head of animal, in right profile behind left warrior. Upright ear; eye and mane marked; forelock apparently tied into ornamental tassel. Rump partly preserved to right of (behind) right warrior.

125. According to Cameron, apparently in Babylonian script.

126. Cf. e.g. bashlyks of Median delegation (Vol. I, Pl. 27) or, perhaps more appropriately, hats of Scythian type worn, e.g., by the assumed Sogdians (*ibid.* Pl. 43).

## OBJECTS FROM THE PERSEPOLIS TERRACE

*Ahuramazda symbol.*—Between left warrior and animal's head and partly above latter. Partly encircled bust of Ahuramazda in right profile. One arm flexed in front of chest; other arm apparently forward, hand holding three-lobed blossom. Wing with two lengthwise sections at either side, feathers marked. Bird tail with two grooved sections below semicircle. Appendage with upcurled tip at either side of tail.

*Inscription(?)*.—Faint unintelligible markings above warriors resemble Aramaic characters.

TABLETS WITH IMPRESSIONS OF SEAL NO. 30

Field No.	Tablet No.	Find-Spot in Treasury	King	Year of Reign	Ultimate Month
PT4 655	30	Room 33, center area, $\pm$ .75 above floor	(Xerxes)	16	4
PT4 1014	32	Hall 38, at S. wall, Plot HG 31, center W. line	(Xerxes)	16	11

## SEAL No. 31

(Pls. 2 and 9, PT6 62)

*Pattern.*—Combat of two pairs of warriors.

*Left pair.*—Identical, as far as shown, in right profile facing foes. Front part of second warrior including arm beyond and in front of near warrior. Details vague, but Persian tiara suggested on several impressions. One arm raised in spear-thrusting position.

*Right pair.*—Identical, as far as shown, head in left profile facing foes, body in front view. Front part of second warrior beyond and in front of near warrior; raised arm and outline of shield also duplicated. Apparently bearded, hair bunched at back of neck. Domed (Median?) head-dress; tight, belted garment. One arm holds shield in front of body; other arm raised behind head in spear-throwing position.

LABELS WITH IMPRESSIONS OF SEAL NO. 31

Field No.	Find-Spot in Treasury	Other Seal on Same Label
PT5 807	Hall 38, between column bases C17 and C18, Plot HF 37	9
PT5 820	Hall 38, E. of column base C19, Plot HF 37	9
PT6 34	Room 47, at N. wall, NW. of doorway, 1.30 above floor	9
PT6 62	Room 47, at N. wall, 1.10 above floor, Plot HF 19, near W. line	9
PT6 65	Room 45, Plot HF 26	9
PT6 147	Room 47, W. end, Plot HF 18	9

## SEAL No. 32

(Pl. 2, PT4 704; Pl. 9, PT4 704, PT4 847)

*Pattern.*—Galley, two fish, date palm.

*Galley.*—Curved keel continuing as ram spur at prow. Stern upcurved and ending in head of problematical monster (PT4 847) in left profile, looking toward prow. Ribs indicated by paired lines. Central mast with furled sail below spar. One vertical and one oblique rope connect prow (bowsprit) and stern with sail. Twenty-one oars extend from side of ship obliquely downward and backward. On PT4 704 three rows of oar blades, suggesting three banks of oars, are apparently due to faulty (multiple) impression. Two large rudder blades below stern. Helmsman seems to sit at stern below monster head. At either side of mast, two bareheaded(?) persons in left profile. Forward part of ship seems to be higher than rest, except for monster's head.

*Fish.*—In left profile below oar blades (PT4 704). Eye, fins, and tail marked.

*Date palm.*—Behind stern of ship. Fronds marked individually. Pair of date clusters at either side of trunk with imbricate bark markings.

LABELS WITH IMPRESSIONS OF SEAL NO. 32

Field No.	Find-Spot in Treasury	Other Seals on Same Label						
		5	10	17	23	37	38	74
PT4 550a	Room 33, at center of W. wall, 1.00–1.50 above floor						38	
PT4 704	Room 33, between column bases A5 and B5, ca. .50 above floor	5	10	17	23		38	74
PT4 847	Room 33, between column bases A3 and A4, floor				23		38	
PT4 1072	Hall 38, Plot HG 21, SW.					37		
PT4 1058	Hall 38, 1 m. N. of column base E5, 1.10 above floor							
Seals associated with No. 32		5	10	17	23	37	38	74

## SEAL No. 33: THE SEAL OF ARTADARA

(Pl. 10, PT4 675, PT4 385, PT4 262, PT4 784)

*Pattern.*—Archer shooting lions; star and crescent; inscription.

*Archer.*—Beardless youth (or eunuch?). Kneeling, head and legs in right profile, body in front view. Facial features well carved. Hair bunched at back of neck. Bareheaded; tucked sandals, wide sleeves hanging below shoulders and leaving arms bare, folds marked, belt, left lower leg bare (PT4 784). Right arm flexed, pulling bowstring and holding arrow, which extends alongside and above left arm; left hand holds center of bow, which has hook-shaped ends.

*Lions.*—One erect lion facing archer, head and legs in left profile, body in front view. Jaws open. Mane indicated by imbricate pattern (PT4 784). Forelegs raised at either side. Tail looped back toward body. Struck by two arrows, one sticking in throat, second in belly. One small dead lion (best example on PT4 784) lying on back between legs of archer and erect lion. Head turned toward ground; two hind legs and one foreleg pointing obliquely upward. Tail horizontal. One arrow sticking in neck, one in belly.

*Star and crescent.*—Eight-pointed star behind head of archer. Crescent (PT4 385) between top of bow and head of erect lion.

## SEAL IMPRESSIONS

*Inscription.*—To left of archer (best example on PT4 262), also to right of erect lion (PT4 784, PT4 850). Monolingual (Aramaic): "Artadara who (is) chief . . ." <sup>127</sup>

TABLETS WITH IMPRESSIONS OF SEAL NO. 33

Field No.	Tablet No.	Find-Spot in Treasury	King*
PT4 262	7	Room 33, at NW. corner of S. doorway, 1.80 above floor	(Darius)
PT4 385	4	Corridor 31, Plot HG 50	Darius
PT4 445	6	Room 33, at column base B3, floor to .50 above	(Darius)
PT4 675	5	Room 33, center area, $\pm$ .75 above floor	Darius
PT4 743	8	Room 33, center area, $\pm$ .45 above floor	(Darius)
PT4 715		Room 33, near center E. wall, .70 above floor	
PT4 784		Room 33, center area, .30 above floor	
PT4 850		Room 33, between column bases A3 and A4, floor	

\* See Table I, n. 2.

## SEAL No. 34

(Pl. 10, PT6 179, PT6 40)

*Pattern.*—Mounted hunter; dead ibex.

*Hunter.*—In left profile, chest in front view. Bearded (or chin covered by bashlyk), hair or part of bashlyk at back of head and neck. Soft conoid headdress or bashlyk with pointed tip; tight-fitting coat and trousers. Mounted on horse without saddle; one hand seems to hold rein, other hand raised in spear-throwing position, but weapon not impressed.

*Horse.*—In jumping position, left profile. Forelegs and hind legs shown individually, parallel, close together; hoofs of forelegs seem to touch neck of ibex. Mouth open. Mane indicated. Long broad tail.

*Ibex.*—In right profile, prone. Curved horns below horse's chest; legs extend obliquely backward and touch ground line (PT6 40).

LABELS WITH IMPRESSIONS OF SEAL NO. 34

Field No.	Find-Spot in Treasury	Other Seal on Same Label
PT6 40	Room 45, W., Plot HF 26	
PT6 42	Room 45, Plot HF 26	
PT6 179	Room 47, near S. wall, W. of doorway, floor	27

## SEAL No. 35

(Pl. 10, PT4 605)

*Pattern.*—Winged lion(?) pursuing mouflon.

*Lion(?).*—Erect, in left profile. Head vague, jaws perhaps open.<sup>128</sup> One foreleg obliquely forward and upward; other foreleg straight forward; both ready to strike mouflon in front. Two wings backward from shoulder, dentate lower edges, tips slightly upcurled. Hind legs in walking position. Tail forms reverse S curve between hind legs. Problematical curved line (foreleg of mouflon?) behind lower wing.

*Mouflon.*—In front (to left) of lion(?). Running in left profile, but head reversed; curled horns in front view. One ear marked.

TABLET WITH IMPRESSION OF SEAL NO. 35

Field No.	Find-Spot in Treasury	Remarks
PT4 605	Room 33, at N. wall, 1.60 above floor, near NE. corner, Plot HG 41	No data obtainable from tablet text, which is illegible

## SEAL No. 36

(Pl. 10, PT4 841)

*Pattern.*—Winged bull-man hunting lion; Ahuramazda symbol.

*Bull-man.*—Human above waist, rest winged bovine. In right profile, but chest in front view. Bearded, hair bunched at back of neck. Bare-headed. Right arm flexed, hand holding bowstring and butt of arrow; left arm straight forward and slightly raised, hand holding center of bow with hook-shaped ends; arrow extends alongside and above left arm. Animal part in running position, two forelegs thrown forward horizontally, two hind legs close together. Wing, starting below waist of human part, has upcurled tip. Bull tail undulates obliquely upward, tip looping back toward body.

*Lion.*—To left of (behind) bull-man hunter on impression, meant to be to right (in front). In left profile, but chest presumably in front view, erect. Head missing. One foreleg raised obliquely; other foreleg missing, presumably in same position on opposite side. Tail loops back toward body. Entire position presumably similar to that of erect lion on seal No. 33 (cf. PT4 385).

*Ahuramazda symbol.*—Centered above rear end of bull-man. Bust of Ahuramazda in right profile. Bearded, hair bunched at back of neck. Tiara. One arm raised obliquely; other arm straight forward. Solid disk below Ahuramazda. Wing with two or three lengthwise sections and serrate lower edge at either side of disk. Bird tail below with appendage undulating at either side.

TABLET WITH IMPRESSION OF SEAL NO. 36

Field No.	Find-Spot in Treasury	Remarks
PT4 841	Room 33, at column base A4, .70 above floor	No data obtainable from tablet text, which is illegible

127. Translated by Bowman. See *OIP* LXV, No. 4, pp. 58 and 92.

128. Or reversed human(?) head.

## OBJECTS FROM THE PERSEPOLIS TERRACE

## SEAL No. 37

(Pl. 11, PT3 383)

*Pattern.*—Man in combat with lion; date palm; base line indicated.*Man.*—Head and feet in right profile, body in front view. Bearded. Truncated conoid turban-like headdress with central knob on top and two horizontal grooves, part of headdress (or hair?) extending to shoulder; belted sleeveless garment, V-shaped grooves on upper part, oblique folds on lower, tucked above left knee. Right arm suspended and pulled backward, hand holding dagger with pommel and guard; left arm straight forward, hand grasping throat of lion.*Lion.*—To right of man and facing him, in left profile, erect. Jaws open, mane marked. One forepaw grasping man's elbow; other foreleg straight forward, paw touching man's chest. Tail loops up and back toward body.*Date palm.*—To left of man. Almost circular crown with serrate outline. From center of crown rises line ending in small solid disk; three lines (without date clusters) suspended from crown base at either side of trunk with serrate outline.

LABELS WITH IMPRESSIONS OF SEAL NO. 37

Field No.	Find-Spot in Treasury	Other Seals on Same Label					
PT3 372	Room 11, near center of E. wall						
PT3 383	Room 11, near center of E. wall						
PT4 817	Room 33, center, .50 above floor						
PT4 871	Room 33, between column bases A2 and A3, floor	28		48	56		65
PT4 920	Room 33, between column bases A1 and A2, floor					62	
PT4 1072	Hall 38, Plot HG 21, SW.		32				
PT6 191	Room 50, Plot HG 01						66
Seals associated with No. 37		28	32	48	56	62	65

## SEAL No. 38

(Pls. 2 and 11, PT4 704)

*Pattern.*—Four-winged genie in combat with winged man-bull.*Genie.*—Head and legs in right profile, body in front view. Facial features distinct; bearded, hair bunched at back of neck. Bareheaded or domed hat; belted kilt. One arm suspended and pulled backward, hand holding dagger with pommel and guard; other arm straight forward, hand grasping throat or beard of man-bull. One pair of wings rising from shoulders, one wing drooping at either side between body and arms; feathers marked on all wings.*Man-bull.*—To right of genie, facing latter, in left profile. Man's head, bull's body, winged, erect. Facial features distinct; bearded, hair bunched at back of neck. Tiara with dentate(?) top. One foreleg flexed in front of chest; other foreleg extending obliquely upward, hoof almost touching tip of upper wing of genie. Wing extends straight backward, tip upcurled. Lower hind legs missing. Tail straight back, tip curling back toward body.

LABELS WITH IMPRESSIONS OF SEAL NO. 38

Field No.	Find-Spot in Treasury	Other Seals on Same Label					
PT4 550a	Room 33, at center of W. wall, 1.00-1.50 above floor		10	17		32	
PT4 704	Room 33, between column bases A5 and B5, ca. .50 above floor	5		17	23	32	74
PT4 847	Room 33, between column bases A3 and A4, floor				23	32	
PT4 832	Room 33, N. of column base A5, floor						74
PT4 969	Room 34, near center, 1.70 above floor	5					
Seals associated with No. 38		5	10	17	23	32	74

## SEAL No. 39

(Pl. 11, PT4 857, PT4 870)

*Pattern.*—Two Persians combating horned, winged monster; inscription.*Persians.*—Apparently identical, or almost so, in profile, at either side of monster. Bearded, hair bunched at back of neck. Dentate tiara; sandals with wide sleeves. Persian to left: one arm raised, hand grasping horn of monster; other arm lowered, hand holding dagger pointing at back of monster below its wing. Persian to right: one arm raised, hand apparently grasping horn of monster; other arm lowered, hand holding dagger stabbing monster in belly. Quiver with tassels (three?) visible on back of both Persians. Beak-shaped upper end of bow behind head of Persian to right. Lower end of bow visible below quiver of left Persian.*Monster.*—Body in right profile, erect, regardant. Bearded human head. Ibex(?) horn curves from forehead backward. Curved wing extending backward from shoulder, feathers marked, tip upcurled. One foreleg raised vertically, hoof apparently touching right Persian's arm; other foreleg flexed in front of chest, hoof touching right Persian's dagger. Hind legs in walking position. Short tail apparently curves down.*Inscription.*—Behind back of Persian to right. Monolingual (Aramaic): "Seal of . . ."; rest unintelligible.

LABELS WITH IMPRESSIONS OF SEAL NO. 39

Field No.	Find-Spot in Treasury Room 33
PT4 857	S. of column base A4, floor
PT4 870	Center, floor

## SEAL No. 40

(Pl. 11, PT4 979, PT4 1022)

*Pattern.*—Two winged man-ibexes; date palm.*Man-ibexes.*—Identical, antithetic, in profile, sejant. Human face with long curved nose; bearded, long hair covering back of neck. Long pointed ear rises obliquely from top of head; ibex horn curves from forehead over ear. Animal body, undulating tail resembling that of bovine.

## SEAL IMPRESSIONS

33

Foreleg with hoof marked braced obliquely against ground; hind legs vague. Wing with upcurled tip, feathers marked, subdivided into two sections.

*Date palm.*—Behind left man-ibex. Trunk with imbricate bark markings; semicircular crown with angular concave base. Two lines (without date clusters) at either side of trunk.

LABELS WITH IMPRESSIONS OF SEAL NO. 40

Field No.	Find-Spot in Treasury	Other Seals on Same Label		
PT4 451	Room 33, at column base B3, floor to .50 above		12	41
PT4 979	Room 34, near center, 1.20 above floor	5	12	41
PT4 1022	Hall 38, Plot HG 31			41
Seals associated with No. 40		5	12	41

## SEAL No. 41

(Pl. 11, PT4 1022, PT4 979)

*Pattern.*—Humped bull: In right profile, but curved long horns in front view, walking position. Pronounced hump on back. Large ear, eye, nostril, long chest hair, ribs, muscles, genitals, and part of tail indicated. Base line apparently marked.

LABELS WITH IMPRESSIONS OF SEAL NO. 41

Field No.	Find-Spot in Treasury	Other Seals on Same Label		
PT4 451	Room 33, at column base B3, floor to .50 above		12	40
PT4 867	Room 33, at column base A3, floor			
PT4 949	Room 33, NE. corner, floor			
PT4 979	Room 34, near center, 1.20 above floor	5	12	40
PT4 1022	Hall 38, Plot HG 31			40
Seals associated with No. 41		5	12	40

## SEAL No. 42

(Pl. 11, PT4 610)

*Pattern.*—Two intertwined gazelles (or two identical pairs of such); inscription.

*Gazelles.*—Identical, in profile, legs in jumping position. Necks intertwined, each gazelle looking backward.

*Inscription.*—To right (or left) of gazelles (or between pairs). Cuneiform: illegible.

TABLET WITH THREE IMPRESSIONS OF SEAL NO. 42

Field No.	Tablet No.	Find-Spot in Treasury	Remarks
PT4 610	82	Room 15, center, 1.70 above floor	No pertinent data obtainable from tablet text

## SEAL No. 43

(Pl. 11, PT4 831, PT4 581)

*Pattern.*—Ibex and tree symbol; base line indicated.

*Ibex.*—In right profile, walking position. Long curved horn, tip overlapping back of neck. Ear, eye, and nostril indicated. Short tail (tip distorted).

*Tree symbol.*—In front of animal. Stalk with two oblique branches on one side and horizontal branch with upcurled end on opposite side.

LABELS WITH IMPRESSIONS OF SEAL NO. 43

Field No.	Find-Spot in Treasury	Other Seals on Same Label					
PT4 581	Room 34, near N. wall	5		11			
PT4 831	Room 33, N. of column base A5, floor						53
PT4 1021	Hall 38, at S. wall, Plot HG 31, center W. line	5	8	11	29		
PT4 1057	Hall 38, N. of column base E5, .60 above floor	5	8	11		50	53
Seals associated with No. 43		5	8	11	29	50	53

## IMPRESSIONS OF STAMP SEALS AND SIGNET RINGS (NOS. 44-77)

## SEAL No. 44

(Pl. 2, PT4 619; Pl. 12, PT4 866)

*Type.*—Stamp seal with elliptical base.<sup>129</sup>

*Pattern.*—Herakles<sup>130</sup> on chariot drawn by two horses.

*Herakles.*—Head and legs in left profile; body almost in front view. Beardless. Bareheaded, nude. Right arm extending forward, hand holding reins; left arm bent at side, hand holding club-shaped object which protrudes beside shoulder. Problematical objects behind neck and to right of body. Left leg slightly forward; right thigh almost horizontal, rest of leg not shown.

129. As indicated by the seal impression.

130. As suggested by Gisela M. A. Richter.

## OBJECTS FROM THE PERSEPOLIS TERRACE

*Chariot*.—Traces of vertical and horizontal lines mark anterior part. Part of one wheel. Rest missing.

*Horses*.—Overlapping, in left profile, galloping. Mane marked. Harness not impressed. Ground line perhaps faintly indicated.

LABELS WITH IMPRESSIONS OF SEAL NO. 44

Field No.	Find-Spot in Treasury Room 33	Other Seals on Same Label				
PT4 604	Near center of W. wall, Plot HG 41					
PT4 619	N. of column base B5, ca. .80 above floor	5	19	54	55	
PT4 705	Near center of W. wall, .50 above floor, Plot HG 41			54	55	
PT4 866	At column base A3, floor	5	19	54	55	70
Seals associated with No. 44		5	19	54	55	70

## SEAL NO. 45

(Pl. 12, PT6 134)

*Type*.—Stamp seal with ovate base.

*Pattern*.—Athena on quadriga.

*Athena*.—Only upper part visible. Head in right profile; chest in front view. Greek helmet (with ornamental crest?); chest armor. Part of circular or oblong shield held to right of Athena by left arm. Right arm not impressed.

*Quadriga*.—Chariot not shown. Horses identical but for heads in alternating left and right profile, bodies in front view, standing. Head ornaments or hair locks shown between ears. Leg joints (and hoofs?) suggest use of drill.

LABEL WITH SINGLE IMPRESSION OF SEAL NO. 45

Field No.	Find-Spot in Treasury
PT6 134	Room 50, SW. corner, floor

## SEAL NO. 46

(Pl. 12, PT4 509)

*Type*.—Stamp seal (or signet ring?) with elliptical or ovate base.

*Pattern*.—Greek warrior in defensive posture: Head and legs in right profile; chest almost in front view. Beardless. Greek helmet with ornamental crest(?); otherwise nude. Squatting on right leg, left leg in kneeling position. Right arm suspended, slightly bent, behind body, hand holding dagger horizontally. Left hand protrudes beyond left knee and holds circular or oblong shield, segment of which extends from chin to right edge of impression.

LABEL WITH SINGLE IMPRESSION OF SEAL NO. 46

Field No.	Find-Spot in Treasury
PT4 509	Room 33, Plot HG 41

## SEAL NO. 47

(Pl. 12, PT6 43, PT6 116)

*Type*.—Stamp seal with elliptical base.

*Pattern*.—Man in gesture of prayer: In left profile, head lowered, standing. Beardless. Headdress doubtful, nude. Right arm flexed in front of chest, hand touching hair or headdress above forehead; left arm flexed touching side and chest, hand slightly cupped on chest below chin, palm toward body. Right leg (mutilated) probably vertical; left leg slightly bent and set back. Leaning against curved object, perhaps shield, which extends toward lower edge of impression.

LABELS WITH IMPRESSIONS OF SEAL NO. 47

Field No.	Find-Spot in Treasury Room 45	Other Seal on Same Label
PT6 43	W. end, Plot HF 26	67
PT6 116	W. end, floor, Plot HF 26	67

## SEAL NO. 48

(Pl. 12, PT6 316, PT4 871)

*Type*.—Stamp seal with elliptical or circular base.

*Pattern*.—One kneeling and one standing man.

*Kneeling man*.—Head and legs in right profile, head slightly raised, facing standing man; chest almost in front view. Beardless. Nude. Right arm flexed, lower arm raised vertically, hand perhaps holding some object; left lower arm extended obliquely toward standing man (PT6 316). Apparently squatting on both legs, perhaps kneeling on low stool.

*Standing man*.—Head and legs in left profile, head apparently slightly lowered, facing kneeling man; chest almost in front view. Beardless.



## SEAL IMPRESSIONS

35

Nude, except for fabric draped about loins and left arm. Right arm extended forward (flexed?), hand holding problematical object above and in front of head of kneeling man. Left arm bent, touching side of body. Right leg almost vertical; left leg slightly bent and set back.

LABELS WITH IMPRESSIONS OF SEAL NO. 48

Field No.	Find-Spot in Treasury	Other Seals on Same Label				
PT4 871	Room 33, between column bases A2 and A3, floor	28	37	56	65	66
PT6 121*	Hall 41, Plot HF 79, between column bases H4 and I4, .85 above floor					
PT6 303	Room 56, ca. 1 m. S. of E. doorway to Hall 41, .60 above floor					
PT6 316	Room 56, N. part, at E. wall, floor					
PT6 320	Room 56, near PT6 316, but .20 above floor					

\* Same impression on three sides.

## SEAL No. 49

(Pl. 12, PT6 441)

*Type.*—Stamp seal with elliptical or ovate base.

*Pattern.*—Kneeling man: In right profile, head slightly lowered, facing vaguely impressed rodlike device to right. Beardless. Nude. Right arm bent, extending down and forward. Squatting on right leg.

LABEL WITH SINGLE IMPRESSION OF SEAL NO. 49

Field No.	Find-Spot in Treasury
PT6 441	Hall 73, Plot IG 31, NW. corner

## SEAL No. 50

(Pl. 12, PT4 1017)

*Type.*—Stamp seal with circular base.

*Pattern.*—Man's head: In right profile. Ungroomed beard, mustache, fleshy nose and lips; bushy hair or fur cap. Neck not indicated.

LABELS WITH IMPRESSIONS OF SEAL NO. 50

Field No.	Find-Spot in Treasury	Other Seals on Same Label					
PT4 804	Room 33, between column bases A4 and A5, floor	5	8		29		
PT4 1017	Hall 38, at S. wall, Plot HG 31, center W. line						
PT4 1057	Hall 38, N. of column base E5, .60 above floor	5	8	11		43	53
Seals associated with No. 50		5	8	11	29	43	53

## SEAL No. 51

(Pl. 12, PT5 248)

*Type.*—Probably stamp seal with elliptical base.

*Pattern.*—Running man; problematical object.

*Man.*—Head and right leg in left profile; body and left leg in front view. Probably beardless and bareheaded, nude. Right arm distorted on impression; left arm bent and raised above head. Right leg bent in running position; left leg straight, set back.

*Problematical object.*—To right of man.<sup>131</sup>

LABEL WITH IMPRESSION OF SEAL NO. 51

Field No.	Find-Spot in Treasury	Other Seal on Same Label
PT5 248	Hall 38, near column base C5, Plot HG 20	Fragmentary impression of unnumbered (cylinder?) seal: stereotyped Persian with hair bunched at back of neck, tiara, tucked candies (see p. 14)

## SEAL No. 52

(Pl. 12, PT6 8, PT6 154)

*Type.*—Stamp seal with elliptical base.

*Pattern.*—Two wrestlers(?).

*Left wrestler.*—In right profile, possibly kneeling, body bent forward over back of other wrestler. Beardless. Bareheaded, nude. Arms seem to hold other wrestler's neck, pressing his head against abdomen.

*Right wrestler.*—In left profile, body bent forward at right angle. Head indistinct. Nude.

LABELS WITH IMPRESSIONS OF SEAL NO. 52

Field No.	Find-Spot in Treasury Room 47	Other Seal on Same Label
PT6 7	NE. corner, 1.90 above floor	5
PT6 8	NE. corner, 1.90 above floor	5
PT6 149	At N. wall, .20 above floor, Plot HF 19, W. line	5
PT6 154	At N. wall, floor, Plot HF 19, ca. 2 m. E. of W. line	5

131. Miss Richter's comment: "Is there a dog on one side of the man, or perhaps even two dogs? (Aktaion?)"

## OBJECTS FROM THE PERSEPOLIS TERRACE

SEAL No. 53  
(Pl. 12, PT4 831)

*Type.*—Signet ring with pointed elliptical bezel (left end of impression on PT4 831 nicked by hoop).

*Pattern.*—Man and horse.

*Man.*—In left profile, standing, head raised, facing head of horse. Apparently beardless. Bareheaded, probably nude. Left arm obliquely forward and up, hand holding horse's head, probably at reins (not visible). One leg bent and set forward. Entire position suggests struggle with unruly animal.

*Horse.*—In right profile, standing, head perhaps thrown back. Foreleg possibly raised in partial rearing position. Bushy tail.

LABELS WITH IMPRESSIONS OF SEAL NO. 53

Field No.	Find-Spot in Treasury	Other Seals on Same Label				
PT4 830	Room 33, N. of column base A5, floor			11	29	
PT4 831	Room 33, N. of column base A5, floor					43
PT4 880	Room 33, between column bases A3 and A4, floor			11		
PT4 1057	Hall 38, N. of column base E5, .60 above floor	5	8	11		43 50
Seals associated with No. 53		5	8	11	29	43 50

## SEAL No. 54

(Pl. 2, PT4 619; Pl. 13, PT4 894, PT4 705)

*Type.*—Signet ring with pointed elliptical bezel (illustrated impressions nicked by hoop).

*Pattern.*—Standing man: Upper body in right profile, lower body in half profile. Beardless, nude. Right arm flexed and raised; object (garment?) hanging from left lower arm along thigh. Right leg straight, left leg slightly bent and set forward.

LABELS WITH IMPRESSIONS OF SEAL NO. 54

Field No.	Find-Spot in Treasury Room 33	Other Seals on Same Label				
PT4 619	N. of column base B5, ca. .80 above floor	5	19	44	55	
PT4 705	Near center of W. wall, .50 above floor, Plot HG 41			44	55	
PT4 866	At column base A3, floor	5	19	44	55	70
PT4 894	Between and N. of column bases A2 and A3, floor	5	19			70
Seals associated with No. 54		5	19	44	55	70

## SEAL No. 55

(Pl. 2, PT4 619; Pl. 13, PT4 705, PT4 619)

*Type.*—Signet ring with circular or elliptical bezel (illustrated impressions nicked by hoop).

*Pattern.*—Man and symbol.

*Man.*—In right profile, seated. Bearded. Bashlyk with conoid top, one end hanging parallel to man's back; rest of dress doubtful except for low boots. Horizontal dash marks seat of stool. Right leg slightly bent, foot resting on ground line. Left leg pulled up, foot seems to rest on second stool, top and one leg of which are visible. Right arm seems to extend to left boot top as though pulling at it; left arm hidden behind left leg.

*Symbol.*—Vertical rod beside left foot of man. Crescent-shaped head (horns or bird?).

LABELS WITH IMPRESSIONS OF SEAL NO. 55

Field No.	Find-Spot in Treasury Room 33	Other Seals on Same Label				
PT4 619	N. of column base B5, ca. .80 above floor	5	19	44	54	
PT4 705	Near center of W. wall, .50 above floor, Plot HG 41			44	54	
PT4 866	At column base A3, floor	5	19	44	54	70
Seals associated with No. 55		5	19	44	54	70

## SEAL No. 56

(Pl. 13, PT4 871)

*Type.*—Probably signet ring with pointed elliptical bezel.

*Pattern.*—Standing person: Nude. One hand in front of face; other hand at pubic region. One leg slightly advanced. Distorted impressions.

LABELS WITH IMPRESSIONS OF SEAL NO. 56

Field No.	Find-Spot in Treasury Room 33	Other Seals on Same Label				
PT4 871	Between column bases A2 and A3, floor	28	37	48	65	66
PT4 899	At N. wall, between and N. of column bases A3 and A4, floor					66
Seals associated with No. 56		28	37	48	65	66

## SEAL IMPRESSIONS

37

SEAL No. 57  
(Pl. 13, PT6 100)

*Type.*—Stamp seal (or cylinder seal?) of unknown shape.

*Pattern.*—Persian at altar(?).

*Persian.*—Upper part mutilated, lower part in right profile. Tucked candys. Left leg forward.

*Altar(?)*.—Gatelike façade with paired vertical lines at either side. Foundation (terraced?) blurred. Two triangular(?) projections on top, similar to tops of altars of seals Nos. 22–23 and cylinder seal PT6 699 (Pl. 15).

## LABEL WITH SINGLE IMPRESSION OF SEAL NO. 57

Field No.	Find-Spot in Treasury
PT6 100	Room 47, NE. corner, .10 above floor

SEAL No. 58  
(Pl. 2, PT6 3; Pl. 13, PT6 22, PT6 3)

*Type.*—Stamp seal with elliptical base.

*Pattern.*—Persian archer (see p. 14): In left profile. Bearded, hair bunched at back of neck. Dentate tiara; tucked candys, right leg bare to knee. Kneeling-running position (right leg almost kneeling; left leg, balancing on toes, in running position). Right arm, slightly bent, extended forward, hand holding bow, which is bent (illogically; cf. left hand) to semi-elliptical form. Arrow not shown. Left arm flexed at side, hand holding spear (well marked on PT6 22), which slants backward across near shoulder.

## LABELS WITH IMPRESSIONS OF SEAL NO. 58

Field No.	Find-Spot in Treasury Room 47	Other Seal on Same Label
PT6 3	At center of E. wall, 1.90 above floor	5
PT6 5	NE. corner, 1.90 above floor	5
PT6 6	NE. corner, 1.90 above floor	
PT6 21	1.90 above floor, Plot HF 19, near E. line	5
PT6 22	At NE. corner of doorway, 1.50 above floor	5
PT6 23	Center E., 1.30 above floor	5
PT6 111	N. of doorway, near N. wall, .60 above floor	5
PT6 112	N. of doorway, near N. wall, .60 above floor	5
PT6 113	Near NE. corner of doorway, .60 above floor	5

SEAL No. 59  
(Pl. 13, PT6 168)

*Type.*—Probably stamp seal with elliptical base.

*Pattern.*—Persian in combat with lion.

*Persian.*—In right profile, but chest in front view. Bearded, hair bunched at back of neck. Bareheaded; candys(?) perhaps tucked above left knee. Position of legs similar to No. 58 (kneeling-running). Right arm, slightly bent, extends backward, hand probably holding dagger (not impressed). Left arm straight forward, hand seems to grasp forelock of lion.

*Lion.*—Erect, in left profile, facing man. Jaws open. Forelegs extend toward chest and left arm of Persian.

## LABEL WITH SINGLE IMPRESSION OF SEAL NO. 59

Field No.	Find-Spot in Treasury
PT6 168	Room 50, loose dirt, Plot HG 01

SEAL No. 60  
(Pl. 13, PT4 501)

*Type.*—Stamp seal with elliptical base.

*Pattern.*—Persian in combat with winged lion.

*Persian.*—In right profile. Bearded, hair bunched at back of neck. Plain tiara; tucked candys, left leg bare to knee. Kneeling-running position (see No. 58). Right arm drawn back, hand holding dagger. Left arm straight forward, hand grasping forelock of monster.

*Winged lion.*—In left profile, erect, facing Persian. Jaws open. Ear indicated behind forelock. Forepaws curve forward and upward. Body of lion, but bushy (blurred?) tail. Wing with serrate edge and slightly upcurled tip. Hind legs may end in talons. Lion stands on lower level than Persian.

## LABEL WITH IMPRESSION OF SEAL NO. 60

Field No.	Find-Spot in Treasury	Other Seals on Same Label
PT4 501	Room 14, N., in charcoal layer	Two vague impressions

## OBJECTS FROM THE PERSEPOLIS TERRACE

SEAL NO. 61  
(Pl. 13, PT6 215)

*Type.*—Stamp seal with elliptical, almost circular base.

*Pattern.*—Neo-Babylonian. Priest at altar with *mušhuš* monster; miscellaneous symbols.

*Priest.*—In right profile, standing. Bearded, hair bunched at back of neck. Domed headdress; long robe. Right arm raised, palm upward.

*Altar.*—Only top and row of vertical rungs preserved.

*Mušhuš.*—Couchant on top of altar, in left profile. Slender body; long neck; pointed muzzle; one ear; one horn (or two horns). Tail undulates obliquely upward.

*Miscellaneous symbols.*—Spear of Marduk and two styli of Nabu rising from back of *mušhuš*. Crescent near upper edge of impression, above head of *mušhuš*. Crook behind back of priest.

LABEL WITH IMPRESSIONS\* OF SEAL NO. 61

Field No.	Find-Spot in Treasury	Other Seal on Same Label
PT6 215	Room 51, near center of E. wall, floor	5†

\* In pairs on two sides. † On two sides.

SEAL NO. 62  
(Pl. 13, PT4 774, PT6 293)

*Type.*—Stamp seal with elliptical base.

*Pattern.*—Neo-Babylonian. Priest at altar with *mušhuš* monster; miscellaneous symbols. Drill used extensively.

*Priest.*—In right profile, standing. Bearded, hair bunched at back of neck. Domed headdress; long robe. Right arm raised.

*Altar.*—Two horizontal lines each at top and base; row of vertical rungs.

*Mušhuš.*—Couchant on top of altar, in left profile, conventionalized. Long neck and head; one ear or horn. Tail undulates upward.

*Miscellaneous symbols.*—Spear of Marduk and two styli of Nabu rising from back of *mušhuš*. Crescent touching priest's headdress.

LABELS WITH IMPRESSIONS OF SEAL NO. 62

Field No.	Find-Spot in Treasury	Other Seals on Same Label	
PT4 774	Room 33, NW. of center, .30 above floor	37	75
PT4 920	Room 33, between column bases A1 and A2, floor		
PT6 48	Hall 41, between column bases H3 and H4, .80 above floor, Plot HF 79		75
PT6 118	Hall 41, .25 above floor, Plot HF 77, near SE. corner		75
PT6 148	Room 47, W. part		
PT6 261	Hall 41, between column bases F9 and G9, .30 above floor, Plot HF 77		75
PT6 262	Hall 41, between and E. of column bases F9 and G9, .35 above floor, Plot HF 77		75
PT6 284	Room 55, N. of doorway, near floor		75
PT6 291	Room 56, loose dirt		75
PT6 293	Room 56, S. part, near W. wall, floor		75
PT6 298	Room 56, S. part, near E. wall, .40 above floor		75
PT6 301	Room 56, in N. doorway		75
PT6 306	Room 56, at SW. corner of E. doorway, .75 above floor		75
PT6 307	Room 56, at SW. corner of E. doorway, 1.10 above floor		75
PT6 308	Room 56, NE. corner, .40 above floor		75
PT6 309	Room 56, NE. corner, .40 above floor		75
PT6 311	Room 56, in E. doorway, .35 above floor		75
PT6 314	Room 56, in E. doorway, floor		75
PT6 317	Room 56, at E. wall, N. of E. doorway, .20 above floor		75
PT6 318	Room 56, at E. wall, N. of E. doorway, .20 above floor		75
PT6 323	Room 56, ca. 2 m. NW. of E. doorway, floor		75

SEAL NO. 63  
(Pl. 13, PT5 91)

*Type.*—Stamp seal of problematical shape or cylinder seal.

*Pattern.*—Winged genie: Human head in left profile, body perhaps in front view (legs missing). Bearded, hair apparently bunched at back of neck. Perhaps domed headdress. Traces of one pair of wings at right, one wing obliquely upward, one obliquely downward, meeting at shoulder. Wings to left of genie vague (impression faint).

LABEL WITH SINGLE IMPRESSION OF SEAL NO. 63

Field No.	Find-Spot in Treasury
PT5 91	Hall 38, Plot HG 10, SE. Corner

SEAL NO. 64  
(Pls. 2 and 13, PT4 950)

*Type.*—Stamp seal with circular base.

*Pattern.*—Bes with canine and cock.

*Bes.*—Front view. Circular, rather monstrous face with fleshy nose and spongy cheeks. Two lines above hair-covered forehead suggest wad of feathers or horns. No neck; muscular chest. Loin cloth (animal skin) from waist to lower thighs; tail of animal skin marked between legs. Right arm at side, hand resting on thigh; left arm straight out and slightly up, hand grasping neck of cock. Legs bent, knees outward, toes pointing outward.

## SEAL IMPRESSIONS

*Canine*.—Jackal or dog with upcurled tail sits to left of Bes on level slightly above latter's knees.

*Cock*.—Stands to right of Bes in crowing position, chest and head raised, wing lifted.

## LABEL WITH FIVE IMPRESSIONS OF SEAL NO. 64

Field No.	Find-Spot in Treasury
PT4 950	Room 33, NE. corner, floor

SEAL No. 65  
(Pl. 13, PT4 865)

*Type*.—Stamp seal with elliptical base.

*Pattern*.—Winged genie with crown: Head in right profile. Hair apparently falling to shoulder. Bareheaded. One upcurled wing at either side (distorted impression on label PT4 871 faintly suggests two wings at either side). Crown—perhaps connected with vertex of genie by faint line—composed of two horns which spread and form base and sides, inclosing three feathers(?) which end on top in three circular disks.<sup>132</sup> Rest of design missing or mutilated.

## LABELS WITH IMPRESSIONS OF SEAL NO. 65

Field No.	Find-Spot in Treasury Room 33	Other Seals on Same Label				
PT4 901	At center of N. wall S. of column base A4, floor Between column bases A2 and A3, floor	28				
PT4 865		28	37	48	56	66
PT4 871						
Seals associated with No. 65		28	37	48	56	66

SEAL No. 66  
(Pl. 14, PT4 948, PT4 871)

*Type*.—Stamp seal with ovate base.

*Pattern*.—Winged, horned lion(?): Anterior part only, in right profile. Head of lion or similar animal. Open jaws. Knobby ibex horn, one ear. Short upcurled wing. One foreleg raised almost vertically; other foreleg may extend downward (impression on PT4 871 partly covered by impression of seal No. 28).

## LABELS WITH IMPRESSIONS OF SEAL NO. 66

Field No.	Find-Spot in Treasury Room 33	Other Seals on Same Label				
PT4 871	Between column bases A2 and A3, floor N. wall, between and N. of column bases A3 and A4, floor NE. corner, floor	28	37	48	56	65
PT4 899					56	
PT4 948		28				
Seals associated with No. 66		28	37	48	56	65

SEAL No. 67  
(Pl. 14, PT6 43)

*Type*.—Stamp seal with base in shape of sandal or footprint.

*Pattern*.—Heron balancing pitcher.

*Heron*.—In right profile. Standing on right leg; left leg raised and flexed, talon pronounced (or grasping fish or similar object?). Wings at rest. Gracefully curved neck, head and beak horizontal. Pitcher balanced on top of head.

*Pitcher*.—Oval body, flaring neck, one handle at left from lip to shoulder.

## LABELS WITH IMPRESSIONS OF SEAL NO. 67

Field No.	Find-Spot in Treasury Room 45	Other Seal on Same Label
PT6 43	W. end, Plot HF 26	47
PT6 116	W. end, floor, Plot HF 26	47

SEAL No. 68  
(Pl. 14, PT6 101)

*Type*.—Signet ring with pointed elliptical bezel (impression nicked by hoop).

*Pattern*.—Horned griffin: In left profile, walking position. Eagle's head; one horn curves forward from vertex; mane(?) along back of neck; curved wing. Body and legs of lion or similar animal. Two (possibly three) parallel upcurved tails.

## LABEL WITH IMPRESSION OF SEAL NO. 68

Field No.	Find-Spot in Treasury	Other Seal on Same Label
PT6 101	Room 47, NE. corner, near floor	Traces of unidentifiable impression, suggesting seal No. 5

132. Comment by Professor Richard A. Parker: "The crown worn by the genie is a somewhat debased example of the *hmhm*-crown, which first occurs under Akhnaton and is common to the end of Egyptian history. Cf. Abd el Monem Joussef Abubakr, *Untersuchungen über die ägyptischen Kronen* (Glückstadt etc., 1937) pp. 63-65."

For the crown of the Pasargadae genie see our p. 15, also Vol. I 22 and Fig. 7B.

## OBJECTS FROM THE PERSEPOLIS TERRACE

SEAL No. 69  
(Pl. 14, PT4 255)

*Type.*—Signet ring with elliptical bezel (right end of each impression nicked by hoop).

*Pattern.*—Winged bull: In right profile, walking position. Muzzle pulled hard toward neck. Traces of horn and ear. Oblique wing with upcurled tip and one serrate edge. Tail upcurled, tip touching wing.

## LABEL WITH TWO IMPRESSIONS OF SEAL NO. 69

Field No.	Find-Spot in Treasury	Other Seal on Same Label
PT4 255	Room 8, floor, Plot HG 83, ca. center E. line	Fragment of unclassified cylinder seal impression: heads of two bareheaded foes armed with spears

SEAL No. 70  
(Pl. 14, PT4 944)

*Type.*—Stamp seal with elliptical base.

*Pattern.*—Bullock(?): In right profile. Head lowered (in charging position?), one ear straight up, other ear (or horn) straight forward. Both forelegs thrown forward as though bracing; hind legs in walking position. Long bovine tail with bushy tip. Genitals marked. Hind legs and right foreleg touch ground line.

## LABELS WITH IMPRESSIONS OF SEAL NO. 70

Field No.	Find-Spot in Treasury	Other Seals on Same Label					
PT4 198	Plot HG 51, loose dirt (Room 33?)			21			
PT4 671	Room 33, ca. 2 m. S. of N. doorway, .80 above floor						
PT4 866	Room 33, at column base A3, floor	5	19		44	54	55
PT4 894	Room 33, between and N. of column bases A2 and A3, floor	5	19			54	
PT4 944	Room 33, NE. corner, floor						
PT4 945	Room 33, NE. corner, floor						
Seals associated with No. 70		5	19	21	44	54	55

SEAL No. 71  
(Pl. 14, PT4 1018)

*Type.*—Stamp seal, probably.

*Pattern.*—Rampant bull(?): In left profile (head and right hind leg missing). Right foreleg obliquely upward; left foreleg bent downward, parallel to left hind leg. Stump of tail obliquely upward.

## LABEL WITH IMPRESSION OF SEAL NO. 71

Field No.	Find-Spot in Treasury	Other Seals on Same Label
PT4 1018	Hall 38, at S. wall, Plot HG 31, center W. line	Unclassified fragments

SEAL No. 72  
(Pl. 14, PT4 840)

*Type.*—Probably signet ring with pointed elliptical bezel.

*Pattern.*—Running horse(?): In left profile. Head indistinct. Forelegs thrown forward; hind legs flexed; tail indicated.

## LABELS WITH IMPRESSIONS OF SEAL NO. 72

Field No.	Find-Spot in Treasury Room 33	Other Seals on Same Label		
PT4 840	S. of column base A4, .70 above floor			28
PT4 859	N. of column base A4, floor			
PT4 946	NE. corner, floor	5	19	
Seals associated with No. 72		5	19	28

SEAL No. 73  
(Pl. 14, PT3 386)

*Type.*—Stamp seal with elliptical base (suggested by curved edge above pattern) or cylinder seal.

*Pattern.*—Charging boar: In right profile. Legs in running position, parallel in pairs. Jaws open, one tusk marked. Two ears; bristles on forehead and back; hair on body marked by wavy rows of dashes.

## LABEL WITH SINGLE IMPRESSION OF SEAL NO. 73

Field No.	Find-Spot in Treasury
PT3 386	Room 11, near center of E. wall, floor

## SEAL IMPRESSIONS

## SEAL NO. 74

(Pl. 2, PT4 704; Pl. 14, PT4 832)

*Type.*—Stamp seal or cylinder seal.*Pattern.*—Charging boar: In left profile. Legs in running position, parallel in pairs. Head indistinct. Row of bristles marked on head and back. Tail points obliquely upward.

## LABELS WITH IMPRESSIONS OF SEAL NO. 74

Field No.	Find-Spot in Treasury	Other Seals on Same Label				
PT4 704	Room 33, between column bases A5 and B5, ca. .50 above floor	5	17	23	32	38
PT4 832	Room 33, N. of column base A5, floor					38
Seals associated with No. 74		5	17	23	32	38

## SEAL NO. 75

(Pl. 14, PT6 261)

*Type.*—Stamp seal with elliptical base.*Pattern.*—Running dog: In left profile. Details of head unclear, but eye marked. Forelegs thrown forward in running (or jumping?) position; hind legs indistinct, appear to slant down and back. Tail seems to point down.

## LABELS WITH IMPRESSIONS OF SEAL NO. 75

Field No.	Find-Spot in Treasury	Other Seal on Same Label
PT6 48	Hall 41, between column bases H3 and H4, .80 above floor, Plot HF 79	62
PT6 118	Hall 41, .25 above floor, Plot HF 77, near SE. corner	62
PT6 261	Hall 41, between column bases F9 and G9, .30 above floor, Plot HF 77	62
PT6 262	Hall 41, between and E. of column bases F9 and G9, .35 above floor, Plot HF 77	62
PT6 284	Room 55, N. of doorway, near floor	62
PT6 291	Room 56, loose dirt	62
PT6 293	Room 56, S. part, near W. wall, floor	62
PT6 298	Room 56, S. part, near E. wall, .40 above floor	62
PT6 301	Room 56, in N. doorway	62
PT6 306	Room 56, at SW. corner of E. doorway, .75 above floor	62
PT6 307	Room 56, at SW. corner of E. doorway, 1.10 above floor	62
PT6 308	Room 56, NE. corner, .40 above floor	62
PT6 309	Room 56, NE. corner, .40 above floor	62
PT6 311	Room 56, in E. doorway, .35 above floor	62
PT6 314	Room 56, in E. doorway, floor	62
PT6 317	Room 56, at E. wall, N. of E. doorway, .20 above floor	62
PT6 318	Room 56, at E. wall, N. of E. doorway, .20 above floor	62
PT6 321	Room 56, loose dirt	
PT6 323	Room 56, ca. 2 m. NW. of E. doorway, floor	62

## SEAL NO. 76

(Pl. 14, PT6 130)

*Type.*—Stamp seal with elliptical base.*Pattern.*—Lion striking onager(?).*Lion.*—In left profile, couchant with legs horizontal on ground line. Jaws dug into back of onager or similar animal. Mane marked. Lashing tail forms loop above rump.*Onager(?).*—In right profile, at right angle to lion. Ground line marked. Anterior part collapsing under lion's attack. Forelegs (marked by two sketchy dashes) perhaps meant to kneel; hind legs in standing position. Both ears indicated. Tail loops up and forward, tip touching back.

## LABEL WITH SINGLE IMPRESSION OF SEAL NO. 76

Field No.	Find-Spot in Treasury
PT6 130	Room 50, center, loose dirt, 1.0-2.0 above floor

## SEAL NO. 77

(Pl. 14, PT6 64)

*Type.*—Stamp seal with circular base.*Pattern.*—Two antithetic lions: Identical, sejant, regardant, chests touching. One vertical foreleg and one horizontal hind leg shown in each case. Tails curl up above rumps. Ground line marked.

## LABELS WITH IMPRESSIONS OF SEAL NO. 77

Field No.	Find-Spot in Treasury	Other Seal on Same Label
PT4 838	Room 33, N. of column base A5, floor	Traces of unidentifiable impression
PT6 45	Excavated dirt from Rooms 45 and 46 (probably from Room 45)	
PT6 64	Room 45, loose dirt, Plot HF 26	

## CYLINDER SEALS

## FIND-CONDITIONS, TECHNICAL DATA

Because of the character of the site—absence of domestic quarters and graves of townspeople—our collection of actual seals is small. There are only twenty-three cylinder seals, and these furthermore are much less representative of Achaemenian glyptique than the cylinder sealings impressed on the tablets and labels from the Treasury, not to mention the fact that the tablet sealings are more communicative through their association with written records.

Fifteen cylinder seals were found in the Treasury, and the remaining eight specimens occurred in various parts of the Persepolis Terrace, specified in the catalogue (pp. 43–46). We do not learn much from their distribution. The Persian seals presumably had been lost by their owners. The Mesopotamian seals of pre-Achaemenian periods may have found their way to Persepolis as trophies of war, or they may have been carried there by foreign artisans who owned them as heirlooms or had found them in their native soil.

The shapes and the dimensions of the seals concerned are shown on Plates 15–16. Most cylinders are of average size. Three exceptionally large specimens include a seal (PT4 873) tentatively attributed to the Achaemenid period and two Assyrian cylinders (PT5 415, PT6 1). An unusually squat specimen (PT7 204) is presumably a Jamdat Nasr seal.

All cylinders are perforated lengthwise, and none have any other device for suspension. However, the perforation of one Assyrian specimen (PT6 1) is incomplete. Its device for suspension could have been a rod, perhaps of bronze, inserted in the partial perforation and ending in a ring. As to the materials used for our seals, four of the fourteen specimens which are definitely or tentatively attributed to Achaemenid Persia are made of baked clay, the rest of common stones. Chalcedony was used for the one Neo-Babylonian cylinder. The four Assyrian seals are made of chalcedony, steatite, nondescript stone, and baked clay. Steatite and hematite were used for the two seals of the 1st Babylonian dynasty, and the two specimens which we tentatively consider Jamdat Nasr seals are made of bone and serpentine.

PATTERNS AND CHRONOLOGY<sup>133</sup>

There are few definite resemblances between the patterns of the fourteen seals which we attribute—tentatively in most cases—to the Achaemenid period (Pl. 15 and top row of Pl. 16) and the cylinder sealings impressed on tablets and labels from the Treasury (Pls. 3–11). This is due partly to the fact that we are dealing with seals which belonged to persons of different social classes. Many of the seals affixed to the Treasury documents and to the labels which were once attached to royal stores or records belonged to high dignitaries of the court and well-to-do officials, whereas most of the seals lost in the dust of the buildings, passages, and streets of Persepolis were presumably those of artisans, laborers, and soldiers. There is seldom a doubt as to the Achaemenid origin of the cylinder seal impressions on tablets and labels, primarily because of the characteristic Persian dress of the persons depicted; whereas in the case of the seals proper we are uncertain in

133. The writer's thanks are due to Dr. Edith Porada for suggestions concerning the dating of certain seals of this group.

a number of instances whether they should not be attributed to the end of the pre-Achaemenid era.

The most frequent subject of the tablet sealings, the hero triumphant (Pls. 3–5), often distinguished by the presence of a royal name, is represented on only one cylinder (PT5 413), but the pattern is conventionalized and the hero's dress is not distinctively Persian. He is bareheaded, except perhaps for a fillet. He wears a skirtlike garment instead of the wide-sleeved *candys*, and his upper body is either bare or covered with a tightly fitting vest. The tree symbol in this case seems to represent the cypress instead of the palm tree of the tablet and label sealings. On the other hand, the wings of the monsters held by the hero are upcurled in Achaemenian fashion, as are those of the monsters on the designs of PT3 111, PT5 351, and PT6 673.

Worship of the sacred symbol (cf. sealings on Pl. 6) is represented on one fragmentary seal (PT4 939). Although the lower parts of the two apparently identical, bareheaded worshipers are missing, the relation of the pattern to the group of sealings referred to is clear. Both extend one hand—palm upward in the gesture of adoration—toward the winged symbol.

There is one stylized seal pattern (PT4 873) picturing ritual or worship at the altar such as is shown on the sealings of Plate 7. The design of a horseman at an altar-shaped structure (PT6 699) is close to the pattern of seal No. 57 (Pl. 13), which pictures a standing Persian in front of a similar structure with two conoid projections on top. A crudely drawn, unfinished religious scene shows an animal sacrifice (PT5 36)—a subject not appearing on any tablet or label sealings.

Neither martial scenes (cf. Pl. 9) nor human hunters (cf. Pl. 10) are represented in the patterns of the Achaemenian cylinders with which we are here dealing. In one case a winged man-bull or man-lion is shown hunting an ibex (PT3 111). The lion as hunter appears not less than six times in this group of cylinder patterns. In one case (PT5 743) an antithetic pair, perhaps a male lion and a lioness, both rampant regardant, attack a mouflon. In the other patterns ibex (PT7 33, PT4 191 [or antelope]), winged man-ibex (PT6 673), and stag (PT4 527, PT6 51) are the lion's prey.

One assumedly Achaemenid seal shows a double-tailed and winged lion-stag and a winged man-bull(?) opposed at either side of a bird (PT5 351).<sup>134</sup> The last seal of this group pictures two rampant goats at opposite sides of a crescent-shaped symbol or a snake (PT5 266).

A design fragment of Neo-Babylonian (or Neo-Assyrian)<sup>135</sup> type showing two winged genii is preserved on PT4 908 (Pl. 16).

Our collection includes four Assyrian seals (see Pl. 16), two of which (PT5 415, PT6 1) may have been wrought in the 9th or 8th century B.C.,<sup>136</sup> whereas the other two (PT5 791, PT4 484) are later. Seal PT5 415, well cut and showing extensive use of the drill, pictures the hero in

134. Dr. Porada is inclined to consider this seal, as also PT5 413 and PT3 111, "late peripheral Assyrian."

135. As suggested by Dr. Porada. See *Corpus of Ancient Near Eastern Seals in North American Collections. I. The Collection of the Pierpont Morgan Library*, catalogued and edited by Edith Porada . . . ("The Bollingen Series" XIV [Washington, D.C., 1948] pp. 71 ff.

136. As suggested by Dr. Porada. Cf., further, Frankfort, *Cylinder Seals*, Pl. XXXIV a.



combat with a winged monster. The latter, in execution and detail, is quite similar to a pair of antithetic winged bulls on a seal cylinder which was found by our second Luristan Expedition in the pre-Achaemenid sanctuary at Surkhah Dum<sup>137</sup> in Kuhdasht ("Mountain Plain"). Seal PT6 1 pictures a ritual repast—a frequent subject of Assyrian seals, where the vessel on a stand, on our seal only subsidiary, often appears in the center of the scene.<sup>138</sup> An altar scene is pictured on PT5 791, showing a seated deity at one side of the altar balanced on the opposite side by a lion and his prey. Seal PT4 484, finally, shows a hunter dispatching a winged ibex with a mace, or the like, in front of a panel filled with problematical symbols.

The Old Babylonian seals (Pl. 16, 4th row) have the common patterns of ritual character frequent during this period and before.<sup>139</sup> Seal PT5 238 pictures a worshiper before two deities, one enthroned and the other standing, together with various symbols and at least one cuneiform sign ("god") behind the deities (see p. 45). The vague pattern of PT6 268 shows the remnants of a presentation scene, namely, an interceding deity leading a worshiper to an apparently seated god or goddess.

Two of the cylinders found at Persepolis are tentatively classed as Jamdat Nasr seals (Pl. 16, bottom row), but we admit that we hesitate less in so identifying the squat serpentine cylinder with a file of animals (PT7 204) than the bone seal of usual proportions with a pattern of two running ibexes (PT4 1096).<sup>140</sup>

## CATALOGUE

PT6 699 (Pl. 15). Light brown baked clay.

*Find-spot.*—Treasury, Plot IG 34, surface layer.

*Pattern.*—Horseman at altar(?).

*Horseman.*—Triangular head; body in front view, one leg hanging from near side of horse. One hand holding rein, one arm flexed at right angle.

*Horse.*—Bucking (or badly carved), in left profile. One line marks reins. Line projecting from forehead probably marks ear; curved line extending from ear(?) toward waist of rider, perhaps indicating mane. Long tail with pointed tip.

*Altar(?)*.—Rectangle with three vertical panels. Top formed of two triangular projections; cf. altars on Plates 7:22–23 and 13:57.

*Period.*—Achaemenian probably.

PT5 36 (Pl. 15). Black stone.

*Find-spot.*—Throne Hall, portico debris, Plot GF 23, SE. corner.

*Pattern.*—Sacrificial scene: priest, two attendants, mouflon, dead animal, crescent.

*Priest.*—Standing, in left profile, body in front view. Bearded, hair bunched at back of neck. Domed headdress; skirt reaching to knees, oblique folds on lower part; belt (or sash) marked by two lines. Right arm obliquely upward, hand apparently grasping one horn of mouflon; left arm obliquely downward, hand holding scimitar.

*Attendants.*—Apparently intended to be identical but of second attendant outline of upper part only marked, in left profile. Headdress perhaps identical with that of priest. Apparently bearded, hair bunched at back of neck. Details of dress and position of arms doubtful.

137. To be published.

138. Cf. *OIP* XXII, Pls. XXVII, XXIX, XXX; Moortgat, *Vorderasiatische Rollsiegel* (Berlin, 1940) Pl. 78:663 and similar scenes on the same plate and on Pl. 79.

139. Cf. Frankfort, *op. cit.* pp. 147 ff.; Moortgat, *op. cit.* pp. 31 ff.; Porada, *op. cit.* pp. 39 ff.

140. For recent studies of Jamdat Nasr seals see Moortgat, *op. cit.* pp. 5 ff.; Frankfort, *op. cit.* pp. 30 ff.; Porada, *op. cit.* pp. 4 ff. See now, especially, Frankfort, *Stratified Cylinder Seals from the Diyala Region* (*OIP* LXXXII [1955]).

*Mouflon.*—Couchant, in front of priest, body in right profile, head in profile turned backward but two curled horns in front view. Head not connected with neck, apparently severed by priest's sword.

*Dead animal.*—Below posterior part of mouflon; decapitated (head not shown); lying on back, one hind leg pointing obliquely upward.

*Crescent.*—Below forelegs of mouflon.

*Period.*—Achaemenian?

PT4 873 (Pl. 15). White calcareous stone.

*Find-spot.*—Treasury, Room 33, at center of N. wall, floor.

*Pattern.*—Two persons, one at either side of altar and stand; border lines marked above and below.

*Person to right.*—Priest(?), standing, in left profile. Bashlyk, end hanging down on back; chin either covered by bashlyk or bearded. Belted robe, fringe design marked on chest, two oblique lines across lower part, fringe at lower edge. One hand, with palm apparently turned upward, in front of abdomen; other arm almost straight forward from shoulder; hand seems to hold faintly marked branch in front of face.

*Person to left.*—Priest(?), standing, in right profile. Headdress uncertain; chin either covered by bashlyk or bearded. Dress identical with that of person to right. Both arms straight forward; lower one extending from chest with palm of hand turned upward; other extending from shoulder, hand holding some problematical object (mostly chipped off).

*Altar.*—Simple flat-topped table, two legs marked. On top: two horizontal lines, one above the other, each with one end turned down and other end turned up. From upper line extend two additional vertical lines (upper ends missing).

*Stand.*—Between altar and person to left. Vertical shaft tapering upward, small flat top.

*Period.*—Achaemenian probably.

PT4 939 (Pl. 15). Black stone (lower half missing).

*Find-spot.*—Treasury, Room 33 or 34, loose dirt, Plot HG 41.

*Pattern.*—Adoration scene: winged disk symbol flanked by two worshipers, miscellaneous elements.

*Winged disk.*—Circular knob inclosed by blank circle, horns marked above. One wing at either side, each having curved lower edge, vertical line subdividing each wing into two sections, horizontal grooves. Bird tail, subdivided by curved line into two sections, feathers marked by flutes.

*Worshipers.*—Identical as far as preserved, in profile, facing winged disk. Hair bunched at back of neck. Bareheaded; dress problematical. One hand extended toward lower edge of wing, palm apparently upward.

*Miscellaneous elements.*—Between backs of worshipers: crescent superposed on small disk and conical object (head of symbol?). Above entire scene: faint row of parallel angles.

*Period.*—Achaemenian or slightly earlier.

PT6 673 (Pl. 15). Dark gray limestone(?).

*Find-spot.*—Treasury, Room 83, NW., 1.00 above floor.

*Pattern.*—Lion attacking winged man-ibex, bird, tree symbol, sun; small drill circles on various elements of design.

*Lion.*—Leaping at ibex, in left profile. Two ears; open jaws; serrate mane. One foreleg raised to strike; one hind leg pulled up to body. Tail with broad tip curls forward above rump.

*Man-ibex.*—Running, in left profile. Bearded man's face. Knobbed horn rising straight above forehead, tip curled; two long ears; serrate mane. Long wing rises obliquely from shoulder, tip upcurled, feathers marked. Genitals indicated. Long tail with broad bifurcate tip curls forward above rump.

*Bird.*—In front (to left) of man-ibex, top view, wings spread. Three lines mark tail.

*Tree symbol.*—In front (to left) of bird and man-ibex. From base of four parallel lines rises frame subdivided by paired lines into two main sections. Frame seems to inclose cluster of tree trunks with common crown of individual branches ending in small knobs. Branch at either side of base and frame top curves outward and ends in blossom or fruit cluster. Two pairs of branches with bifurcate ends curve outward from central subdivision of frame.

*Sun.*—Disk with nine rays above man-ibex.

*Period.*—Achaemenian.

PT5 266 (Pl. 15). Yellowish-brown and red-brown calcareous stone.

*Find-spot.*—Treasury, Hall 38, floor, Plot HG 10, SE. part.

*Pattern.*—Two goats, miscellaneous elements.

*Goats.*—Almost identical, antithetic, rampant, regardant. Horn resembling that of bovine curves forward and upward, but beard marks animal as member of goat family. One ear marked. Forelegs extend forward and upward. One hind leg raised forward; goat balanced on other hind leg. Tail curves downward.

*Miscellaneous elements.*—Between backs of goats: upright lunate symbol with irregular top (snake?). Between fronts of goats: four staggered oval dashes.

*Period.*—Achaemenian probably.

PT5 743 (Pl. 15). Red-brown baked clay.

*Find-spot.*—Treasury, Room 43, near center of W. wall, floor.

*Pattern.*—Two lions attacking mouflon.

*Lion to left.*—Probably male, larger than second lion, in right profile, rampant, regardant. Large ear; open jaws; serrate mane. Drill used for eyes and nostrils. One foreleg raised vertically; other extending forward, paw almost touching tail of mouflon. One hind leg also slightly raised; animal balanced on other hind leg. Long tail with broadened tip curves up and back toward body, almost touching nostrils. Prominent muscles and two skin folds at neck.

*Lion to right.*—Lioness(?), in left profile, rampant, regardant. Open jaws; small ear; mane faintly marked by some dots. Jaw line and one skin fold at neck indicated. Drill used for eyes and nostrils. One foreleg obliquely upward, other horizontal, pointing at neck of mouflon. Hind legs in walking position. Tail either missing (lack of space) or faintly indicated by line between hind legs. Muscles not emphasized.

*Mouflon.*—Male, between two lions, in right profile, regardant. Large curled horns in front view; two ears. Forelegs in running position; hind legs in walking position. Short tail. Prominent muscles outlined.

*Period.*—Achaemenian.

PT5 351 (Pl. 15). Purplish red-brown stone.

*Find-spot.*—Harem, service quarters, Room 4, floor, Plot HF 43.

*Pattern.*—Winged lion-stag, winged man-bull(?), bird, star, crescent.

*Lion-stag.*—Standing, in right profile. Comb-shaped crescent marks antlers. Lion's head with open jaws; mane marked. Body and long legs cervine rather than feline; odd offset hoofs or claws. Steeply upcurved wing, feathers marked by fluting in same manner as mane. Two steeply upcurved club-shaped tails.

*Man-bull(?).*—Standing, in left profile, but forelegs slightly raised. Human head, bareheaded, apparently bearded, hair bunched at back of neck. Bull(?) body. Hoofs offset in manner similar to those of lion-stag. Right foreleg almost touches bird's leg. Steeply upcurved wing, feathers marked in same manner as those of lion-stag. Steeply upcurved tail, broad tip curling back toward body.

*Bird.*—Standing, in right profile, between lion-stag and man-bull(?) at slightly higher level, facing man-bull(?). Feathers marked on long neck. One wing. One leg but two claws.

*Star and crescent.*—Eight-pointed star between hind parts of lion-stag and man-bull(?). Crescent above star and tails of monsters.

*Period.*—Achaemenian probably, but see p. 42, n. 134.

PT5 413 (Pl. 15). Dark red-brown stone.

*Find-spot.*—Treasury, Hall 38.

*Pattern.*—Hero holding two winged monsters, tree symbol.

*Man.*—Standing, in left profile, upper body in front view. Bearded; drill used for hair bunched at back of neck. Bareheaded (fillet?); upper body perhaps bare or covered with tight jacket, skirtlike belted garment tucked up leaving lower right leg bare; vertical folds and pattern of horizontal dashes on skirt. Arms raised and slightly bent at either side, each hand holding foreleg of monster.

*Monsters.*—Identical, antithetic, erect, in profile at either side of man. Head identical with that of man; drill used for hair at back of neck. Lion's body with upcurved wing, feathers marked. Claws marked on all legs. One foreleg obliquely upward and held by man, other foreleg obliquely downward. One hind leg slightly raised, claws pointing toward legs of man. Tail curves down between legs.

*Tree symbol.*—Between monsters. Small symbol suggesting cypress, circular base (drilled) on top of line.

*Period.*—Achaemenian probably, but see p. 42, n. 134.

PT7 33 (Pl. 15). Gray and red-brown baked clay.

*Find-spot.*—Apadana, SE. tower, Passage 9.

*Pattern.*—Lion striking ibex, miscellaneous elements.

*Lion.*—Erect, in left profile. Drill circles on head. Two ears; open jaws; mane marked. Fur on body marked by short dashes. Right forepaw striking rump of ibex in front, other forepaw raised, ready to strike; claws indicated. Hind legs in walking position. Tail curls up and back toward body.

*Ibex.*—Running but apparently breaking down under lion's attack; in left profile, head (with drill circles) in right profile turned back toward lion. Long exaggerated horn, knobs suggested by dentate outline; two ears; mane indicated. Double outline at belly. Hair marked on rump. Short angular tail, tip horizontal.

*Miscellaneous elements.*—Above lion: angle with central dot and two horizontal dashes. Above ibex: crescent with dot in center and second dot above it, small cross below crescent. In front of ibex: two oblique dashes. Dots on angle and crescent made by drill.

*Period.*—Achaemenian probably.

PT3 111 (Pl. 15). Red-brown stone.

*Find-spot.*—Eastern fortification, surface layer above moat, Plot HG 78, NE. corner.

*Pattern.*—Winged monster chasing ibex, miscellaneous elements.

*Monster.*—Half erect, in left profile. Roughly carved human head, bushy hair, face marked by two slanting dashes. Body of bull or lion. Wing rising obliquely from shoulder, feathers marked, tip upcurved. One foreleg almost straight up as though to strike ibex in front; other foreleg aligned with raised one, slanting down and back. Hind legs in running or jumping position. Tail straight back, tip upcurved.

*Ibex.*—Half erect, in left profile, to left of monster, head turned back toward latter. One horn marked; large circular (drilled) eye; mouth open; mane marked. One foreleg obliquely upward, other foreleg slanting down and back; hind legs in jumping or running position. Short tail, almost horizontal.

*Miscellaneous elements.*—Pair of dashes between lowered foreleg of monster and hind part of ibex; angle below tail of monster.

*Period.*—Achaemenian probably, but see p. 42, n. 134.

PT4 527 (Pl. 16). Brown stone.

*Find-spot.*—W. of Throne Hall, Plot GE 89.

*Pattern.*—Lion attacking stag, tree.

*Lion.*—In right profile, rampant, regardant. Two ears; jaws apparently open. One foreleg obliquely upward, paw striking at stag's muzzle; other foreleg obliquely downward, paw touching stag's hind leg. One hind leg on ground; other straight forward, paw apparently touching hind leg of stag. Tail curls up and back toward body.

*Stag.*—Running, in right profile, regardant. One long comb-shaped antler, other short (for lack of space) or perhaps continued to left of treetop in front. One ear; pointed muzzle; long neck; short tail.

*Tree.*—To right (in front) of stag. Stylized branches obliquely at either side of trunk, which seems to end in knob.

*Period.*—Achaemenian probably.

PT4 191 (Pl. 16). Baked clay, yellowish-brown paste, dark red-brown slip.

*Find-spot.*—Treasury, Room 22, Plot HG 72.

*Pattern.*—Lion attacking ibex (or antelope), tree (or bird), circles.

*Lion.*—In left profile, rampant, regardant. Open jaws; serrate mane. Forelegs raised obliquely; claws marked. Rest mutilated except for parts of hind legs.

*Ibex (or antelope).*—Almost exactly paralleling lion as to posture of head and body. Long curved horn with upcurved tip (antelope?). Mouth open; mane marked by short dashes. Forelegs flexed in front of chest; hind legs mutilated. Short tail, slightly raised.

*Tree (or bird).*—Elliptical, almost vertical strip in front of ibex(?) shows oblique hatching (on plaster impression). Possibly a bird with tail feathers indicated by fanlike dashes below chest of ibex(?).

*Circles.*—Several drilled circles near ground level below forelegs of lion.

*Period.*—Achaemenian probably.

PT6 51 (Pl. 16). Red-brown stone with gray scorched stains.

*Find-spot.*—Treasury, Plot HG 10.

*Pattern.*—Lion attacking stag, tree.

*Lion.*—In left profile, rampant, regardant. Open jaws; mane marked by line; eye and paws marked by drill circles. Forelegs raised, ready to strike stag; one hind leg also slightly raised. Tail curves downward between hind legs.

*Stag*.—To left (in front) of lion, running, in left profile, regardant. Long oblique antlers in front view; eye marked by drill circle; mane marked by line. Short tail. Prominent muscles outlined in same manner as those of lion.

*Tree (cypress?)*.—In front (to left) of ibex (or behind lion). Raised above ground level. Trunk rises from short base line; branches indicated by oblique parallel lines.

*Period*.—Achaemenian probably.

PT4 908 (Pl. 16). Gray and black chalcedony.

*Find-spot*.—Treasury, Room 33, at center of N. wall, floor.

*Pattern*.—Two winged genii (fragmentary): Identical, as far as preserved, in profile, facing opposite directions,<sup>143a</sup> chests in front view. Bearded, hair bunched at back of neck. Conical headdress; long robe, open in front leaving one leg exposed (genie to right). Two wings from shoulder, one obliquely upward, other obliquely downward, feathers marked by parallel dashes. One arm obliquely downward and forward, hand holding pail-like object (genie to right); other arm flexed in front of chest.

*Period*.—Neo-Babylonian or Neo-Assyrian (see p. 42, n. 135).

PT5 791 (Pl. 16). Baked clay, light red paste, brown slip.

*Find-spot*.—"Garrison Street," Plot HG 12.

*Pattern*.—Deity seated at altar, lion striking animal.

*Deity*.—In left profile, facing altar. Serrate headdress or hairdress; long gown with ornamented front (drill marks). One arm flexed in front of chest (hand missing); other arm obliquely downward, hand holding vessel(?). Seated on chair with low back, four rungs parallel to seat, two oblique rungs; drill marks.

*Altar*.—Irregular pyramidal base of three horizontal lines with drill circles; shaft of two vertical lines; inverted pyramidal top of three horizontal lines. Offering is problematical object marked by three irregular semicircles with central dot (drilled); outer semicircle is serrate.

*Lion*.—To left of altar, in left profile, rampant, back turned toward altar. Lower part and most of head mutilated. Mane marked. One paw raised; other obliquely downward. Upcurled tail almost touches altar.

*Struck animal*.—To left of lion, in profile. Head perhaps marked by two lines ending in two drilled circles. Mane apparently indicated by row of dashes. Forelegs may be marked by two vertical lines, one running upward, other downward from assumed head end; one hind leg seems to be oblique line touching downward foreleg.

*Period*.—Late Assyrian.

PT4 484 (Pl. 16). Red-brown stone.

*Find-spot*.—Treasury, E. end of Room 32, refuse.

*Pattern*.—Person, winged ibex, panel with symbols, miscellaneous elements.

*Person*.—Standing, head in right profile, marked by drilled circle, facing ibex. Hair or headdress marked by dashes and body by vertical line or two lines connected by pairs of cross-dashes. Right arm raised behind head, hand holding mace or the like; left hand holding one foreleg of ibex. Legs highly stylized.

*Ibex*.—To right of person, erect, in left profile, regardant. Horn marked; serrate mane. Short wing straight backward, lower edge serrate. One foreleg (held by person) almost straight upward; other foreleg continues in same orientation downward. Hind legs in walking position. Hoofs marked by paired dashes. Short tail.

*Panel*.—To left of person, paired outline, three sections. In uppermost section, zigzag line at either side of central rod with circular top suggests thunderbolt symbol; drill circle at either side of symbol. Other two sections filled with crossing lines and drill circles. Lower section chipped.

*Miscellaneous elements*.—To right of ibex. Eight-pointed star; above it, pair of oblique dashes; topmost, symbol suggesting sun above crescent.

*Period*.—Late Assyrian.

PT5 415 (Pl. 16). Greenish-white chalcedony.

*Find-spot*.—Treasury, Hall 38, Plot HF 29.

*Pattern*.—Hero in combat with winged monster, miscellaneous elements.

*Hero*.—Standing, in right profile, facing monster, chest in front view (face and left arm chipped off). Bearded(?), long hair falling on

140a. In complete design facing each other, presumably at opposite sides of unknown central object (probably a tree).

shoulder. Convex conoid helmet or the like; long garment partly tucked above left knee, leaving leg bare; two oblique lines across chest. Right arm raised, hand holding mace with globular head. Sword with dot at either side of tip extends obliquely downward behind back. Drill holes mark joints, hand, curls of hair and beard(?), mace, knob on helmet(?), etc.

*Monster*.—Rearing, in left profile, facing hero (head chipped off). Body and tail of bull(?), forelegs ill defined. Wings and talons of bird. Almost vertical portion of wing marked on side of chest, main part with straight upper edge slanting up and back. Tail drooping in reversed sigmoid curve. Drilled circles mark end of tail, angle of wing, and nostrils.

*Miscellaneous elements*.—Plant below anterior part of monster, five stalks ending in drilled circles; cluster of such circles may mark fruit or flower. Crescent between plant and left knee of hero. Two "rays" of star(?) at fracture above neck of monster. Ground line marked.

*Period*.—Assyrian, 9th–8th centuries B.C.

PT6 1 (Pl. 16). Black steatite.

*Find-spot*.—Treasury, Hall 41, Plot HG 70 or HF 69, loose dirt.

*Pattern*.—Seated person and standing attendant at opposite sides of table with fish, vessel on stand, miscellaneous elements.

*Seated person*.—God or king(?), seated in right profile on chair with curved back and two rungs, fringe (of seat cover?) marked below seat. Probably bearded, long hair falling on shoulder. Bareheaded; elaborate coat marked with paired lines, fringe at lower edge; skirt, with fringe at lower edge, reaching to ankles. Left arm straight forward, palm apparently upward, thumb and two fingers marked; right arm obliquely upward, hand holding saucer-shaped vessel in front of mouth.

*Attendant*.—Priest(?), standing, in left profile, facing seated person. Bearded, hair groomed in waves, falling on shoulder. Bareheaded; long robe with fringe at lower edge, pair of curved lines at side; broad sash(?). Left arm flexed in front of chest, hand holding object with four prongs, probably fan or fly-whisk; right hand in front of waist, holding towel, or the like, marked by two vertical lines.

*Table*.—Between seated person and attendant. Raised above ground by means of platform, suggesting sacred purpose. Slightly concave top, sides marked by double lines, curved animal (bovine?) legs, one rung, thick molded central support. One large fish, eye and fins marked, above table, head pointing toward seated person.

*Vessel*.—Behind attendant. Large oval body, three ridges on tall cylindrical neck. Stand with curved top (presumably ring-shaped) and sides, one rung.

*Miscellaneous elements*.—Eight-pointed star in front of seated person's face, above fish. Crescent behind seated person's head. Two wedges above fish, one wedge below crescent. Three stipples below crescent. Border filled with oblique strokes above and below design.

*Period*.—Assyrian, 9th–8th centuries B.C.

PT5 238 (Pl. 16). Grayish-green steatite.

*Find-spot*.—Treasury, Plot HF 49, loose dirt from Hall 38 or Room 39.

*Pattern*.—Ritual scene: seated deity, standing deity, worshiper, miscellaneous elements.

*Seated deity*.—In right profile. Fluted headdress in form of barret (top mutilated); flounced garment. Right arm forward, slightly bent, hand holding cuplike object in front of chest. Seated on stool, apparently covered with flounced blanket, bottom rung shown.

*Standing deity*.—Behind seated deity, in right profile. Headdress uncertain; flounced garment. Both hands raised.

*Worshiper*.—Standing, in left profile, facing seated deity, shoulders in front view. Fluted barret; almost plain garment with fringed lower edge; belt. Arms bent in front of chest.

*Miscellaneous elements*.—Between worshiper and seated deity: problematical objects below crescent (or double lion mace?). Behind standing deity: cuneiform sign for "god" (Sumerian DINGIR) above two indeterminate signs or symbols. Ground line indicated.

*Period*.—Old Babylonian.

PT6 268 (Pl. 16). Dark brown hematite with reddish stains.

*Find-spot*.—Outside NE. corner of Treasury, Plot HG 02.

*Pattern*.—Presentation scene: two standing persons, seated deity(?), miscellaneous elements.

*Standing person to left*.—Worshiper, chest in front view, rest appar-

ently in right profile. Details vague. Conoid(?) headdress; long flounced garment.

*Standing person to right.*—Interceding deity, chest in front view, rest perhaps in right profile. Flounced garment. One arm seems to hang down beside body.

*Seated deity(?)*—Two bent arms and traces of head to right of other persons suggest seated deity in left profile.

*Miscellaneous elements.*—Behind standing person to left or behind seated deity(?), vertical rod tapering upward above problematical object. Another rod seems to be between standing persons.

*Period.*—Old Babylonian.

PT4 1096 (Pl. 16). Cream-colored bone.

*Find-spot.*—Treasury, Hall 38, .40 above floor, Plot HG 22.

*Pattern.*—Two running ibexes: Almost identical, but ibex to left slightly larger, both in profile, head in outline only. Long beard; long

curved horn; large ear. Legs flexed in running position.

*Period.*—Jamdat Nasr probably.

PT7 204 (Pl. 16). Grayish-green serpentine.

*Find-spot.*—Harem, west wing, Room 2, Plot IE 59, W. part.

*Pattern.*—File of three bovines or cervines and problematical animal(?), miscellaneous elements.

*Bovines or cervines.*—Almost identical, male, walking, in left profile. Horns indistinct.

*Problematical animal(?)*—In front (to left) of foremost bovine(?); irregular roughly quadrangular object, perhaps animal in left profile, standing on hind legs, forelegs partly raised.

*Miscellaneous elements.*—Indistinct element above each bovine(?). From left to right: perhaps bird, fish, small animal with fur marked by serrate back line.

*Period.*—Jamdat Nasr probably.

## STAMP SEALS AND SIGNET RINGS

### FIND-CONDITIONS, TECHNICAL DATA

Our records of five excavation seasons list only twenty-two stamp seals and nine signet rings, in addition to some fragments and totally abraded specimens. Most of these objects, namely fifteen stamp seals and six rings, occurred in the debris of the Treasury. However, the two most valuable specimens, a gold ring (PT3 60; Pl. 18) and a scaraboid set in gold (PT7 67; Pl. 17) occurred in other parts of the Persepolis Terrace. The former had been hidden in a baked clay canteen (Pl. 72:12) in the garrison quarters, and the latter was lost, during the pillage presumably, in a passage south of the Apadana. The distribution of the stamp seals and signet rings, whether inside the Treasury or in other parts of the site, gives us no more information than that of the cylinder seals (see p. 42). Most of the seals had probably been lost by their owners; but one stamp seal (PT4 519; Pl. 17) may have been part of a votive deposit. It lay in the depression prepared for the door socket at the doorway connecting Room 22 with Portico 20 of Treasury Court 17, together with a sixteen-petaled gold rosette, a trapezoid and three buttons of the same material, and two eye stones of onyx. Of course these small objects could have become associated accidentally in any depression of the rifled Treasury; but if they actually were deposited at this spot when the doorway was made, then our seal must belong to the time of Darius I, during whose reign this part of the Treasury was built.<sup>141</sup>

The signet rings of bronze are almost identical in shape—one which may prove to be rather typical for rings of the Achaemenid period. The elliptical (rounded or pointed) sealing bezel forms one piece with the hoop—a three-quarter circle of wire—of the stirrup-shaped ring. Only the gold ring mentioned above (PT3 60) was made in two parts. The elliptical, almost circular, signet disk was welded to the flattened ring wire.<sup>142</sup>

There are various forms of stamp seals, but the cone, usually truncated, prevails. Irregular pyramidal specimens also are common. Next follow scaraboids and disks. One neatly carved effigy seal with Neo-Babylonian pattern (PT5 1; Pl. 17) has the form of a bovine. Another Neo-Babylonian seal (PT5 212; Pl. 17) was valued enough by

141. See Vol. I 173.

142. But for their ribbed hoops, two gold rings of the Oxus Treasure (O. M. Dalton, *The Treasure of the Oxus with Other Examples of Early Oriental Metal-Work* [2d ed.; London, 1926] Nos. 108–9, p. 29 and Pl. XVI) are close in shape to our specimen, whose design—a stag—is also the subject of a third ring pattern (*ibid.* No. 107). A fourth gold ring (*ibid.* No. 106), whose bezel form is considered early by Dalton, closely resembles the shape of our bronze specimens.

its owner to be attached to a bronze wire for suspension after it had lost its upper, presumably perforated, part.

The materials used for the stamp seals include lapis lazuli (1), chalcedony (3), onyx (2), serpentine (1), steatite (1), gypsum (1), limestone (4), nondescript stones (5), baked clay (4).

### PATTERNS AND CHRONOLOGY

In comparing the designs of the actual cylinder seals with those of the cylinder seal impressions on Treasury tablets and labels, we emphasized the rareness of typically Persian features on the seals themselves as compared with the predominance of characteristic Persian designs in the impressions on tablets and labels. A comparison of the patterns of stamp seals and signet rings with the impressions of the same devices on clay labels from the Treasury (Pls. 12–14) shows another interesting discrepancy, namely the lack of Greek and the rareness of Grecized designs on stamp seals and signet rings as compared with the relative frequency of such designs in the impressions of the same types of sealing devices.

We have to emphasize here again, as we did when dealing with the cylinder seals, that the majority of the stamp seals and signet rings lost by their owners in various parts of the Persepolis Terrace belonged to a less privileged and poorer class of people than the seals of officials which we find impressed on labels of the royal storehouse. The Greek seals of the latter group were either seals of Greeks in Persian employ (see p. 15) or booty of war or costly gems imported from the distant West. The absence of seals with Greek patterns comparable with those impressed on Treasury labels makes it improbable that Greek seal-cutters pursued their art at Persepolis, notwithstanding the fact that Greek sculptors worked at the monumental reliefs.

The patterns of signet rings and those of stamp seals are so closely related that we can combine them in one group. Their sealing areas are about equal. The sealing faces of some stamp seals are even identical in shape with the elliptical ring bezels, whereas other stamp seals leave circular, roughly rectangular, or trapezoid impressions.

There are two Grecized patterns. One represents a nude dancer, probably female, three times repeated on two opposite sides and the base of a crude, roughly pyramidal amulet or seal of baked clay (PT3 68; Pl. 17). The design must have been impressed into the soft clay before baking. The narrow, elliptical outline of the uppermost of the three patterns in our illustration suggests the impression of a signet ring. After baking, the object could be used as a

seal or worn as an amulet. Considering the fact that Achaemenid-Persian sculpture does not represent the nude human body, and—at least at Persepolis—never pictures a woman,<sup>143</sup> the portrait of a nude dancing girl (or boy?) must have appeared rather bawdy to Persian eyes. Our amulet, or seal, was found in the soldiers' quarters!

The second Grecized pattern is that of a signet ring (PT5 808; Pl. 18). The graceful bodies of an animal mother and its suckling young remind us of the Grecized design of sealing No. 70 (Pl. 14), picturing a charging or gamboling bullock.

There are five stamp seals of Neo-Babylonian type (Pl. 17, PT5 1, PT4 554*a*, PT5 501, PT5 212, and PT6 453). It is a known fact that seals of this type persisted during the Achaemenian period,<sup>144</sup> and our Treasury labels also show impressions of Neo-Babylonian seals (Pl. 13:61–62). It is possible, therefore, that the stamp seals under consideration were made during the Achaemenian era. On the other hand, cylinder seals much older than the Neo-Babylonian period have been found at Persepolis (see pp. 42–43). Our stamp seals of Neo-Babylonian type show extensive use of the drill. Two almost identical designs (PT5 212 and PT6 453) merely represent symbols: two crescents, the Pleiades (seven dots), and a cross with one dot.<sup>144*a*</sup> A priest(?), perhaps in front of an altar (missing), is shown on a seal fragment (PT5 501). Ishtar encircled by a halo of rays forms the pattern of a lapis lazuli scaraboid (PT4 554*a*). The design of effigy seal PT5 1 pictures a bearded hero with domed headdress and long non-Persian gown. He strangles a rampant gazelle with his left arm, intending, presumably, to kill it with the dagger held in his right hand.

We consider the remaining seal patterns Achaemenian, although it must be admitted that the main criterion for attributing some seals to this period is the fact that they were found at Persepolis. The crudeness of some specimens excludes at least their value as objects of trade or articles of vertu. We are referring to such seals as the last three specimens of Plate 19, which are marked with simple scratchings, perhaps of magical meaning. Some of the animal patterns shown on Plate 18 are almost equally crude: a beast of burden? (PT4 167), two superposed problematical animals (PT5 495), and, on a bifacial seal (PT6 439), a lion's head and a winged cervine.

On the other hand, there are some seals with characteristic Achaemenid features: the gold-framed scaraboid (PT7 67; Pl. 17) shows a typically Persian sphinx<sup>145</sup> with dentate tiara. Seal PT4 519<sup>146</sup> pictures on one side a rather clearly drawn Mede holding two inverted stags, whereas the opposite side is filled with an animal pattern: an eagle attacking a cow with a calf.

143. For exceptions in peripheral parts of the empire see the representation of women in the relief of Erghili (Ernst Herzfeld, *Am Tor von Asien: Felsdenkmale aus Irans Heldenzeit* [Berlin, 1920] Pl. XII); also Dalton, *op. cit.* for several objects representing women and nude persons. See also Frankfort, *Cylinder Seals*, Pl. XXXVII *e*; the design, showing women, closely resembles the pattern of a gold pendant—a seated deity or queen with female attendant—excavated by F. F. C. Lehmann-Haupt at Toprak Kale of Van and illustrated in his *Armenien einst und jetzt* II (Berlin and Leipzig, 1926) 265. Lehmann-Haupt mentions the frequent representation of women in Haldian art, a feature which may well have survived in this area into the Achaemenid period.

144. See Ménant, *Les pierres gravées de la Haute-Asie* II 130 ff., and Frankfort, *op. cit.* p. 220.

144*a*. Cf. similar element on Neo-Babylonian stamp seals published by Porada in *Corpus of Ancient Near Eastern Seals* I, Nos. 810–11, pp. 99 f. and Pl. CXXI.

145. Cf. sphinxes on façades of Persepolis stairways (Vol. I, e.g. Pl. 127).

146. Perhaps of the time of Darius I; see p. 46.

Schematized monsters, beasts, and birds of heraldic appearance are shown on a number of seals—on Plate 17: the above-mentioned sphinx (PT7 67) and a monster or bird with upcurled wing (ring PT5 283); on Plate 18: animal and sun symbol (PT4 263), animal and crescent (PT4 236), antelope and rod-shaped symbol (PT3 218), ibex with upcurled wing and bird (PT3 268), stag (gold ring PT3 60), lion, altar(?), and bird (PT4 1087), lion, crescent, and sun symbol (PT7 368); on Plate 19: hawk(?), sun symbol, fox(?), and tree? (PT4 321), bird (ring PT4 269), peacock? (PT4 414).

The patterns of signet rings PT6 364, PT6 338, and PT5 86 (Pl. 19) are vague; but the form of these rings, as mentioned above, may prove to be characteristic for the Achaemenian period. If so, the ring form rather than the blurred pattern of PT5 734 (Pl. 18), apparently showing a gazelle struck by a lion, and of PT6 231 (Pl. 17), perhaps picturing a warrior with a shield, attributes these seals to Achaemenian glyptic.

#### CATALOGUE

Signet ring PT6 231 (Pl. 17). Elliptical bezel. Bronze, patinated (chemically cleaned).

*Find-spot.*—Treasury, Room 53, at N. wall, near NE. corner, .40 above floor.

*Pattern.*—Blurred; perhaps warrior with shield. Apparently standing man, in right profile. Conoid headdress. Thick oblique line extending from shoulder to right edge of impression may represent shield.

*Period.*—Achaemenian presumably.

Theriomorphic stamp seal PT5 1 (Pl. 17). Couchant bovine; groove at either side and rear above base; central perforation through short axis; slightly convex base. White, gray, and black banded onyx.

*Find-spot.*—Treasury, doorway between Rooms 37 and 40, floor.

*Pattern.*—Hero strangling gazelle.

*Hero.*—Standing, in right profile, facing gazelle, chest in front view. Bearded, hair bunched at back of neck. Dome-shaped headdress; long gown from shoulder to ankle of right foot but tucked up to knee of left leg. Right arm straight down and back, hand holding dagger; left arm flexed tightly around neck of gazelle. There may be a symbol (star?) behind neck of hero, above fractured spot.

*Gazelle.*—Rampant, regardant. Two straight horns and perhaps one ear indicated. Forelegs not shown; hind legs in walking position. Short tail.

*Period.*—Neo-Babylonian (Achaemenian?).

Stamp seal or amulet PT3 68 (Pl. 17). Roughly pyramidal; pierced near top. Baked clay, black surface. Identical signet ring(?) impressions on two narrow opposite sides and base.

*Find-spot.*—Garrison quarters, Room 16, near S. doorway.

*Pattern.*—Grecized. Nude dancer, in right profile, chest in front view. Head blurred, hair perhaps bunched at back of neck. Arms raised at either side, each hand holding some object, perhaps piece of fabric. Right leg bent; left leg raised and flexed.

*Period.*—Achaemenian.

Signet ring PT5 283 (Pl. 17). Elliptical bezel. Bronze, patinated.

*Find-spot.*—Secondary structure in "Harem Street," southern room, near center of S. wall, Plot HF 35.

*Pattern.*—Bird or winged monster. Standing, in left profile. Head indistinct. Long wing, tip curled forward. Individual feathers marked on wing and oblong body. Claws indicated by dashes.

*Period.*—Achaemenian.

Scaraboid stamp seal PT7 67 (Pl. 17). Elliptical base and domed back. Light gray, translucent chalcedony; set in yellow-gold frame with suspension loop.

*Find-spot.*—Passage 14 (S. of SE. tower of Apadana), floor at S. wall, Plot HE 35.

*Pattern.*—Sphinx, miscellaneous elements.

*Sphinx.*—Sejant, in right profile. Man's head. Bearded, hair bunched at back of neck. Dentate tiara. Body probably that of lion.

Wing with serrate lower edge and slightly curved tip rises obliquely from shoulder. One foreleg marked by vertical dash; other foreleg, raised obliquely forward and up, ends in three digits. Slanting hind leg probably meant to be horizontal. Upcurled tail.

*Miscellaneous elements.*—Crescent above and between tiara and wing tip. Trilobed blossom in front of vertical foreleg.

*Period.*—Achaemenian.

Stamp seal PT4 519 (Pl. 17). Disk; lateral perforation. Polished, black limestone. Patterns on both slightly convex faces.

*Find-spot.*—Treasury, Room 22, in floor depression for socket at SW. corner of doorway, Plot HG 71.

*Pattern a.*—Mede holding two stags.

*Mede.*—Standing, in left profile, chest and arms in front view. Bearded(?), hair bunched at back of neck. Domed Median headdress; long belted coat; trousers. Arms raised above shoulder height, hands grasping hind leg of stag at either side. One leg set back.

*Stags.*—Identical, inverted, suspended from hands of Mede. Small dashes beside curved horns mark them as antlers of stag (rather than horns of antelope). One foreleg and one hind leg marked. Short tail.

*Pattern b.*—Eagle, cow, calf.

*Eagle.*—In flight, wings spread and filling upper segment of circular surface, feathers marked; head and curved neck in left profile, long beak striking neck of cow.

*Cow.*—Running, in left profile. Head with double outline; one end of horns upcurled, other end straight forward (unfinished for lack of space?). Pairs of legs marked by oblique parallel lines. Long tail raised above rump undulates downward. Problematical open triangle in front parallel to chin line and forelegs.

*Calf.*—Perhaps meant to be suckling though shown in running position but in right profile. Head blurred, but at cow's udder. Forelegs marked by two oblique parallel lines; hind legs blurred. Tail perhaps indicated above rump.

*Period.*—Achaemenian (Darius I[?]; see p. 46).

Scaraboid stamp seal PT4 554a (Pl. 17). Rounded oblong, slightly beveled sides, domed back; pierced lengthwise. Bluish-gray lapis lazuli.

*Find-spot.*—Treasury, Room 33, at center of W. wall, 1.50 above floor.

*Pattern.*—Ishtar with halo. Standing, in left profile. Head and headdress shown by one solid circle; smaller circle (representing star) above vertex. Nose indicated; hair bunched at back of neck marked by circle. Circles also mark chin, shoulders, and heels. Long garment from shoulders to ankles. One arm (indicated by plain line) raised obliquely in front; other arm protrudes from chest and ends in circle (presumably representing ring held by hand). Halo of rays ending in solid circles (representing stars) fans out from large ring, parts of which are visible in front and behind figure. Drill used for head and all small solid circles.

*Period.*—Neo-Babylonian (Achaemenian?).

Stamp seal PT5 501 (Pl. 17). Half missing; elliptical, biconvex; pierced lengthwise. White, brown, and black banded onyx.

*Find-spot.*—Treasury, Hall 38, loose dirt, Plot HF 39.

*Pattern.*—Priest(?). Highly conventionalized, standing, apparently in right profile. Large solid circle may represent head; smaller circles below, staggered in size. Long gown extends to ankles. One arm raised obliquely. Problematical object to right is destroyed. Rays of star perhaps in front of head. Circles made with drill.

*Period.*—Neo-Babylonian (Achaemenian?).

Stamp seal PT5 212 (Pl. 17). Elliptical base; three grooves at side, fragment of bronze wire in central groove; top broken. Bluish-white chalcedony.

*Find-spot.*—Treasury, Hall 38, 1.60 above floor, Plot HG 11, near SW. corner.

*Pattern.*—Miscellaneous symbols (see almost identical design of PT6 453). Pleiades (seven solid circles); cross-shaped symbol with solid circle near top; two crescents. Circles made with drill.

*Period.*—Neo-Babylonian (Achaemenian?).

Stamp seal PT6 453 (Pl. 17). Conoid; pierced near apex. White translucent chalcedony.

*Find-spot.*—Treasury, Room 81, at center of S. wall, floor.

*Pattern.*—Miscellaneous symbols (see almost identical design of PT5 212). Pleiades (seven solid circles); cross-shaped symbol with solid

circle near top; two crescents, upper with double outline. Circles made with drill.

*Period.*—Neo-Babylonian (Achaemenian?).

Stamp seal PT4 263 (Pl. 18). Truncated cone; slightly convex base; lateral perforation. Baked clay, brown surface.

*Find-spot.*—Treasury, Room 33, SW. part, Plot HG 51.

*Pattern.*—Animal, sun symbol.

*Animal.*—Walking, in left profile. Horns (or horn and ear) indistinct. Drill circles mark eye, muzzle, and jaw, also joints of legs. One foreleg raised to horizontal position; other foreleg and one hind leg vertical; one hind leg set back obliquely. Tail undulates horizontally.

*Sun symbol.*—Above rump of animal. Solid central circle inclosed by eight stipples, all made by drill.

*Period.*—Achaemenian presumably.

Stamp seal PT4 236 (Pl. 18). Fragmentary; truncated, slightly concave cone; lateral perforation. Baked clay, red-brown and black surface.

*Find-spot.*—Treasury, Plot HG 83, loose dirt.

*Pattern.*—Animal, crescent.

*Animal.*—Only upper part preserved. Body in right profile; head reversed. Jaws appear to be open (lion?). Eye, muzzle, and upper jaw marked by drill holes. Two problematical dashes above head.

*Crescent.*—Above rump and in front of muzzle of animal, slanting, angular.

*Period.*—Achaemenian presumably.

Stamp seal PT3 218 (Pl. 18). Conical (apex missing), slightly convex base; lateral perforation. Yellowish-brown stone.

*Find-spot.*—Eastern fortification, Courtyard 20, at W. side of tower wall, Plot HG 97, W. of center.

*Pattern.*—Antelope, symbol.

*Antelope.*—Running, body in left profile, head reversed. Two undulating horns ending in drill circles; three more drill circles along forward horn. Eye, muzzle, and jaw also marked by drill circles. One ear shown. Dashes mark hair on neck and side of body. Belly line serrate. One foreleg thrown up; other foreleg and one hind leg in running position; second hind leg not shown. Short knobby tail.

*Symbol.*—Problematical line extending from rump of animal obliquely upward. Three drill circles, at ends and center.

*Period.*—Achaemenian presumably.

Stamp seal PT3 268 (Pl. 18). Irregular pyramid, top missing, rounded rectangular base; perforation at fracture. White translucent gypsum.

*Find-spot.*—Eastern fortification, tower debris, Plot HG 98, center E. side.

*Pattern.*—Winged ibex, bird.

*Ibex.*—Sejant(?), in right profile, head reversed. One long curved horn; one long ear marked by horizontal line from back of head. Wing with serrate lower edge curves back from shoulder, tip upcurled. One foreleg raised almost vertically; other foreleg obliquely down. Hind legs unclear, apparently in sitting position.

*Bird.*—Obliquely above wing tip of ibex; in flight. Spread wings and tail feathers marked by oblique dashes.

*Period.*—Achaemenian presumably.

Stamp seal PT4 167 (Pl. 18). Truncated cone, convex base; perforation near top. Baked clay, red-brown surface.

*Find-spot.*—Treasury, Courtyard 17, Plot HG 52, SW. part.

*Pattern.*—Indistinct; apparently animal. Walking, in left profile. Long ear extends forward. Irregular lines at either side of muzzle may be reins; oblique lines may represent legs. Row of oblique dashes on back may mark hair. Dome-shaped object with row of vertical stipples above paired horizontal lines seems to indicate load carried by animal.

*Period.*—Achaemenian presumably.

Signet ring PT5 808 (Pl. 18). Pointed elliptical bezel. Bronze, patinated (chemically cleaned).

*Find-spot.*—Treasury, Hall 38, Plot HF 38.

*Pattern.*—Grecized. Animal nursing young.

*Animal.*—Standing, in right profile. Undulating body and one hind leg indicated. From region of head gently curved line (horn?) extends parallel to back.

*Young.*—Apparently couchant, in left profile. Head steeply raised

toward udder of mother animal. One ear visible. One foreleg perhaps marked, pointing forward. Short tail lies on back.

*Period.*—Achaemenian.

Signet ring PT3 60 (Pl. 18). Elliptical bezel. Yellow gold.

*Find-spot.*—Garrison quarters, Room 16, at center of S. wall, inside baked-clay canteen PT3 59 (Pl. 72:12).

*Pattern.*—Stag. Walking, in right profile. Head slants down in continuation of sloping, serrate back line. One long undulating antler with two or three branches; one oblique ear. Ground line marked.

*Period.*—Achaemenian.

Signet ring PT5 734 (Pl. 18). Elliptical bezel. Bronze, patinated (chemically cleaned).

*Find-spot.*—Treasury, Hall 38, 1.50 above floor, Plot HF 37, NW. part.

*Pattern.*—Lion(?) striking gazelle(?).

*Lion(?)*.—Running, in left profile. One ear (or horn of monster?) points forward from vertex. One foreleg raised to strike; one hind leg flexed in running position. Raised tail curls forward.

*Gazelle(?)*.—Broken down below and in front of lion(?), in left profile. Oval body, long neck marked by line, one ear and one slightly curved horn in front of lion's(?) head. Angular line behind animal may be hind leg.

*Period.*—Achaemenian presumably.

Stamp seal PT5 495 (Pl. 18). Irregular pyramid. Light brown limestone, crudely wrought.

*Find-spot.*—Courtyard N. of Apadana, loose dirt from area of Plot GE 20.

*Pattern.*—Two superposed animals (in combat?).

*Upper animal.*—Standing, in right profile, head lowered. Legs are vertical pairs of lines. Short horizontal tail.

*Lower animal.*—Apparently running, in left profile, but head probably reversed. Horizontal line extending from head toward left may be ear or horn. One foreleg thrown horizontally forward; one hind leg vertical. Tail slopes obliquely down.

*Period.*—Achaemenian presumably.

Stamp seal PT4 1087 (Pl. 18). Irregular truncated pyramid; lateral perforation. Reddish stone.

*Find-spot.*—Treasury, Room 36, loose dirt, Plot HG 32.

*Patterns.*—Lion on base, altar(?) on two opposite sides, eagle on top.

*Lion.*—Couchant, in left profile, head reversed. Two oblique ears; open jaws. Eye, nose, and jaws marked by drill circles. One foreleg and one hind leg flat on ground. Rump raised; obliquely lifted tail with tip curled forward.

*Altar(?)*.—Two superposed triangles with paired outlines in trapezoid frame; vertical line in center of lower triangle.

*Eagle.*—In flight, wings and tail spread, feathers marked. Long neck and head point obliquely toward right lower corner of impression.

*Period.*—Achaemenian presumably.

Stamp seal PT7 368 (Pl. 18). Truncated cone; lateral perforation. Brown-red stone.

*Find-spot.*—Treasury, Vestibule 27, NE. corner, Plot HG 93.

*Patterns.*—Lion and crescent on base, sun symbol on top.

*Lion.*—Couchant, in left profile, head reversed. Mane marked by parallel dashes; eye, nose, and jaws marked by drill circles. Right foreleg raised to strike; left foreleg and two(?) closely flexed hind legs below body. Claws indicated at forelegs. Muscles at upper left foreleg and on rump encircled by lines and marked by crosshatching. Long tail loops forward and touches back.

*Crescent.*—Above lion.

*Sun symbol.*—Small solid circle with twelve rays (usual number of petals of Achaemenian rosettes).

*Period.*—Achaemenian presumably.

Stamp seal PT6 439 (Pl. 18). Elliptical disk, beveled edge. Dark red stone.

*Find-spot.*—Treasury, Hall 73, W. of doorway to Room 74, Plot IG 31.

*Patterns.*—Lion's head on smaller face, winged cervine on opposite face.

*Lion's head.*—In right profile. Large circular eye, neck with mane.

*Cervine.*—Standing, in right profile. Head indistinct; two horns, one

vertical, one slanting forward. Wing extends obliquely from shoulder backward. Legs slant pairwise forward and backward respectively.

*Period.*—Achaemenian presumably.

Stamp seal PT4 321 (Pl. 19). Truncated cone, convex base; pierced near top. Black and light brown limestone.

*Find-spot.*—Treasury, Courtyard 29, floor, Plot IG 03, center.

*Pattern.*—Bird, sun symbol, canine, tree(?).

*Bird.*—Hawk(?) standing, in left profile, head reversed facing sun symbol. Curved beak; encircled eye disk. Feathers on body marked by crosshatching. Bent legs; claws indicated by horizontal strokes. Bifurcate tail.

*Sun symbol.*—Above back of bird. Centered circle with radiant dashes.

*Canine.*—Fox(?), in front of bird, running, in left profile. Jaws open; one long ear. Forelegs thrown forward; hind legs set back. Long tail. Fur marked by faint crosshatching.

*Tree(?)*.—Line with short branches at either side curves from point near mouth of canine along edge of design to point near sun symbol.

*Period.*—Achaemenian presumably.

Ring bezel PT4 269 (Pl. 19). Pointed elliptical. Bronze, patinated.

*Find-spot.*—Treasury, Room 8, Plot HG 83, center.

*Pattern.*—Bird. Walking or standing, in right profile. Straight beak. One leg set forward, other backward; claws marked by horizontal lines.

*Period.*—Achaemenian presumably.

Stamp seal PT4 414 (Pl. 19). Truncated cone; lateral perforation. Red-brown limestone.

*Find-spot.*—Treasury, Courtyard 29, Plot IG 13, near center N. line.

*Pattern.*—Peacock (probably). In left profile. Straight beak; eye marked by drill circle; crest of plumules indicated by knobs above head. Wing feathers marked by crosshatching, separated from true tail feathers (group of horizontal lines) by two vertical dashes. Raised tail coverts marked by two parallel lines rising from back of bird and curving backward. Legs are two oblique parallel lines pointing backward.

*Period.*—Achaemenian presumably.

Signet ring PT6 364 (Pl. 19). Pointed elliptical bezel. Bronze, patinated (chemically cleaned).

*Find-spot.*—Treasury, Hall 62, Plot IF 09.

*Pattern.*—Problematical (stag with two-knobbed antler?).

*Period.*—Achaemenian presumably.

Signet ring PT6 338 (Pl. 19). Pointed elliptical bezel. Bronze, patinated (chemically cleaned).

*Find-spot.*—Treasury, Room 58, W. part, Plot HF 98.

*Pattern.*—Problematical (helmeted head?).

*Period.*—Achaemenian presumably.

Signet ring PT5 86 (Pl. 19). Pointed elliptical bezel. Bronze, patinated (chemically cleaned).

*Find-spot.*—Throne Hall, portico, W. part, floor, Plot GF 30, NE. part.

*Pattern.*—Problematical (boar?).

*Period.*—Achaemenian presumably.

Stamp seal PT7 40 (Pl. 19). Rounded rectangular base; pierced through domed back. Greenish-gray serpentine.

*Find-spot.*—Apadana, S. portico, loose dirt, Plot HE 24.

*Pattern.*—Three diagonal lines, problematical scratches.

*Period.*—Achaemenian presumably.

Stamp seal PT5 113 (Pl. 19). Irregular pyramid; pierced near apex (broken). Grayish-green steatite.

*Find-spot.*—Harem, service quarters, Room 5, in N. doorway, Plot HF 34.

*Pattern.*—Scratched, resembling foot impression. Five "toes" separated by four lines; paired lines across center; "heel" marked by crudely drawn square.

*Period.*—Achaemenian presumably.

Stamp seal PT4 1032 (Pl. 19). Irregular truncated pyramid; pierced near top. Red-brown stone.

*Find-spot.*—Treasury, Room 36, center, .50 above floor.

*Pattern.*—Carelessly scratched cross-shaped figure, each angle filled with one cirlet.

*Period.*—Achaemenian presumably.

## MISCELLANEOUS INSCRIBED OBJECTS

## WALL PEG OF DARIUS I

A peg (Fig. 4<sup>1</sup>) which according to its inscription was made "in the house of Darius"<sup>1a</sup> was actually found in the northern portion of Xerxes' Harem on the floor of Room 8.<sup>2</sup> Fragments of similar objects had previously been uncovered by Herzfeld in unspecified parts of the same building.<sup>3</sup> A peg without inscription is shown on our Plate 42:27. Our inscribed specimen consists of rather dark blue composition (see section on "Egyptian Blue," pp. 133 ff.), resembling lapis lazuli in color. The trilingual (OP, El., Bab.) inscription, incrustated with white matter, encircles in two lines the discoid center, from which a fragmentary perforated "handle" with square cross section projects on one side and the conoid remnant of a rod or point on the op-

abad provided good examples of the use of bottle-shaped *sikkatu* (without inscriptions), although their exact purpose remains doubtful.<sup>7</sup>

The inscription<sup>8</sup> of the Persepolis specimen under consideration shows the Old Persian on the upper line, the Elamite and Babylonian versions on the lower.

Old Persian: *ma-ya-u-xa\ka-a-sa-ka-i-na\*<sup>9</sup> *d[a-a-ra-ya-va-ha-u-ša\š-ha-ya]-a\vi-i-θa-i-ya-a\ka-ra-ta.*

Elamite: *↳ li-gi-ik-nu-maš-na*<sup>10</sup> *↳ da-[ri]-ia-ma-u-i[š] ↳ sunki ↳ ul-ḫi<sup>da</sup> e-ma ḫu-ut-tuk].*

Babylonian: [*sik-kat kar-ri*] *uqnū*(NA<sub>4</sub>.ZA.GIN) *ina*(AŠ) *biti* *↳ da-a-ri-ia-muš šarri e-pu-uš.*

Peg of "lapis lazuli,"<sup>11</sup> made in the house of Darius the King.



FIG. 4. PEG OF BLUE COMPOSITION WITH INSCRIPTION OF DARIUS I (PT5 112). SCALE, 1:2

posite side. There is no proof that these pegs were door-knobs, as suggested by Herzfeld. The Babylonian version of the inscription calls them *sikkat karri*,<sup>4</sup> a term which corresponds in part to the designation *sikkatu* applied for instance to the wall pegs of Assur.<sup>5</sup> Most of the Assur specimens are apparently bottle-shaped, but some types with discoid "guards" resemble the Persepolis objects so closely that they may serve for purposes of reconstruction.<sup>6</sup> Khors-

At the hole piercing the "handle" there is a part of the Old Persian sign *ma*, in Cameron's opinion perhaps beginning the word *ma-ya-u-xa* ("peg" or "nail"). Again, it may simply be the mark of the artisan.

1. See also drawings of this object in *OIC* No. 21, Fig. 42.

1a. "For the house of Darius," might be more appropriate. In Cameron's judgment "in" and "for" are equally valid in regard to the OP version. El. and Bab. definitely state "in the house . . ." (for possible local manufacture see p. 133, n. 4).

2. See Vol. I 256 and Fig. 103.

3. One complete and one fragmentary copy of the Darius text, identical with that of our specimen, and one fragment of an inscribed peg of Xerxes; see *AI*, pp. 23-24 (Nos. 10-11) and Pl. VII.

4. According to the text published by Herzfeld *ibid.* p. 23 (No. 10). In our fragmentary inscription the corresponding words are destroyed. The Babylonian designation suggests an object with distinct head, such as a nail or a spike, and refers presumably to the discoid "guard" of the Persepolis specimens or to the (missing) pommel of the "grip." For an ancient drawing of a hilt-shaped part of the liver called *sikkat karri*, see Bruno Meissner in *Beiträge zum assyrischen Wörterbuch I* (The Oriental Institute of the University of Chicago, "Assyriological Studies," No. I [Chicago, 1931]) p. 61.

5. Walter Andrae, *Das wiedererstandene Assur* (Leipzig, 1938) pp. 144-45. Cf. also Andrae, *Das Gotteshaus und die Urformen des Bauens im alten Orient* ("Studien zur Bauforschung" II [Berlin, 1930]) pp. 78-86; further, F. R. Kraus, "Altmesopotamische Tonnaegel mit Keilschriften" in *Halil Edhem Hâtıra Kitabı* (In Memoriam Halil Edhem) I (Türk Tarih Kurumu, "Yayınlarındın," VII. seri, No. 5 [Ankara, 1947]) pp. 71-113, esp. p. 89.

6. See Andrae, *Das wiedererstandene Assur*, Fig. 64, esp. 3d specimen from bottom, and *Farbige Keramik aus Assur* (Berlin, 1923) p. 29.

7. See Gordon Loud and Charles B. Altman, *Khorsabad. II. The Citadel and the Town* (*OIP* XL [1938]) pp. 42-43, Fig. 6, Pls. 15 A-C and 63:250.

8. Transliterations and translation by Cameron.

9. See *AI*, pp. 230-33; but the assumption that this material "scheint aus echtem, gepulverten lapis, vielleicht auch türkis, mit harzen gemacht zu sein" (*ibid.* p. 231) is wrong (see analysis of "Egyptian blue" on our pp. 133 ff.).

10. Cameron points out that the El. equivalent of Bab. *uqnū* ("lapis lazuli") is *ik-nu-maš-na* (not *ik-nu-me-na*, as given by Herzfeld).

11. The substance of the object is obviously not lapis lazuli but an artificial compound (see n. 9), which may imitate this stone. Herzfeld, *AI* p. 23 (No. 10), translates the pertinent part of the inscription "Knauf aus Blaustein," and Kent (less aptly), *OPG*, p. 137, "Door-knob of precious stone."



## FOUNDATION DOCUMENTS OF XERXES

## GENERAL NOTES

The Persepolis excavations brought to light four sets of foundation records inscribed on slabs of metal and stone. During Herzfeld's regime were found trilingual plaques of gold and silver recording the limits of the empire of Darius I. These plaques had been deposited in the southeastern and northeastern corners of the main hall of the Apadana.<sup>12</sup> In the southeastern corner of the Throne Hall, Herzfeld uncovered a stone slab with a Babylonian inscription of Artaxerxes I, who states that he completed the construction of this building, which his father, Xerxes, had begun.<sup>13</sup> Finally, in a corner of the Harem was found another stone slab, with an Old Persian inscription of Xerxes,<sup>14</sup> proving that this king built the palatial quarters for the royal ladies.

Subsequently we discovered in rooms of the garrison eight additional records of stone with monolingual inscriptions of Xerxes. These eight documents had apparently never been used for their intended purpose—indicated by the find-locations of the other records—namely for deposit in corners of Xerxes' buildings. Their find-conditions are described in Volume I in the section dealing with the garrison quarters.<sup>15</sup> Six slabs were found standing on edge, lined up in the sequence listed in the following table. This means

Field No.	Length and Width	Maximum Thickness	Text	Language	Number of Lines	Remarks
PT3 137	.523	.108	Harem	Babylonian	38	See Pl. 20 B
PT3 138	.530	.118	Harem	Old Persian	48	See Pl. 20 A
PT3 139	.515	.108	Harem	Old Persian	48	Mason's mark § on one lateral edge
PT3 140	.522	.114	Harem	Old Persian	48	Mason's mark Y on one lateral edge
PT3 141*	.523	.116	"Daiva"	Babylonian	50	See Pl. 22 A
PT3 142	.543	.103	"Daiva"	Old Persian	48†	See Pl. 21 B; unfinished inscription on two faces, edges blank
PT3 143	.535	.112	"Daiva"	Old Persian	60	See Pl. 21 A
PT3 337	.529	.110	"Daiva"	Elamite	50	See Pl. 22 B

\* Now in the Oriental Institute Museum (No. A 24120); all the other foundation documents of metal and stone are in the custody of the Iranian Antiquity Service in Tehran.

† Lines 28–30 are omitted in the middle of the text (on the slab edge), part of line 48 and lines 49–60 at the end.

Although both texts have been published repeatedly, we give their most recent translations, in accordance with our policy of presenting our findings as completely as possible while keeping philological comments at a minimum.

that one group of four slabs (PT3 137–40) bearing the same text (see table) formed a continuous row. Two slabs of the second set of four records were aligned with those of the other set. The third (PT3 143) lay horizontally beneath one of the upright stones of its group, and the fourth (PT3 337), broken and fragmentary, occurred about 15 meters to the northwest. All foundation records of stone, including those found in the Harem and the Throne Hall, are made of the same grayish limestone as that used for the structures of the site. The slabs from the garrison quarters closely resemble the foundation stone from the Harem. They are square, and in several instances their faces are pronouncedly convex. The inscriptions extend over both faces and the two intermediate (upper and lower)

12. See Vol. I 70 and 79, Figs. 42 A–B and 43.

13. See *ibid.* p. 129 and Fig. 60 A–B.

14. See *ibid.* p. 255.

15. *Ibid.* pp. 208–9 and Figs. 87 B–E.

edges. The flat lateral edges are blank, except, in two cases, for the masons' marks shown in the table. Four of the newly discovered foundation records repeat in Babylonian and Old Persian the text of Xerxes' Harem inscription. The second set of four slabs records in Old Persian, Elamite, and Babylonian a previously unknown text of Xerxes, which has been labeled the "Daiva" inscription and "Xerxes, Persepolis H" (XPh).

## THE HAREM TEXT

In the first publication of the Harem text Herzfeld dealt with the Old Persian version on the foundation slab found in the Harem (see above).<sup>16</sup> Two subsequent articles, one by the same author<sup>17</sup> and the other by Kent,<sup>18</sup> are based on the inscription of the same specimen. Herzfeld's last publication of the Harem text<sup>19</sup> introduced our newly discovered Babylonian version (PT3 137), the graphic records of which—together with those of all the other foundation documents found with it (PT3 138–43, PT3 337)—the writer had put at his disposal. The Babylonian version convinced Herzfeld at last that Darius died before Xerxes ascended the throne.<sup>20</sup> Herzfeld's earlier conclusions, based on the assumption that Darius abdicated, must therefore be disregarded. Historically important are Xerxes' statements that at the time when Darius ascended the throne his (Darius') father and grandfather were still alive and that Xerxes was chosen by Darius as crown prince in preference to his brothers (verifying Herodotus vii. 3).<sup>21</sup>

Translation<sup>22</sup> of the Old Persian version of the Harem text:

§ 1. A great god is Ahuramazda, who created this earth, who created yonder sky, who created man, who created happiness<sup>23</sup> for man, who made Xerxes king, one king of many, one lord<sup>24</sup> of many.

§ 2. I (am) Xerxes, the Great King, King of Kings, King of countries containing all kinds of men, King in this great earth far and wide, son of King Darius, an Achaemenian.

§ 3. Saith Xerxes the King: My father was<sup>25a</sup> Darius; Darius' father was Hystaspes by name; Hystaspes' father was Arsames by name; and Hystaspes and Arsames were both living at that time, yet, thus unto Ahuramazda was the desire, Darius who was my father, him he made king in this earth. When Darius became king, he built much excellent (construction).

§ 4. Saith Xerxes the King: Other sons of Darius there were, (but) thus unto Ahuramazda was the desire, Darius my father made me the greatest after himself. When my father Darius went away from the throne,<sup>25</sup> by the will of Ahuramazda I became king on my father's throne. When I became king, I built much excellent (construction). What had been built by my father, that I protected,<sup>26</sup> and other build-

16. *SAOC* No. 5 (1932).

17. "Xerxes' Charta von Persepolis," *AMI* IV (1932) 117–39.

18. "A new inscription of Xerxes," *Language* IX (1933) 35–46.

19. *AI* (1938) pp. 35–38 (No. 15).

20. As always believed by Kent (*Language* IX 43–46).

21. Cf. *SAOC* No. 5, pp. 6 ff.

22. Conforming with Kent's final translation (*OPG*, XPh, p. 150), while considering Herzfeld's variants (*AI*, p. 38). Cameron comments that all the OP copies of the Harem text (PT3 138–40) are exactly alike, even to the division of lines, proving that the model from which they were taken was followed slavishly. There are only two scribal errors, both on the same stone (PT3 140): (1) in *zanānām* of line 11, *ma* lacks one of its three vertical wedges; (2) in *ava* of line 39, *va* lacks one of its three horizontal wedges.

23. Herzfeld: "peace."

24. *Idem*: "lawgiver."

24a. *Idem*: "is."

25. Bab.: "went to his fate" (i.e., when he died).

26. Herzfeld: "supervised" (in agreement with Cameron's translation).

ing I added. What moreover I built, and what my father built, all that by the favor of Ahuramazda we built.

§ 5. Saith Xerxes the King: Me may Ahuramazda protect, and my kingdom, and what was built by me; and what was built by my father, that also may Ahuramazda protect.

#### THE "DAIVA" TEXT

The principal publications dealing with this important document are those of Herzfeld<sup>27</sup> and Kent.<sup>28</sup> There are frequent references to the "Daiva" inscription in the recent publications of H. S. Nyberg<sup>29</sup> and Herzfeld<sup>30</sup> dealing with the controversial problems of ancient Iranian religion.

The date of the text under consideration depends on the question whether or not the Ionians of the west coast of Asia Minor are mentioned in its list of nations—the only list of this kind known from the reign of Xerxes. Herzfeld originally believed that the "Ionians that dwell in the sea" include the Greeks of western Asia Minor—lost by Persia in 479 B.C.—and attributed the inscription accordingly to the years between 486 and 480.<sup>31</sup> He subsequently stated that the Ionians of the mainland are not included and that the inscription must therefore be dated between 479 and 472.<sup>32</sup> Again, Kent believes that he has proved that the Ionians of the mainland are indeed mentioned.<sup>33</sup> If Kent is right we have to revert to the originally assumed date, that is, prior to 479.

Philological, religious, and historical aspects of the "Daiva" inscription have been dealt with in the publications cited. We do not know whether Herzfeld carried through his intention to prepare an extensive study of Xerxes' list of nations<sup>34</sup> in conjunction with a study of the tribute procession on the Apadana.<sup>35</sup> Articles dealing with

27. "Xerxes' Verbot des Daiva-Cultes," *AMI* VIII (1936/37) 56–77; *AI*, pp. 27–35 (No. 14).

28. "The Daiva-inscription of Xerxes," *Language* XIII (1937) 292–305, listing also previous announcements of the discovery; "The lists of provinces," *JNES* II (1943) 302–6; "Old Persian *artācā brazmaniya*," *Language* XXI (1945) 223–29; and, finally, *OPG* (1953) XPh, pp. 150–52. Cf., further, Hans Hartmann, "Zur neuen Inschrift des Xerxes von Persepolis," *OLZ* XL (1937) cols. 145–60; Isidore Lévy, "L'Inscription triomphale de Xerxès," *Revue historique* CLXXXV (Paris, 1939) 105–22.

29. *Die Religionen des alten Iran*, trans. H. H. Schaeder (*MVAG* XLIII [1938]).

30. *Zoroaster and His World* (2 vols.; Princeton, 1947).

31. *AMI* VIII (1936/37) 64–65.

32. *Zoroaster and His World* (1947) I 396 (i.e., prior to 471, the year in which Pausanias was driven from Byzantium; see Olmstead, *History of the Persian Empire*, p. 266).

33. *JNES* II 304–5.

34. See *AI*, p. 35; for his initial commentary see *AMI* III (1931) 70 ff.

35. See Vol. I 84 ff.

36. *AMI* VIII 74 ff.; *Zoroaster and His World* I 401.

37. *OLZ* XL, col. 159.

38. *Language* XIII 305.

39. *Revue historique* CLXXXV 117 ff.

40. Conforming with the translation of Kent (*OPG*, XPh, pp. 151 f.) and considering Herzfeld's variants (*AI*, pp. 34 f.). The last (51st) line of the unfinished OP copy of this text (our Pl. 21 B) indicates, according to Herzfeld (*AMI* VIII 62), that the artisans who engraved the inscription were illiterate "und hatten eine vom aramäischen herkommende Schulung, waren also wahrscheinlich weder Perser, noch Babylonier, noch Griechen."

41. Herzfeld: "peace."

44. *Idem*: "Harēv."

42. *Idem*: "lawgiver."

45. See *JNES* II 304–5.

43. *Idem*: "Zranka."

46. Herzfeld: "Magan."

47. *Idem*: "die Akaufačiya" (cf. *AMI* VIII 72).

48. *Idem*: "die Punt."

the rebellious province(s?), with the identification of the *daivā*, and with their place(s?) of worship show the controversial character of at least a part of the inscription. Herzfeld believes that the *daivā* are the pre-Zoroastrian deities whose temples Xerxes destroyed in the rebellious mother countries of Iran: Media, Persia, and Susiana.<sup>36</sup> Hartmann<sup>37</sup> and Kent<sup>38</sup> point out that the Old Persian version mentions only one rebellious province and only one place where the *daivā* were worshiped. Hartmann, referring to Herodotus i. 183, identifies the "Daivatemple" with the temple of Marduk in Babylon, desecrated by Xerxes in the beginning of his reign. Lévy<sup>39</sup> offers the least plausible theory. He correlates the destruction of the Acropolis of Athens (480 B.C.) with Xerxes' sacking of the temple(s?) referred to in our inscription.

Translation<sup>40</sup> of the Old Persian version of the "Daiva" text:

§ 1. A great god is Ahuramazda, who created this earth, who created yonder sky, who created man, who created happiness<sup>41</sup> for man, who made Xerxes king, one king of many, one lord<sup>42</sup> of many.

§ 2. I (am) Xerxes the Great King, King of Kings, King of countries containing all kinds of men, King in this great earth far and wide, son of King Darius, an Achaemenian, a Persian, son of a Persian, an Aryan, having Aryan lineage.

§ 3. Saith Xerxes the King: By the favor of Ahuramazda, these are the countries of which I was king outside Persia; I ruled over them; they bore tribute to me; what was said to them by me, that they did; my law, that held them firm: Media, Elam, Arachosia, Armenia, Drangiana,<sup>43</sup> Parthia, Aria,<sup>44</sup> Bactria, Sogdiana, Chorasmia, Babylonia, Assyria, Sattagydia, Sardis, Egypt, Ionians,<sup>45</sup> those who dwell by the sea and those who dwell across the sea, men of Maka,<sup>46</sup> Arabia, Gandara, Sind, Cappadocia, Dahians, Amyrgian Scythians, pointed-hat Scythians, Skudrians, men of Akaufaka,<sup>47</sup> Libyans,<sup>48</sup> Carians, Ethiopians.<sup>49</sup>

49. *Idem*: "die Kūsh." On our map of the Achaemenid Empire (Vol. I, Fig. 2) the countries or peoples listed in the "Daiva" text are entered as follows:

<i>Text</i>	<i>Map</i>
Media	Māda
Elam	Ūvja
Arachosia	Harauvatiš
Armenia	Armina
Drangiana	Zranka
Parthia	Parthava
Aria	Haraiva
Bactria	Bāxtriš
Sogdiana	Sugda
Chorasmia	Uvārazmiš
Babylonia	Bābiruš
Assyria	Athurā
Sattagydia	Thataguš
Sardis	Sparda
Egypt	Mudrāya
Ionians	Yaunā
those who dwell by the sea	Yaunā Tyaiy Drayahyā
those who dwell across the sea	Yaunā Takabarā (the "petasos-wearing Ionians," pictured and named on Darius' tomb, whom we tentatively identify as "those who dwell across the sea")
men of Maka (Macians)	Maka
Arabia	Arabāya
Gandara	Gandāra
Sind	Hinduš
Cappadocia	Katpatuka
Dahians	Dahā
Amyrgian (haoma-drinking?) Scythians	Sakā Haumavargā
pointed-hat Scythians	Sakā Tigraxaudā
Skudrians	Skudra
men of Akaufaka (Akaufa-čiya)	Ākaufaka
Libyans	Putāyā
Carians	Karkā
Ethiopians	Kūšiyā

§ 4a. Saith Xerxes the King: When I became king, there is among these countries which are inscribed above (one which) was in commotion.<sup>50</sup> Afterwards Ahuramazda bore me aid; by the favor of Ahuramazda I smote that country and put it down in its place.

§ 4b. And among these countries there was (a place) where previously false gods (*daivā*) were worshiped. Afterwards, by the favor of Ahuramazda, I destroyed that sanctuary of the demons,<sup>51</sup> and I made proclamation: The demons shall not be worshiped! Where previously the demons were worshiped, there I worshiped Ahuramazda and Arta reverent(ly).<sup>52</sup>

§ 4c. And there was other (business) that had been done ill; that I made good. That which I did, all I did by the favor of Ahuramazda. Ahuramazda bore me aid, until I completed the work.

§ 4d. Thou who (shalt be) hereafter, if thou shalt think, "Happy may I be when living, and when dead may I be blessed," have respect for that law which Ahuramazda has established; worship Ahuramazda and Arta reverent(ly).<sup>53</sup> The man who has respect for that law which Ahuramazda has established, and worships Ahuramazda and Arta reverent(ly),<sup>53</sup> he both becomes happy while living, and becomes blessed when dead.

§ 5. Saith Xerxes the King: Me may Ahuramazda protect from harm, and my royal house, and this land; this I pray of Ahuramazda, this may Ahuramazda give to me.

#### PROBLEMATICAL FRAGMENT

An indeterminate piece of a foundation document (Fig. 5), made of the usual grayish limestone, occurred in the Treasury 55 cm. above the floor of Room 16. The almost cubical fragment<sup>54</sup> is 9.8 cm. thick. As to the remnants of the Elamite inscription, preserved on the two faces, Cameron, who read the text, comments as follows:

"The inscription cannot be fitted into any known text. The forms of some of the signs resemble more closely those

of Artaxerxes III (e.g. *na*, *ki*, *iš*); others seem to show a somewhat earlier stage; still others (e.g. *ni*, *ir*) have no known parallels and may have arisen through the influence of some Old Persian signs (e.g. *a*, *pa*)."



FIG. 5. FRAGMENT OF FOUNDATION DOCUMENT INSCRIBED IN ELAMITE (PT4 17). SCALE, 1:4

#### SIDE a

1. [. . .] *r*-*e* *ki-ti* *d*[*a*- . . .] . . .
2. [. . .] *iš*(?) *hu-be-na* *ku-u*[*d-da*(?) . . .] . . . of that . . . , and . . .
3. [. . .] *na* *taš-šu-íp*(!) *n*[*a* . . .] . . . of the people (army) . . .
4. [. . .] *ap-pa* *ri-na*[. . .] . . . who . . .

#### SIDE b

1. [. . .] *ni* *ha'* *me-ir* *ku*[. . .] . . . there . . .
2. [. . .] *pu-hu* *ud*[. . .] . . . family . . .
3. [. . .] *hu-u*[*d-da-iš-ni* [. . .] . . . may he make . . .
4. [. . .] *ra-na*[. . .] . . .

## RITUAL OBJECTS OF GREEN CHERT

### FIND-CONDITIONS

The savage destruction of the Persepolis Treasury is documented by close to three hundred ritual vessels, mortars, and pestles which the despoilers of the royal storehouse shattered into pieces and scattered in the same manner as the tableware of the king (see p. 81). By far the majority of these objects had been stored in the last addition to the building, namely Hall 38 and its subsidiary rooms, as shown on the find-spot plan (Fig. 6). A small number of specimens occurred in Hall 41 and other units of the central section of the Treasury, but only three pieces had strayed into the southern and earliest portion of the building.<sup>55</sup>

50. The Bab. version (see *AI*, pp. 30 ff.) speaks plurally of countries which became rebellious and of establishments of the *daivā* (see § 4b), whereas Kent's translation of the OP speaks of one rebellious country and one "sanctuary of the demons." The El. version, again, appears to mention more than one rebellious land or province, to judge by F. H. Weissbach's translation (see *Studia et documenta ad iura Orientis antiqui pertinentia* II 191). In the El. record the passages dealing with the *daivā* establishment(s?) mentioned in § 4b are fragmentary.

51. Herzfeld: "daiva-stables."

52. *Idem*: "Ahuramazdā mit Rtam dem brazmanischen"; but cf. Kent in *Language* XXI (1945) 223 ff.

53. Herzfeld: "Ahuramazdā mit Rtam dem brazmanischen."

54. Apparently fashioned into this shape (to be used as pounding stone?) from a piece of the foundation slab.

55. Additional, presumably reused objects of this category were found in the previously excavated post-Achaemenid Fratadara temple northwest of the Persepolis Terrace (see Vol. I 56) and in a post-Alexandrian building with a Persepolis doorway (see *ibid.* pp. 55-56).

### MATERIAL, FORMS, FREQUENCIES

All objects of this group are made of hard green stone which has been identified as impure chert,<sup>56</sup> usually patterned with light and dark bands or veins. The surfaces of the objects were always smoothed and often highly polished, especially those parts which are inscribed (see below).

Vessels of green chert are represented by plates and trays. Three of the eighty-five plates have a rounded, laterally projecting lip (e.g. Pl. 24:5). Where preserved, the lips of all others are squared (e.g. Pl. 24:1-3). On one plate a groove encircles the exterior just below the rim. Otherwise, there are only minor variations in size, thickness, and depth. The bases of all plates project somewhat and form a flat disk, at times slightly convex at the bottom. Here we want to point out that—except for their usually thinner walls—many serpentine plates (e.g. Pl. 59:6-7) which we classify as royal tableware are identical in shape with the green chert plates with squared lips.

The chert trays are represented by three curved fragments and four pieces with straight sides. The trays with curved outline are illustrated by two examples (Pl. 24:4, 6), one of which (No. 4) has an intermittent ledge such as is found on many plates and trays of royal tableware. The profile of one fragment is almost identical with that of the marble tray shown on Plate 64:5, and the profiles of two pieces with straight sides (one being a corner of an

56. According to the petrologist, Mrs. Hans Ramberg, who identified the stone, the green color is caused by impurities such as clay and probably glauconite.

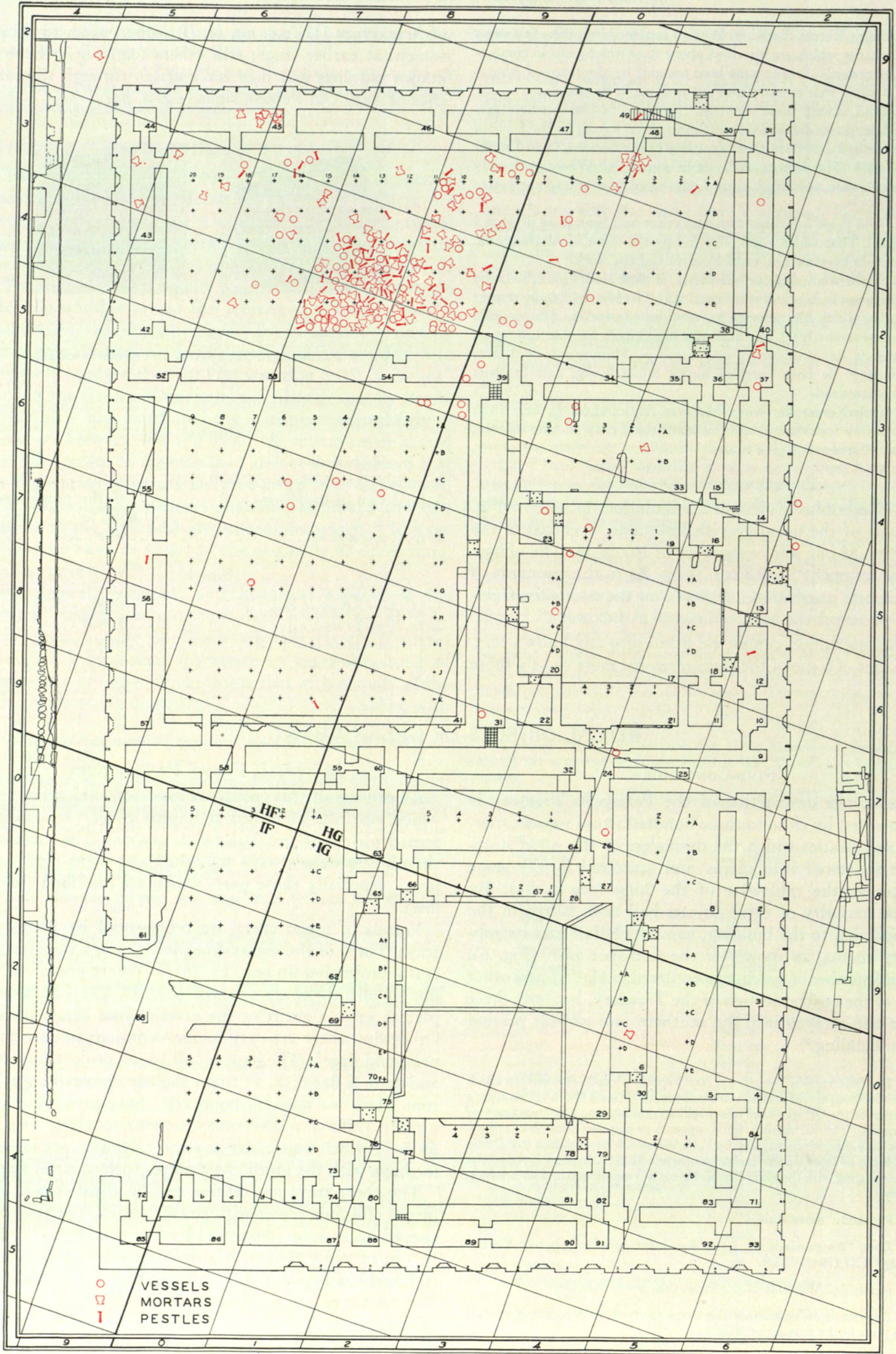


FIG. 6. FIND-SPOTS OF RITUAL OBJECTS OF GREEN CHERT IN TREASURY. SCALE OF PLAN, 1:500 (ALL OBJECTS SHOWN AT EXAGGERATED SCALE)

angular tray) correspond to the profiles of the trays shown on Plate 64:1 and 3.

A green chert bowl with three lion legs (Pls. 55:3, 56:1) included in the category of royal tableware may have been an object of ritual use, as are the other chert objects, in spite of the fact that it does not bear an inscription (see p. 89).<sup>57</sup>

The quantity of green chert mortars (97) and pestles (80) once stored in the Treasury is astonishing. We are quite sure, furthermore, that during the pillage a number of these objects were removed from the building. Our opinion is supported by the condition and the find-spot of two specimens, a mortar and a pestle, both beautifully patterned and—the only ones of their categories—perfectly preserved (Pl. 23:1–2). Found in the doorway between Rooms 37 and 40, they must have been lost by one of the pillagers on the way to the northern exit, although their find-level (about a meter above the floor) is puzzling.

The mortars as well as the pestles of green chert have stereotyped shapes. Almost all mortars have a roughly hemispherical top with squared rim (see Pls. 23:1,4; 24:11–12). However, in a few cases the top part is oblong with almost straight sides. The conoid base has squared edges, beveled in some instances with an inward slant. The bottom is frequently more or less convex (see Pl. 24:10–12). As the mortar would have greater stability if its bottom were flat, the purpose of the convexity may have been to facilitate rocking or revolving.

All pestles have a discoid head, usually somewhat convex on top, and a shaft with rather straight sides which are in some cases slightly convex or, rarely, somewhat concave. The shaft expands toward the rounded grinding end. Two pestles in our collection consist only of a shaft with two wrought ends. It may be that the heads of these specimens were accidentally broken and that the fractured ends were carefully reground.

FREQUENCY OF OBJECTS OF GREEN CHERT

	Inscribed	Noninscribed	Total
Plates	55	30	85
Trays	1	6	7
Mortars	79	18	97
Pestles	68	12	80
Total	203	66	269

#### INSCRIPTIONS, INTERPRETATION, DATING

The majority of plates, mortars, and pestles of green chert bear Aramaic inscriptions in ink. Those of the plates and mortars are written across the exterior bottom surfaces (see Pl. 23:1,5). Only one of the tray fragments shows the remnant of an inscription on its bottom. The pestles are inscribed on top of their discoid heads (see Pl. 23:3). The very presence of these ink inscriptions marks the distinctive nature of our green chert objects, for none of the vessels or other finds from the Treasury show traces of such inscriptions. However, it must be admitted that the decomposition of the surfaces of a mortar and pestles of bronze (see Pl. 80:7)—whose shapes are identical with those of many corresponding chert objects—would have

57. Another green chert object, said to be from Persepolis (but actually found by Herzfeld in the Fratadara temple), has been published in *IAE*, p. 263 and Fig. 366. It is roughly cylindrical and shows at the fractured end the well carved head of a lion or leonine monster. Herzfeld considers the object a foot (of some piece of furniture presumably).

destroyed any ink inscriptions. Further, we cannot completely disregard the possibility that certain serpentine plates may have had some purpose related to that of the chert plates (see p. 53). The partly green color of the serpentine vessels, usually mottled black and green, may have bearing on this point.<sup>58</sup>

The first indication of the purpose of our chert objects was provided by the remarkable pattern of seal No. 20, which undoubtedly pictures the haoma ritual: two priests, a fire altar beneath the sacred symbol, and—prominently displayed upon a table beside the altar—a mortar with inserted pestle (see Pl. 7). In the description of this seal we dealt with the use of mortar and pestle during the haoma ceremony (see pp. 9 and 26).<sup>59</sup> We do not know the specific use of the green chert vessels, but in connection with the haoma ceremony cups and plates are mentioned in addition to mortars and pestles.<sup>60</sup>

In 1939, at Persepolis, Cameron examined our entire collection of inscribed chert objects. His records, and our photographs of all readable texts, were subsequently put at the disposal of Bowman. The initial results of Cameron's work are mentioned in his publication of the Treasury tablets.<sup>61</sup> Additional information was given by him to the writer in 1948, but prior to Bowman's final publication of the Aramaic inscriptions Cameron's translation and comments now to follow must be considered tentative.

The texts on mortars, pestles, and plates embody a stereotyped formula and read approximately as follows:

In . . .<sup>62</sup> the fortress,<sup>63</sup> into the hand of *N* the *sgn*,<sup>64</sup> *X* made this mortar<sup>65</sup> (or pestle<sup>66</sup> or plate<sup>67</sup>).<sup>68</sup> To *Y* the treasurer in the presence of *Z* the assistant treasurer<sup>69</sup> (it is) a gift. Year . . .

Cameron has previously emphasized that the treasurers mentioned in these Aramaic inscriptions do not tally with the officials named in the Treasury tablets, and he suggested that the inscriptions—and hence the objects inscribed—date from the reigns of two consecutive rulers (not mentioned in the texts), probably Artaxerxes I (465–423 B.C.)

58. See *AI*, p. 231 (*pāzahr*); also R. C. Thompson, *A Dictionary of Assyrian Chemistry and Geology* (Oxford, 1936) pp. 154–56 ("The Green Stones").

59. For additional references to the ritual use of mortar and pestle see Adolf Rapp, "Die Religion und Sitte der Perser und übrigen Iranier nach den griechischen und römischen Quellen," *ZDMG* XX (1866) 89.

60. See Modi, "Haoma," in *Encyclopaedia of Religion and Ethics* VI 509, and the same author, "Haoma in the Avesta," in *Anthropological Papers Read before the Anthropological Society of Bombay* (Bombay, 1911) pp. 233 ff.

61. See *OIP* LXV 6 and 34.

62. At this point each text shows one of three words of problematical meaning, perhaps proper names indicating a place, a building, or part of a structure.

63. *birta*.

64. "Chief(?)" or "viceroy(?)."

65. *hwn* = *hāvana*. Following Bowman's discovery that this word, appearing only in mortar texts, is the Avestan name for mortar, the words for pestle and plate were also determined. [Modern Persian still uses the term *hāvan* for mortar, and the same term—adopted from Persian, as suggested by Landsberger—is used in modern Turkish.—SCHMIDT.]

66. *ʾbswn*, appearing only on pestles.

67. *šhr* (less probably *šhd*), appearing only on plates.

68. In the texts on mortars and pestles the name of the object is frequently followed by *zi gll*, "(an object made) of *galāla* stone." [According to Herzfeld, Bab. *aban galāla* is not the name of the material but refers to the manner in which it was wrought, i.e., in the case of our mortars and pestles perhaps fashioned (and polished?) by turning (see *AI*, p. 100). However, Landsberger (oral information) rejects Herzfeld's interpretation and agrees with V. Scheil, who suggests (*MDP* XXI [1929] 31) that the Babylonian term designates stone of a certain quality, perhaps "hard."—SCHMIDT.]

69. *ʾpgnzbr*. Dr. Wilhelm Eilers first recognized the fact that this word is to be read as OP *upaga*"*zabara*.

and Darius II (423–404), or perhaps Artaxerxes II (404–359 B.C.) and Artaxerxes III (359–338/37).<sup>70</sup>

The following table,<sup>71</sup> composed by Cameron, tentatively attributes to Artaxerxes I the objects which were consigned to the treasurer Megabates between the 15th and 24th regnal years, that is, between 450/49 and 441/40 B.C. The remaining objects, whose inscriptions mention Megabates (replaced, finally, by the treasurer Datmithra), are assignable to 420/19–405/4 B.C., for they are dated from the 4th to the 19th regnal years of the succeeding ruler, namely Darius II, provided that the preceding group of objects is correctly assigned to Artaxerxes I.

sgn <sup>2</sup>	Treasurer	Assistant Treasurer	Year	King
Ariyavahush	Megabates	unknown	15	Artaxerxes I?
Ariyavahush	Megabates	unknown	19	Artaxerxes I?
Ariyavahush	Megabates	Šškrn	20	Artaxerxes I?
Ariyavahush	Megabates	Šškrn	21	Artaxerxes I?
Ariyavahush	Megabates	unknown	24	Artaxerxes I?
Mithraka	Megabates	Mazdadates	4	Darius II?
Mithraka	Megabates	Mazdadates	5	Darius II?
Mithraka	Megabates	Mazdadates	6	Darius II?
Mithraka	Megabates	Mazdadates	7	Darius II?
Mithraka	Megabates	Mazdadates	10?	Darius II?
Amadat	Megabates	Mazdadates	10	Darius II?
Mithrapates	Megabates	Mazdadates	10	Darius II?
Mithrapates	Datmithra	Mahdat	12	Darius II?
Mithrapates	Datmithra	Mahdat	13	Darius II?
Mithrapates	Datmithra	Mahdat	18	Darius II?
Mithrapates	Datmithra	Mahdat	19	Darius II?

## VOTIVE OBJECTS FROM MESOPOTAMIA<sup>72</sup>

### GENERAL NOTES

Dedicatory inscriptions, or remnants suggestive of such, mark certain beads, eye stones, cylinders, and perhaps a tablet—all found in the Persepolis Treasury—as votive objects which had once presumably been deposited in temples of Babylonia and Assyria. The votive deposits discovered by us in the pre-Achaemenian sanctuary at Surkhah Dum<sup>73</sup> in Luristan also included inscribed beads and eye stones, in addition to great numbers of other objects, such as seals, anthropomorphous and theriomorphic figurines, miniature weapons, personal ornaments, and so forth. In other words, almost any object may have served as a votive offering; but it can only be defined as such by a dedicatory inscription, by its location in a sacred spot, or at times by its form or decoration. Were it not for their inscriptions, the beads and eye stones under consideration could not be distinguished from personal ornaments and decorative amulets (cf. p. 76). On the other hand, it would be difficult to think of any purpose for the long cylinders. Without inscriptions or images of deities they would have to be considered objects of problematical use.

Almost all inscribed beads and eye stones are made of onyx or other varieties of chalcedony. Only one eye stone (PT6 233; p. 58), ovoid in shape, is made of turquoise. Lapis lazuli was preferred for the inscribed cylinders; but chalcedony, a similar siliceous stone, and calcareous stones also were used. All cylinders were smoothed or polished. In two cases a bronze tube was found inserted in the perforation, and the hole of one of the noninscribed specimens was filled with a solid rod of the same material. The most interesting material employed for the noninscribed cylinders (see table on p. 64) is a composition (see section on "Egyptian Blue," pp. 133 ff.) in darker and lighter shades of blue, perhaps imitating lapis lazuli and turquoise.

Three of the four inscribed beads have common forms, elliptical and spheroid. The fourth specimen, of oval plan with octagonal cross section (PT4 1173; p. 58), is some-

70. See *OIP* LXV 34.

71. Based on all the inscriptions.

72. The transliterations and translations of the inscriptions, and pertinent philological comments, were prepared by Cameron, assisted at times by colleagues, as acknowledged in each case. During the final stage of this work Professor B. Landsberger's help was of particular value. The transliterations of those texts which are not illustrated by drawings or photographs are based on transcriptions made in the field by Donald E. McCown.

73. Including objects ranging from the second half of the 2d millennium to the first half of the 1st millennium B.C. The results of the Luristan Expedition are being prepared for publication.

what unusual. Most of the inscribed eye stones have the same shapes as the noninscribed specimens illustrated on Plate 44:28–39. The diametrically perforated stones had presumably been strung in the fashion of beads or pendants. Most specimens have a beveled edge indicating that they had been set in some device such as the brooches illustrated on Plate 45:14–17 (see also p. 77).<sup>74</sup> Further proof for the attachment of many eye stones to other objects is provided by diametrical grooves found on the underside of some specimens. At least in one case occurred remains of bitumen which had served as an adhesive. Apparently it did not matter that the inscription—engraved usually on the base and at times on the side—was thus completely hidden from view (see Pl. 25:3–5). The settings of the stones under consideration may well have been of precious metal, presumably gold, considering the fact that almost all of them bear royal dedications. During the looting of the site the stones were apparently pried or smashed from their settings and discarded.

All inscribed votive objects found in the excavations of the site had been stored in the Treasury, and most of them occurred in the very fertile archive Room 33<sup>75</sup> or in its immediate vicinity. A few objects were found in the large treasure halls (41 and 38) and in one of their subsidiary rooms (53). One fragment of a votive cylinder (PT4 328; p. 58) occurred in its original storage room (33); but a second portion of the same object (PT4 99)—presumably once attached to a worth-while piece of plunder (see below)—had been carried to a porch (19) of Courtyard 17, where it was discarded. One cylinder fragment (PT5 17; see p. 59) was found in Room 40, one of the passages leading to the northern exit of the Treasury.

Most of the inscriptions on these beads, eye stones, and cylinders were written by the order of kings dedicating the objects to certain deities. The names of the following kings are mentioned:

Sargon (II, of Assyria, 721–705 B.C.<sup>76</sup>): bead PT4 548a, eye stone PT4 1170 (pp. 57, 58)

Esarhaddon (680–669 B.C.): cylinder PT4 904 (p. 61)

Ashurbanipal (668–633[–x]B.C.): eye stone PT4 455 (p. 58)

Nebuchadnezzar (II, of Babylon, 605–562 B.C.): eye stones PT6 250 (p. 58) and PT4 1168 (p. 58, n. 89)

74. Robert Koldewey suggests that such objects were used as ornaments on the crowns and garments of divine statues (*Das wieder erstehende Babylon* [4th ed.; Leipzig, 1925] p. 217).

75. See Vol. I 174.

76. For a tabulation of the reigns of Assyrian kings see Arno Poebel, "The Assyrian king list from Khorsabad," *JNES* II 85–88.

Two additional eye stones (PT4 495, PT6 233; p. 58) should be attributed probably to Sargon, one bead (PT4 1173; pp. 57 f.) and one cylinder (PT4 1180; p. 59) to Ashurbanipal, and one bead (PT4 1175; p. 58) to Nebuchadnezzar. Finally, the remnants of inscriptions on a bead (PT4 1174; p. 58) and a cylinder (PT5 17; p. 59) show that their dedicators were kings, whose names, however, are not preserved. Identical—as far as preserved—inscriptions on an eye stone (PT4 455; p. 58) and a cylinder (PT4 1180; p. 59) suggest that the two categories of objects were valued alike in propitiating the deities. At least one cylinder (PT4 99 and 328; pp. 58 f.) mentions persons of unknown rank, whose names too appear to be unknown elsewhere.

A discovery of Koldewey at Babylon<sup>77</sup> throws light on the purpose, manner of use, and embellishment of our votive cylinders. In the mound 'Amran ibn 'Ali, Koldewey found "six round staffs, 4 cm. thick and 20 cm. long, two of which consisted of a beautiful light blue mass and four of lapis lazuli." The "light blue mass" is undoubtedly the substance which we call composition (see "Egyptian Blue," pp. 133 ff.), evidently known in Babylon before Persepolis existed. Four of Koldewey's staffs are plain. Two of these are made of lapis lazuli and two of composition, the two materials used most frequently for our plain cylinders tabulated on page 64. The other two Babylon specimens, made of lapis lazuli, each bear the relief of a god and cuneiform inscriptions. One cylinder, although dedicated by the Assyrian king Esarhaddon (680–669 B.C.) to Marduk, the city god of Babylon, bears the image of Adad, the weather-god.<sup>78</sup> To the Assyrian dedication is added a Neo-Babylonian registration text: "Property<sup>79</sup> (treasure<sup>80</sup>) of the god Marduk. Seal of the god Adad from the temple Esagila." This inscription leaves no doubt that the cylinder had been deposited in the temple Esagila of Babylon.

The second cylinder shows the relief of Marduk, to whom the king Marduk-zakir-shum I—contemporary and apparently vassal<sup>80a</sup> of Shalmaneser III of Assyria (858–824 B.C.)—dedicated the object, as indicated by its (Neo-Babylonian) inscription.<sup>81</sup> The head of Marduk and his headdress are so similar to the head and hat of the god shown on our cylinder PT4 861 (p. 59 and Pl. 26:1) that there is hardly a doubt as to their identity, and the god's head of cylinder PT4 777 (p. 59 and Pl. 25:7) also is presumably that of Marduk. The fact that both our cylinders are dedicated to the god Nabu does not necessarily contradict this identification, for the Esarhaddon cylinder found at Babylon likewise pictures a god distinct from the god invoked.

The inscription of the second Babylon cylinder states that the king ordered to be made and dedicated to Marduk a "seal (*kunukku*) of pure lapis lazuli, properly decorated with red gold, an ornament of his (the god's) holy neck."<sup>81a</sup> Evidently *kunukku* designates the cylinder itself; but Kol-

dewey believes that the term applies also to the rod held, together with a ring, by the god Marduk in the design of the cylinder.<sup>82</sup> However, the reference to the cylinder's use as a neck ornament of the god (i.e., of his statue) cannot be disregarded.<sup>83</sup> One could imagine that the necks of the golden statues<sup>84</sup> of Marduk and other gods in the temple Esagila were encircled by necklaces of gold-capped or gold-sheathed (see below) cylinders—though perhaps on special occasions only, for the images of the gods engraved on cylinders and seals show no clues suggesting the presence of such necklaces.<sup>84a</sup> The reference to the use of gold in the decoration of the Babylon cylinder justifies our suspicions with regard to the reason for the rough treatment of the votive cylinders (and also of the eye stones, beads, and other objects) found in the Persepolis Treasury. Weissbach mentions that the cylinder of Marduk-zakir-shum had originally a coat ("Überzug") of gold, some traces of which were preserved on the object.<sup>85</sup> We may assume that the cylinders—inscribed or plain—found at Persepolis were once embellished in the same fashion. The looters of the building did not care for the votive stones, which they broke in order to obtain the gold attached to them. While it is more plausible to assume that the cylinder ends only were provided with caps of gold, it is possible that each cylinder had been completely covered with a golden sheath. The underlying inscription and reliefs could have been made to appear on the gold cover by a slight pounding of the soft metal; but we may never know whether the plain specimens had gold covers with independently engraved inscriptions and patterns. The votive beads, of course, could have been embellished in the same manner as the cylinders, or they could have been set in gold similar to the assumed gold settings of the inscribed eye stones mentioned above.

#### INSCRIBED BEADS

PT4 548a (Pl. 25:1, impression). Complete; onyx, bluish white and brown; elliptical; pierced lengthwise; length 2.6 cm., maximum diameter, 1.3 cm.

*Find-spot.*—Treasury, Room 33, SE. corner, in refuse 1.00–1.50 above floor.

*Inscription.*—Four lines; dedication by Sargon (II) of Assyria to the goddess Aia:

1. <i>ana</i> <sup>a</sup> <i>a-a</i>	To Aia,
2. <i>bēlti</i> (GAŠAN)- <i>šú</i> <sup>m</sup> <i>šarru</i> (20)- <i>kīn</i> (GIN)	his lady, Sargon,
3. <i>šar</i> (20) <i>māt</i> (KUR) <i>aššur</i> (AŠ)	King of Assyria,
4. <i>ana</i> <i>balāti</i> (TI)- <i>šú</i> <i>iqēš</i> (BA[!]-eš[?])	presented (this) for his life.

PT4 1173 (not illustrated). Fragment; chalcedony, gray and white; flat ellipsoid with octagonal cross section; pierced through short axis; breadth, 1.9 cm., height, 1.5 cm.

82. *Das wieder erstehende Babylon* (4th ed.) p. 216 and Fig. 135. According to Güterbock, *kunukku* designates a seal proper as well as a seal impression ("Das Siegel bei den Hethitern," *Studia et documenta ad iura Orientis antiqui pertinentia* II 32).

83. See also *MDOG* No. 5, p. 15. The Babylon cylinders too have lengthwise perforations; see Koldewey, *Das wieder erstehende Babylon* (4th ed.) p. 216.

84. Herodotus (i. 183) in speaking of the sanctuaries of Babylon mentions "a great golden image of Zeus, sitting at a golden table." His story (*ibid.*) of the removal of a golden statue (the same?) by Xerxes may have bearing on our discovery at Persepolis of votive objects dedicated to Babylonian deities. As to "the golden garments of the gods," see A. Leo Oppenheim in *JNES* VIII (1949) 172–93.

84a. Again, the "neck ornament" may refer to a singly suspended *kunukku*.

85. *Babylonische Miscellen*, p. 17. To our regret, Weissbach does not specify the character (foil or sheet) or location of the gold fragments. As to proof for the use of gold settings for eye stones and beads, see *JNES* XV (1956) Pl. II.

77. *MDOG* No. 5 (1900) pp. 5, 6, 11–15.

78. *Ibid.* Fig. 2 and pp. 12–13; Weissbach, *Babylonische Miscellen* (*WVDOG* IV [1903]) Fig. 2 and p. 17.

79. Weissbach, *loc. cit.*

80. *MDOG* No. 5, p. 13.

80a. See A. T. Olmstead, *History of Assyria* (New York and London, 1923) pp. 121 f.

81. *MDOG* No. 5, pp. 13–15 and Fig. 3; Weissbach, *op. cit.* pp. 16–17 and Fig. 1.

81a. Translation revised by Professor A. Leo Oppenheim.

*Find-spot*.—Treasury, refuse from area of Room 33.

*Inscription*.—Fragmentary, on side; perhaps of Ashurbanipal, partly restored:

[. . . <sup>m</sup>*aššur-bān*]-*apli*(A) *ša[r māt*(KUR) *aššur*].

PT4 1174 (not illustrated). Fragment; onyx, banded brown and white; long ellipsoid; pierced lengthwise; length, 3+ cm., diameter, 1 cm.

*Find-spot*.—Treasury, refuse from area of Room 33.

*Inscription*.—Remnants of eight lines encircle bead at fracture; first sign of each line preserved. According to Cameron, inscription indicates that object is from some "palace" (line 1) of some "king" (line 2), probably Ashurbanipal, who so began many of his texts:

1. *ēkal* (KUR) <sup>m</sup>. . .
2. *šar* . . .
3. *šá* . . .
4. *i*(?)-. . .
5. *up*(?)-. . .
6. *giš*(?) . . .
7. *šá* . . .
8. *eš*(?)-. . .

PT4 1175 (not illustrated). Fragment; chalcedony, white and pink; spheroid; 1.5 × 1.2 cm.

*Find-spot*.—Treasury, refuse from area of Room 33.

*Inscription*.—Parts of four Neo-Babylonian signs preserved near perforation; reading uncertain, but text appears to mention name of Nebuchadnezzar (II):

[. . . <sup>m</sup>*nabū*]-*kudurru*(NÍG.DU)-*ušur*(ŠEŠ) . . . .

#### INSCRIBED EYE STONES

PT4 495 (not illustrated; same shape as Pl. 44:33). Fragment; onyx, polished top with gray center and white margin; lateral perforation.

*Find-spot*.—Treasury, Room 33, NE. corner, floor.

*Inscription*.—Parts of two lines in Neo-Babylonian script on bottom. Text may have been identical with that of Sargon(?) on PT6 233:

- |  |                       |
|--|-----------------------|
| 1. <i>ana</i> <sup>d</sup> <i>šamaš</i> <i>bēli</i> (!)- <i>šú</i> | To Shamash, his lord, |
| 2. [ <sup>m</sup> ] <i>šarru-kīn</i>                               | 'Sargon',             |
| 3. [ <i>šar kiššati</i> ]  | [King of Totality],   |
| 4. [ <i>iqēš</i> ]   | [presented (this)].   |

PT4 1170 (not illustrated; same shape as Pl. 44:38). Fragment; chalcedony; top with gray center (chipped off) and white margin; no perforation; diameter, 3 cm.

*Find-spot*.—Treasury, refuse from area of Room 33.

*Inscription*.—One line on bottom; remnant of dedicatory text<sup>86</sup> of Sargon II of Assyria:<sup>87</sup>

[*ša* <sup>m</sup>]*šarru*(20)-*kīn*(GIN) *iqēš*(BA-*eš*) [which] Sargon presented.

PT4 455 (Pl. 25:3). Almost complete; onyx, black and gray (scorched), plain polished top; diametrical groove on bottom containing traces of bitumen; diameter, 3.8 cm., thickness, 7 mm.

*Find-spot*.—Treasury, Room 33, near center, between floor and .50 cm. above it.

*Inscription*.—Five lines on bottom; dedication by Ashurbanipal to the "Sutean" goddess Sutiti:

- |  |                          |
|--|--------------------------|
| 1. [ <i>ana</i> <sup>d</sup> ] <i>su-ti-ti</i>   | To (the goddess) Sutiti, |
| 2. [ <i>bēli</i> ] <i>ti</i> (GAŠAN)- <i>šú</i> <sup>m</sup> <i>aššur</i> (HI)- <i>bān</i> (DÙ)- <i>apli</i> (A) | his lady, Ashurbanipal,  |

86. In the reading of this text Cameron was aided by Professor F. W. Geers.

87. Two more fragments of eye stones (PT4 1169 and 1172), found in the same area as PT4 1170, show on the bottom remnants of a very similar inscription, also mentioning the name of Sargon.

3. *šar*(20) *māt*(KUR) *aš-šur*

4. *ana* [*balā*]*ti*(DIN)-*šú*

5. *iqēš*(BA-*eš*)

King of Assyria,

for his life

presented (this).<sup>88</sup>

PT6 250 (Pl. 25:2). Complete; onyx, highly polished top with brown center and white margin.

*Find-spot*.—Treasury, Hall 41, near center, floor.

*Inscription*.—On peripheral part of brown area on top; dedication by Nebuchadnezzar II to the goddess Sarpanitum, wife of Marduk:

*ana* <sup>d</sup>*šar-pa-ni-tum* *bēli*(GAŠAN)-*šú* <sup>d</sup>*nabū*(PA)-*kudurru*(NÍG.DU)-*ušur*(ŠEŠ) *šar bābili*(E?)<sup>k1</sup> *ana balāti*(DIN)-*šú* *iqēš*(BA)

To (the goddess) Sarpanitum, his lady, Nebuchadnezzar, King of Babylon, for his life presented (this).<sup>89</sup>

PT6 238 (Pl. 25:4). Fragment; chalcedony, highly polished top with gray center and white margin.

*Find-spot*.—Treasury, Hall 41, Plot HF 77.

*Inscription*.—Fragmentary, on slightly beveled side; indeterminate (Assyrian?) text:<sup>90</sup>

[*ana*]-*ku* <sup>m</sup>*sin-ú*(?)-. . .

I, Sin-u. . .

PT6 233 (Pl. 25:5). Fragment; turquoise, bluish green; oval with highly polished convex top, beveled side; groove in base.

*Find-spot*.—Treasury, Room 53, E. end, refuse.

*Inscription*.—Parts of three lines on beveled side and bottom; rather carelessly written text, probably of Sargon (cf. PT4 495):

- |  |                                       |
|--|---------------------------------------|
| 1. [ <i>ana</i> <sup>d</sup> ] <i>šamaš</i> (UD) <i>bēli</i> (EN)- <i>šú</i> | [To Sh]amash, his lord,               |
| 2. [ <sup>m</sup> ] <i>šarru</i> (LUGAL)- <i>kīn</i> (GIN)                   | [Sa]rgon,                             |
| 3. [ <i>šar</i> ](LUGAL) <i>kiššati</i> (ŠAR) <i>iqēš</i> (BA)               | [Kin]g of Totality, presented (this). |

#### INSCRIBED TABLET

PT5 264 (Pl. 25:6). Rectangular fragment, possibly of votive object; lapis lazuli, dark blue (slightly scorched), polished; pierced near upper edge.

*Find-spot*.—Treasury, Hall 38, floor, Plot HG 10, S. center.

*Inscription*.—Partly inclosed by angle of border; ends of two lines of (probably) Neo-Babylonian script:

- |   |                                   |
|---|-----------------------------------|
| 1. [ <i>ana</i> <sup>d</sup> ] <i>šar-pa-ni-tum</i> | [To (the goddess) Sarpani]tum(?), |
| 2. [ <i>bēli</i> ] <i>ti</i> (GAŠAN)- <i>šú</i>     | [his lady],                       |
| 3. . . .  | . . . .                           |

#### INSCRIBED CYLINDERS

PT4 99 and 328 (Pl. 25:9). Fragments; lapis lazuli, bluish gray, polished; perforated lengthwise.

*Find-spots*.—Treasury: smaller piece (PT4 328) occurred with group of Elamite tablets at center of W. wall of Room 33, .50 above floor; larger fragment (PT4 99) found in E. part of neighboring Portico 19.

88. Originally identical with text on cylinder PT4 1180 (p. 59).

89. Cameron comments that either the copy made by the expedition draftsman is incorrect in minor points or the original text was rather carelessly written.

Another fragmentary eye stone (PT4 1168; found in refuse from the area of Room 33) mentions "Nebuchadnezzar, King of Babylon" in the remnants of the inscription which encircled the dark central area on the top of the stone.

90. Two additional indeterminate remnants of inscriptions occur on the bottoms of two fragments of sardonyx eye stones. One specimen (PT4 925) was found on the floor of Room 33 in the Treasury, the other (PT4 1171) in refuse from the same area.



*Inscription.*—Two lines; Neo-Babylonian:<sup>91</sup>

1. *ana* <sup>d</sup>nabū(PA) *bēli*(U)-šú <sup>md</sup>nabū(PA)-*unammir*(ZALAG-ir)
2. *mār*(A) <sup>mir</sup>-an-ni *ana balāti*(DIN) [*napiš*](TI)(ZI)-šú *iqēš*(BA-eš)

1. To Nabu, his lord, Nabu-unammir,
2. son of Iranni, presented (this) for the life [of his] soul.<sup>92</sup>

PT4 861 (Pl. 26:1). Fragment; lapis lazuli, bluish gray; perforated lengthwise.

*Find-spot.*—Treasury, Room 33, floor, Plot HG 41.

*Inscription.*—Four lines; Neo-Babylonian:

1. *ana* <sup>d</sup>nabū(PA) *bēli*(U)-šú *ana balāti* To Nabu, his lord, [for the  
... ] life of ... ]
2. *u* <sup>md</sup>nabū(PA)-GAL-... and of Nabu-... ]
3. *epuš*(DÙ)-*ma* [*iqēš*] did make and [present (this)]
4. <sup>md</sup>šamaš(UD)-šum(MU)-*ušur*(ŠEŠ) . . . Shamash-shum-usur . . . ]

*Pattern.*—Head of the god Marduk (see pp. 57 and 62 f.) in relief beside transversely oriented inscription: tall hat in form of expanding cylinder with three horizontal rows of circles crowned by alternating columns of squares and chevrons; design of quadruped<sup>92a</sup> (and anterior part of second animal?) marked on cloth(?) bag which gathers hair into bunch at back; mustache and long (mutilated) beard; three ridges marked on shoulder.

PT4 777 (Pl. 25:7). Fragment; calcareous stone, shades of gray (scorched), polished; perforated lengthwise. Engraved head of god, similar to that of cylinder PT4 861 (see above) though more stylized.

*Find-spot.*—Treasury, Room 33, refuse, Plot HG 41.

*Inscription.*—Parts of five lines of a text apparently written in seven lines; Neo-Babylonian:

1. *a-na* <sup>d</sup>n[abū(PA) *bēli*-šū] To N[abu, his lord,]
2. *a-š[ib ezida . . .]* who dwe[lls in (the temple) Ezida]
- 3-5.
6. *a-na ba-laṭ na[pišti*(ZI) . . . ] for the life of . . . ]
7. *epuš*(DÙ)-*m[a iqēš*] he made and [presented (this)].

PT4 1180 (not illustrated). Fragment; chalcedony, banded white, gray, and pink, polished; perforated lengthwise; length, 1.9 cm., diameter, 1.5 cm.

*Find-spot.*—Treasury, refuse from area of Room 33.

*Inscription.*—Four lines; originally identical with text (in five lines) of eye stone PT4 455 (p. 58), dedicated by Ashurbanipal:

1. *ana* <sup>d</sup>su-[*ti-ti*] To (the goddess) Sutiti,
2. *bēli*(GAŠAN)-šú <sup>md</sup>[*aššur-bān-apli*] his lady, [Ashurbanipal],
3. *šar*(20) *māt*(KUR) *aš-šur* King of Assyria,
4. *ana balāti*(DIN)-šú [*iqēš*(BA-eš)] for his life [presented (this)].

PT5 17 (not illustrated). Fragment; calcareous stone, grayish white; perforated lengthwise; length, 1.3 cm., diameter, 2 cm.

*Find-spot.*—Treasury, Room 40, SE. corner, refuse.

*Inscription.*—Beginnings of three lines; Neo-Babylonian text:

1. *ana* <sup>d</sup>š[*amaš* . . . ] To Sh[amash . . . ]
2. *ana balāti*-[šū . . . N] for his life, [N],
3. *šar* . . . King of [ . . . , presented (this)].

91. There are also remnants of four or five lines of an Aramaic inscription in ink, too indistinct to be read by Bowman, who has examined all Aramaic texts found at the site. The cylinder is now in the Oriental Institute Museum (No. A 23145).

92. Cameron comments that similar texts of Nebuchadnezzar were published by Stephen H. Langdon in *Die neubabylonischen Königsinschriften*, aus dem Englischen übersetzt von Rudolf Zehnpfund ("Vorderasiatische Bibliothek," 4. Stück [Leipzig, 1912]) pp. 202-3 (Nebukadnezar No. 38), but he states further that the script of the Persepolis text is that of the Achaemenid period and that the persons mentioned appear to be unknown elsewhere.

PT4 716 (not illustrated). Fragment; lapis lazuli, blue and black (scorched, crackled by heat); remnants of patinated bronze tube in lengthwise perforation; length, 5.2 cm., diameter, 2.6 cm.

*Find-spot.*—Treasury, Room 33, E. part.

*Inscription.*—Beginnings of four lines; Neo-Babylonian:

1. *ana* <sup>d</sup>ištar a-ni- . . . To Ishtar . . .
2. *bēli* šá [ . . . N] the lady of [ . . . , N]
3. *a-na*(?) *balāti*-šú<sup>1</sup> for his life
4. *epuš*(DÙ)-*ma* [*iqēš*] made and [presented (this)].

PT4 942 (Pl. 25:10). Fragment; lapis lazuli, bluish gray (scorched), polished; lengthwise perforation.

*Find-spot.*—Treasury, Room 33, NE. corner, floor.

*Inscription.*—Eleven lines; Neo-Babylonian:

1. . . . MEŠ-šú *u* <sup>1</sup>x-x-šú<sup>1</sup> *ištu*(TA) *bīt* <sup>d</sup>ištar(?) *ú-na-kir*(?)<sup>1</sup> . . .
2. . . . *šalmi*(ALAM) šá <sup>d</sup>ištar *ušnēl*(NÁ)-*ma* <sup>d</sup>bēlu . . .
3. . . . *ina māt su-ḫi izkur*(MU) *ḫaṭṭu*(GIŠ.NIG.PA) *šuātu*(ḪAR-tú) *ina URU ḫa-zi-ḫi* . . .
4. . . .-šú *ḫaṭṭu*(GIŠ.NIG.PA) *šuātu*(ḪAR-tú) GIŠ.ŠU.<sup>1</sup>MEŠ(?)<sup>1</sup>-*su* *u dannat*(KI.KAL)-*su ra-ma-a* . . .
5. . . .<sup>1</sup>x-x-x<sup>1</sup> <sup>1</sup>ia-x-su <sup>1</sup>šarru(20)-šākin(NIG)-*tēmi*(KU) *u* <sup>1</sup>ab-di-ili . . .
6. [. . . *ip-l*]-*a-ḫu-ma mārāte*(DUMU.MUNUS.MEŠ)-šú-nu *ù man-da-at-tú iddinu*(SÌ.MEŠ) . . .
7. [. . . *si-i*]-*m-mu rabū*(GAL) DIR *man-nu ar-ku-ú šá ḫaṭṭu*(GIŠ.NIG.PA[!]) *šuātu*(ḪAR-tú) *ina muḫ[ḫi* . . . ]
8. [. . . *inaš*](ŠU)(IL)-*ma ana šarri*(LUGAL) *danni*(KALAG.GA) *inaddinu*(SÌ-nu) TI.SI *liz-ku-ur šum*(MU) . . . ]
9. [. . . šá *šumi*] <sup>1</sup>ú-*pa-aš-ši-tu-ma šum*(MU)-šú *išattaru*(SAR) <sup>d</sup>šamaš . . .
10. [. . . *iz-zi-iš*] *lik-kil-mu-šú-ma išid-su lissuḫu*(ZI-ḫu) *zēr-šú* . . .
11. [. . . *za-kir*] *šumi*(MU)-šú *u nāq-mē*(MEŠ)-šú *ina māt su-ḫi liḫalliḫ*(U)(ḪA.A.MEŠ) . . . ]

1. . . . its . . . and its x from the temple of Ishtar(?) I removed [and] . . .
2. . . . placed (before) the statue of Ishtar, and the lady . . .
3. . . . named (a town) in the land Suhi. That scepter in the town Hazi . . .
4. . . . [I found(?)]. (As for) that scepter, its x and its base were loose . . .
5. . . . Iahusu(?), Sharru-shakin-temi, and Abdi-ili . . .
6. . . . [took] fright and gave their daughters and tribute [to me] . . .
7. . . . they were afflicted with a grievous disease. Whoever hereafter that scepter o[n . . .
8. . . . carries and gives to the mighty king, may he call his name . . .
9. . . . [but whoever] erases (my name) and writes his name (thereon), may Shamash, . . .
10. . . . [angrily] look on him and tear out his roots, [pluck] his seed, . . .
11. . . . [and] make to disappear from the land Suhi [a son who calls] upon his name and (who) pours libations for him.

Commentary by Cameron: This text bristles with difficulties; not only has the engraver carelessly fashioned certain signs, but on different occasions has written quite differently one and the same sign. The jagged break on the right-hand side of the object means that the concluding signs of each line are missing. Also, it appears that not all of the object is preserved on the left; apparently it was cut through in ancient times—with the consequent loss of signs at this end as well. B. Landsberger thinks that the preserved portion of the text is but part of the second column of the complete inscription; if that is so, the name of the author of the inscription will have appeared in Column I. There is still some doubt as to the initial line of the preserved inscription, although it would seem that the reading must begin with the line here numbered 1.

Line 3 suggests that the object was a part of a "staff" or "scepter" which was found in the town Hazi. . . of the land Suhi. Subsequently,

92a. One is tempted to see in this figure the "dragon of Babylon," the *mušḫuš*, which on the Marduk *kunukku* of Babylon lies in front of the god; see Koldewey, *Das wieder erstehende Babylon* (4th ed.) p. 216 and Fig. 135 (see also our n. 112).

we learn that the object was not intact—perhaps it had been damaged by the three or more individuals named in lines 5–7 who became frightened, surrendered their daughters and tribute, and were attacked by a serious illness. Lines 7–11 prescribe various blessings and curses which the gods will inflict upon any later individual who preserves or damages the object and its inscription.<sup>93</sup>

Alone, this object and its text are of little importance. The frequent reference to the “land Suhi” implies that the object originally formed a part of a dedication by some Babylonian chieftain in some town along the middle Euphrates. Since the script is indeterminate, the object could be assigned to the first half of the 1st millennium B.C.—and little more could be said.

It is not impossible, however, that this is another text of that Shamash-resh-usur, governor of Suhi and Mari, whose inscribed relief was found at Babylon.<sup>94</sup> If that is so, the cylinder was dedicated to Ishtar sometime between 629 and 616 or 613 B.C.<sup>95</sup> and carried to Babylon by Nabopolassar.

PT4 943 (Pl. 26:3). Fragment; lapis lazuli, bluish gray; lengthwise perforation; length, 3.8 cm., diameter, 2.7 cm.

*Find-spot.*—Treasury, Room 33, NE. corner, floor.

*Inscription.*—Indeterminate remnants of (probably) a prayer to the god Marduk, written in at least two columns in Neo-Babylonian script.<sup>96</sup>

*Pattern.*—Above the inscription but oriented transversely is engraved the figure of a god.<sup>97</sup> His feet and the body above the waist are missing. Only the elaborately ornamented skirt is preserved. The body contours indicate that the god faces right; but the purpose of three oblique lines extending from the hip upward and backward is unknown. The posterior portion of the god’s skirt shows a row of five superimposed rosettes and stars. The uppermost unit, an eight-petaled rosette, is inclosed by a segmented rectangular frame. An identical rosette is used as the lowermost symbol, but its border, also segmented, is circular. The second and fourth units are eight-pointed stars inclosed in plain circles, and the central symbol is an encircled five-pointed star.

A partitioned strip separates this row of rosettes and stars from the anterior ornamentation of the god’s skirt. Here, below two star symbols—one being a small six-pointed star encircled by two lines—is the most interesting part of the decoration, namely, three superimposed hawks facing in the same direction as the god. The birds appear to rest on their fanned-out tail feathers. Only one wing, spreading backward, is shown in each case. On the god’s statue, which our design presumably copies, another row of hawk symbols may have been on the opposite side of the gown. The legs of the birds are not clearly marked. A faint bifurcate line in front of the central hawk suggests—perhaps wrongly—that one claw is raised in defense or attack.

As to the identification of the god here pictured<sup>98</sup> we know of only two representations of deities which resemble our fragment. They are the images of Adad and Marduk—

93. I wish to acknowledge here the help of Professors F. W. Geers, I. J. Gelb, Thorkild Jacobsen, B. Landsberger, and Leo Oppenheim in the reading of the text.

94. Koldewey, *Das wieder erstehende Babylon* (4th ed.) pp. 159–62 and Fig. 102; text in Weissbach, *Babylonische Miscellen*, pp. 9–15, frontispiece, and Pls. 2–5.

95. This date results from the data given in the “Fall of Nineveh” inscription (conveniently in Daniel David Luckenbill, *Ancient Records of Assyria and Babylonia* II [Chicago, 1927] §§ 1167 and 1175) in connection with Nabopolassar’s conquest of the land of Suhi.

96. Sumerian logograms predominate in the left column.

97. The god’s image is oriented along the long axis of the cylinder.

98. And of the presumably identical god on cylinder PT4 772 (pp. 61–63).

also engraved on votive cylinders of lapis lazuli—found by Koldewey in the ruins of Babylon.<sup>99</sup> We shall refer to this problem again in the description of cylinder PT4 772 (p. 62). All rosettes and star patterns on the god’s dress are undoubtedly divine symbols, but we hesitate to attribute them to specific deities. For instance, Ishtar’s eight-pointed star, when encircled, is identical with the eight-pointed star symbols of our specimen.<sup>100</sup> Furthermore, it has been shown that rosettes and stars may have the same symbolic meaning.<sup>101</sup> Thus our eight-pointed rosettes might also qualify as Ishtar symbols. In theory, even the stars with five and six points<sup>102</sup> appearing on the god’s garment could be attributed to the same goddess.

With regard to the hawks or falcons adorning the gown of the god on our cylinder fragment and—more impressively—that of apparently the same god on cylinder PT4 772 (pp. 61–63), we have searched in vain for similar pictorial representations of hawks or other predatory birds on the gowns of Babylonian or Assyrian deities or of humans.<sup>103</sup> It is doubtful whether the rows of divine symbols shown on *kudurru*’s include the hawk or falcon,<sup>104</sup> which, furthermore, does not play a prominent role in Mesopotamian seal patterns of religious significance. We may add, parenthetically, that a beautifully wrought hawk’s head—the grip of a gray marble lamp (or bowl?)—was found in the debris of the despoiled royal tombs at Assur.<sup>105</sup>

Professor Helene J. Kantor has kindly directed our attention to the following representations of birds similar to those shown on the god’s gown of our cylinders but decorating vessels and pictures of vessels on stone reliefs. There is a lion-headed eagle with recurved wings on a libation vessel of dark green steatite attributed to the time of Gudea.<sup>106</sup> A small alabaster vessel from Assur shows two birds with recurved and overlapping wings.<sup>107</sup> On a relief from Khorsabad<sup>108</sup> a four-winged genie carries in his left hand a pail (similar to the incense pails shown on Persepolis reliefs<sup>109</sup>), which is adorned with two antithetic birds closely resembling the hawks shown on our votive cylinders. On the Khorsabad relief, however, the birds’ heads are reversed, whereas the wings and the claws extend forward and partly encircle the vessel. Very similar birds appear on a relief from the palace of Assurnasirpal II (883–859 B.C.) at Calah (Nimrud).<sup>110</sup> The birds again embellish

99. Koldewey, *Das wieder erstehende Babylon* (4th ed.) Figs. 134–35; see also p. 57 above.

100. Cf. E. Douglas Van Buren, *Symbols of the Gods in Mesopotamian Art* (“Analecta orientalia” XXIII [Rome, 1945]) p. 190, Fig. E 5b.

101. *Ibid.* p. 84.

102. For examples listed see Franz X. Steinmetzer, *Die babylonischen Kudurru (Grenzsteine) als Urkundenform* (“Studien zur Geschichte und Kultur des Altertums” XI, Hefte 4–5 [Paderborn, 1922]) p. 181.

103. For Egyptianized falcons pictured independently in seal patterns see *OIP* XXII 103.

104. Steinmetzer, *op. cit.* p. 140, associates with the god Papsukal a bird which he identifies as a hawk; however, see Van Buren, *op. cit.* p. 30.

105. Andrae, *Das wiedererstandene Assur*, p. 139 and Pl. 65 b–c; but cf. Arndt Haller, *Die Gräber und Gräfte von Assur (WVDOG LXV [Berlin, 1954])* “Gruft I,” pp. 172 f. Cf. also a fine hawk head of polychrome glass paste attributed to the Achaemenian period in Pope, *Survey* IV, Pl. 76.

106. Ernest de Sarzec, *Découvertes en Chaldée* (Paris, 1884–1912) I 381–82 and II, Pl. 44 bis, No. 4.

107. Andrae, *Die jüngeren Ishtar-Tempel in Assur (WVDOG LVIII [1935])* p. 101 and Pl. 43 a.

108. Paul Émile Botta and Eugène Flandin, *Monument de Ninive I* (Paris, 1849) Pl. 28.

109. See our Vol. I, e.g. Pl. 121.

110. E. A. Wallis Budge, *Assyrian Sculptures in the British Museum* (London, 1914) Pl. XXX.

opposite sides of a pail carried by a genie. The pail handle is attached to their necks. Their heads in this case face forward and their wings are recurved in the same fashion as those of the hawks on our votive cylinders.

PT4 904 (Pl. 25:8). Fragment; siliceous(?) stone, gray and pink, polished; lengthwise perforation; length, 1.5 cm., diameter, 1.4 cm.

*Find-spot*.—Treasury, Room 33, at center of N. wall, floor.

*Inscription*.—Ends of five lines of an Assyrian text of Esarhaddon which, following a suggestion of B. Landsberger, may be restored as follows:

- |   |                                    |
|---|------------------------------------|
| 1. [ana <sup>4</sup> taš-me]-tum                    | [To (the goddess) Tashme]-<br>tum, |
| 2. [bēli-šú <sup>md</sup> aššur]-aḫ(PAP)-iddina(AŠ) | [his lady, Esar]haddon,            |
| 3. [šar māṭ aššur ana] balāṭi(TI)-šú                | [King of Assyria, for] his life    |
| 4. [u balāṭi mār]ē(DUMU.MEŠ)-šú                     | [and the life of] his sons         |
| 5. [epuš-ma] iqēš(BA)                               | [made and] presented (this).       |

PT4 772 (Pl. 26:2). Fragment; chalcedony, grayish brown, polished; length, 3 cm., diameter, 4.9 cm.

*Find-spot*.—Treasury, Room 33, Plot HG 41.

*Inscription*.—Parts of four lines remain to right of figure; indeterminate, Neo-Babylonian script. Parts of two lines remain to left of figure; indeterminate.

*Pattern*.—A statue, undoubtedly meant to be the image of a god, stands on a terraced base. To the right is the larger fragment of the inscription. The traces of the inscription to the left are above the remnant of a worshiper (or priest?), of whom part of one side is preserved. A short sleeve covers the arm to the elbow, and a mark on the wrist may indicate a bracelet. The worshiper's skirt is pleated at the extant side and fringed at the lower edge. The god's statue, its base, and the worshiper are wrought in low relief.

The god's upper body is missing, except perhaps for part of his arm, which may be marked by a bulge at the upper right fracture. Otherwise, there remains only the elaborately embellished skirt, which completely covers the legs and feet. The direction faced by the god is mainly indicated by the obviously frontal part of the decoration of the gown, namely a row of superposed hawks similar to those in the design of cylinder PT4 943 (pp. 60 f.). The orientation of the worshiper is doubtful. One should expect him to face the god. However, we have noticed that in seal designs where one arm of a worshiper is lowered it is extended behind the body.<sup>111</sup>

The hawks on the god's gown are modeled more beautifully on the cylinder under consideration than on PT4 943. The visible wings, spreading backward and slightly upward, are engraved in the god's garment, whereas the projecting heads, bodies, and tail feathers are raised in faint relief in front of the more pronounced relief of the skirt. The rest of the garment decoration consists mainly of vertical panels. The foremost strip is filled with seven crosses. Next follows a file of five identical quadrupeds<sup>112</sup> walking toward the top. The broad central panel is filled with three large superposed star patterns and six small

111. Cf., e.g., Frankfort, *Cylinder Seals*, Pls. XXVII f, i, j, m; XXVIII b, h, i; XXIX b, f, h, m. On one seal (*ibid.* Pl. XXIV c) men on the march are shown with one arm in front.

112. Too indistinct for identification. The slender, long-bodied beasts may represent the *mušhuš* of Babylon (cf. Koldewey, *Das wieder erstehende Babylon* [4th ed.] Figs. 31-32, also Fig. 135); but there is no suggestion of the horn or horns, or of the raised undulating tail, of the dragon. See also n. 92a above.

wheel-shaped units with eight spokes (as far as recognizable). The upper and the lower of the large encircled stars may be identical. Apparently they have five "points" of spatulate shape, radiating from a central pentagonal figure.<sup>113</sup> The central unit has eight circular dots, instead of rays, between two concentric circles. The right halves of the large star units are covered by a fold of the gown (or an additional garment?) marked with a narrow vertical panel and with some horizontal lines at the top and bottom. A part of the central star is visible beneath the fold, giving the vertical panel an appearance of transparency. There are, finally, two encircled eight-pointed and partly overlapping stars at the upper anterior part of the skirt.

The god's statue stands on a two-stepped pedestal. The base and the surbase of the upper step are marked with undulating lines. The dado shows seven niches, five of which are twice recessed; but two niches, namely, the second from either end, have a circular depression instead of the inner rectangular recess. The basal part and the right end of the lower step are missing; but there can hardly be a doubt that the two ends of the surbase projecting beyond the shorter superposed step had equal length. The level of the preserved lower edge of the worshiper's gown indicates that the bottom level of the pedestal is only a short distance below, for we assume that worshiper and pedestal stand on the same level. The surbase of the lower step is blank. Its dado is similar to that of the upper terrace, but instead of seven niches there are only five large ones, without any suggestions of circular recesses.

As far as we know, archeological literature describes no representation of a Babylonian or Assyrian deity (or of a deity of the neighboring regions) standing on a terraced base which suggests, as in our case, a two-storied structure; and we know of no divine statue of this area standing on a pedestal in the form of a multi-storied tower. The nearest parallel to the two-storied basis of the god on our cylinder is pictured on a votive cylinder of lapis lazuli, now in the Louvre.<sup>114</sup> It shows a god, identified as Adad, on a two-stepped pedestal. The lower step is subdivided into seven panels by paired lines, and three horizontal rows of small units suggesting bricks but probably indicating mountains subdivide the upper step. In seal patterns where a pedestal raises a deity above the environs, the base, simple or stepped, has the appearance of a dais.<sup>115</sup>

We doubt whether the two-storied structure of our specimen was meant to represent a ziggurat, although its form suggests the two lower steps of such a temple tower. When attempting to find ancient illustrations of ziggurats one is struck by the relatively infrequent and usually crude representations of the undoubtedly most prominent structure of many towns of Babylonia, Assyria, and also Elam.

113. These stars, as well as the central five-pointed unit on the god's dress of cylinder PT4 943 (cf. p. 60 above), closely resemble the central star of Marduk's skirt (and that on his wrist) on one of the Babylon cylinders (cf. Koldewey, *op. cit.* Fig. 135).

114. See Delaporte, *Catalogue des cylindres, cachets et pierres gravées de style oriental II* (Paris, 1923) No. A.830 (p. 180 and Pl. 93:16). Votive beads and eye stones of the nature of specimens in our collection are illustrated *ibid.* Pl. 93.

115. See e.g. Frankfort, *Cylinder Seals*, Pl. XXXIII b, f, k. A seal of the 1st Babylonian dynasty (*ibid.* Pl. XXVIII a and p. 158; cf. also Pl. XXVIII d) shows a priest on a two-stepped base reminding one somewhat of the god's pedestal of our cylinder. A similar pedestal supporting an attendant (or priest?) appears on a Babylonian seal published by H. H. von der Osten, *Ancient Oriental Seals in the Collection of Mrs. Agnes Baldwin Brett* (OIP XXXVII [1936]) No. 54 (p. 9 and Pl. VI).

It seems that the only more or less detailed, large-scale picture of a ziggurat—a pyramidal four-storied tower—is shown on a relief from Nineveh.<sup>116</sup> The uppermost story, presumably the shrine, is decorated with two pairs of horns.<sup>117</sup> The second and third stories each have one entrance indicated in the center. The lowermost story, ornamented with eight rectangular recesses, has a door in the second niche from either end. We do not know whether there is some relation between the location of these doors and of the circular depressions in two niches of the Persepolis specimen (see above). The use of recesses in the decoration of ziggurat walls has been verified at Assur<sup>118</sup> and elsewhere. It is interesting to note that Andrae, the renowned excavator of this site, tentatively reconstructs its temple towers as massive two-stepped pyramids bearing a third step of lesser dimensions, namely the assumed sanctuary of the god, on the summit.<sup>119</sup>

A three-stepped ziggurat in a seal pattern of the 1st Babylonian dynasty has a crooked staff, the symbol of the god Amurru, at either side of the topmost step or shrine.<sup>120</sup> The pattern of the pyramid suggests ornamentation by means of recesses. An irregular three-stepped temple tower with plain surfaces except for four curious semi-circles on the tops of the two upper steps is sculptured on an interesting bronze plate from Susa.<sup>121</sup>

A tower of four steps is pictured on a *kudurru*<sup>122</sup> of the Kassite period. On this example vertical lines on the second and third steps suggest recesses or the like, and the outline of the summit shrine is doubled. A slender slightly terraced structure of four fluted steps shown on an Assyrian seal has also been interpreted as a temple tower.<sup>123</sup>

The erection of a five-storied ziggurat apparently is pictured on an Early Dynastic cylinder seal.<sup>124</sup> Another five-stepped structure, presumably a temple tower, is shown on a seal attributed to the time of Tukulti-Ninurta I (13th century B.C.).<sup>125</sup> The designs of the two last-mentioned examples again suggest that the vertical surfaces of the structures had recessed ornamentation. A plain five-

stepped pyramid, also considered a ziggurat, is pictured on the chest of the god Adad, represented on a votive cylinder of Esarhaddon which was found at Babylon (see p. 57).<sup>126</sup>

The great temple tower (Etemenanki) of Babylon had seven stages,<sup>127</sup> including the shrine on its summit. According to the tentative reconstructions, the two lower terraces were ornamented with simple rectangular recesses. Additional examples of ziggurats, their shapes, and types of ascent (stairs and ramps), also assumed replicas of ziggurats on obelisks, are given by Unger in his article in *Reallexikon der Vorgeschichte*.<sup>128</sup> Finally, some publications dealing with seals list as ziggurats a number of stepped platforms often minute and vaguely drawn, which serve as bases for divine symbols and the like.

Comparison of ancient illustrations and modern reconstructions of temple towers with the pedestal of the divine statue shown on our votive cylinder justifies our hesitation to identify this pedestal as a ziggurat. Nevertheless, it may be a miniature copy of a two-stepped sacred structure. In addition to the Louvre cylinder referred to above (p. 61), the closest parallels are found on certain seals of the Neo-Babylonian period. They show divine symbols on pedestals which are considered altars by Ménant<sup>129</sup> and divine seats by Ward.<sup>130</sup> Frankfort mentions that these objects "often seem miniature renderings of temples" and may represent the bases on which the divine emblems were kept in the sanctuary.<sup>131</sup> Many of these supports quite strikingly resemble either the upper or the lower step of the pedestal on the Persepolis cylinder; but no seal pattern of this group shows a two-stepped base of this kind, and no base bears a standing anthropomorphous deity.

We have mentioned above that in our opinion the deity shown on cylinder PT4 943 and that on the cylinder under consideration are the same. The gowns of both gods are elaborately ornamented with star patterns of similar and even identical forms, and both show extraordinary hawk decoration which as far as we know is not found on the garment of any other extant image of a Mesopotamian deity (see p. 60). We have pointed out (p. 60) that the deity pictured on the two Persepolis cylinders resembles Adad and Marduk on the two Babylon specimens. Marduk's more elaborate gown is closer in pattern. Further, the animals decorating the god's skirt on cylinder PT4 772 (see p. 61) seem to be identical with the quadruped embellishing (embroidered presumably) the cloth(?) bag<sup>132</sup> which gathers the bunched hair of a god's head identified as that of Marduk (cylinder PT4 861; Pl. 26:1 and p. 59). Finally, the wavy lines marked on the upper step of the pedestal on cylinder PT4 772 may be related to the water

116. First published in the second *Report of the Assyrian Excavation Fund* (privately printed, 1855; reprinted as Appendix of C. J. Gadd, *The Stones of Assyria* [London, 1936]) Fig. 5; see also George Rawlinson, *The Five Great Monarchies of the Ancient Eastern World* (2d ed.) I 314; most complete illustration in Gadd, *The Stones of Assyria*, Pl. 28. See also Theodor Dombart, "Das Zikkuratrelief aus Kujundschiik," *ZA XXXVIII = n.F. IV* (1929) 39-64 (but Dombart's identification of the city pictured in the scene as Susa is wrong, according to Gadd, *op. cit.* p. 207). There are numerous other articles by Dombart dealing with the subject of temple towers; see, further, Heinrich J. Lenzen, *Die Entwicklung der Zikkurat von ihren Anfängen bis zur Zeit der III. Dynastie von Ur* ("Ausgrabungen der deutschen Forschungsgemeinschaft in Uruk-Warka" IV [Leipzig, 1941]) bibliography in footnotes on pp. 1-5; André Parrot, *Ziggurats et Tour de Babel* (Paris, 1949).

117. For interpretation see Andrae, *Das Gotteshaus und die Urformen des Bauens im alten Orient*, pp. 43 and 59.

118. See Andrae, *Das wiedererstandene Assur*, Pls. 47 and 68.

119. *Ibid.* Figs. 15, 16, 24. Andrae does not claim to have proof for this type of ziggurat.

120. Léon Legrain, *The Culture of the Babylonians from Their Seals in the Collections of the Museum* (University of Pennsylvania, The University Museum, "Publications of the Babylonian Section" XIV [Philadelphia, 1925]) No. 346 (p. 247 and Pl. XXI); see also Frankfort, *Cylinder Seals*, p. 165.

121. See J.-E. Gautier, "Le 'sit šamši' de Šilḫak in Šušinak," *MDP XII* (1911) 143-51, Figs. 200 and 202.

122. L. W. King, *Babylonian Boundary-Stones and Memorial-Tablets in the British Museum* (London, 1912) pp. 24 ff. (esp. p. 25, n. 1) and Pl. XLI.

123. Otto Weber, *Altorientalische Siegelbilder* ("Der alte Orient" XVII-XVIII [Leipzig, 1920]) p. 118 and Fig. 472; better illustration in Unger, *Assyrische und babylonische Kunst* (Breslau, 1927) p. 22 and Fig. 27.

124. Frankfort, *Cylinder Seals*, Pl. XIV k and p. 76.

125. Unger, *Assyrische und babylonische Kunst*, p. 22 and Fig. 26.

126. Koldewey, *Das wieder erstehende Babylon* (4th ed.) Fig. 134; see also Unger, "Tempelturm" in *Reallexikon der Vorgeschichte* XIII (Berlin, 1929) 254-55.

127. Unger (*Assyrische und babylonische Kunst*, p. 92) reconstructs the tower in accordance with a cuneiform record of 229 B.C.; for his explanation of the 8th step of Herodotus' description (i. 181) see *Reallexikon der Vorgeschichte* XIII 255. The final version of Koldewey's reconstruction appears in the 4th edition of *Das wieder erstehende Babylon* (Leipzig, 1925) Figs. 119 and 121 b.

128. See also Dombart's comprehensive study, *Der Sakralturm* (München, 1920).

129. *Les pierres gravées de la Haute-Asie* II 132 ff.

130. *Seal Cylinders of Western Asia*, pp. 193 ff.

131. *Cylinder Seals*, p. 218.

132. Cf. Koldewey, *Das wieder erstehende Babylon* (4th ed.) p. 230.

pattern of Marduk's plinth on the Babylonian specimen.<sup>133</sup>

Concluding our discussion of cylinder PT4 772: There is no doubt that the elaborately robed figure represents the statue of an important god raised on a two-stepped pedestal above the level of the worshiper. The ornamentation of the pedestal façade suggests a miniature copy of a sacred structure, perhaps—although there is no precedent—the lower steps of a ziggurat. The unusual design of hawks on the god's garments of cylinders PT4 772 and PT4 943 indicates that in both cases the same deity is represented. The rest of the pattern is closely related to that of the Marduk statue shown on the cylinder from Babylon, a fact which convinces us that our cylinders too picture a Babylonian deity. However, the identity of this god will remain conjectural until it is established by the inscription of some other object showing his image and the hawk as his symbol or one of his symbols.

PT4 448 (not illustrated).<sup>134</sup> Fragment of rod with (originally) octagonal cross section; lapis lazuli, bluish gray, polished; lengthwise perforation; length, 4.2 cm., breadth, 3.1 cm.

*Find-spot.*—Treasury, Room 33, near center.

*Inscription.*—Remnants of two lines; Neo-Babylonian text reading probably as follows:

- |  |                                  |
|--|----------------------------------|
| 1. [ana . . . bēl]ti(!)-šú <sup>md</sup> . . . | [To . . . ,] his la[dy, N]       |
| 2. [. . . iqēš]                                | [for his life presented (this)]. |

#### CYLINDERS WITHOUT INSCRIPTIONS

##### A SCULPTURED CYLINDER

The form of the object to be described, together with the religious character of its design, leaves no doubt that it belongs to our class of votive cylinders.

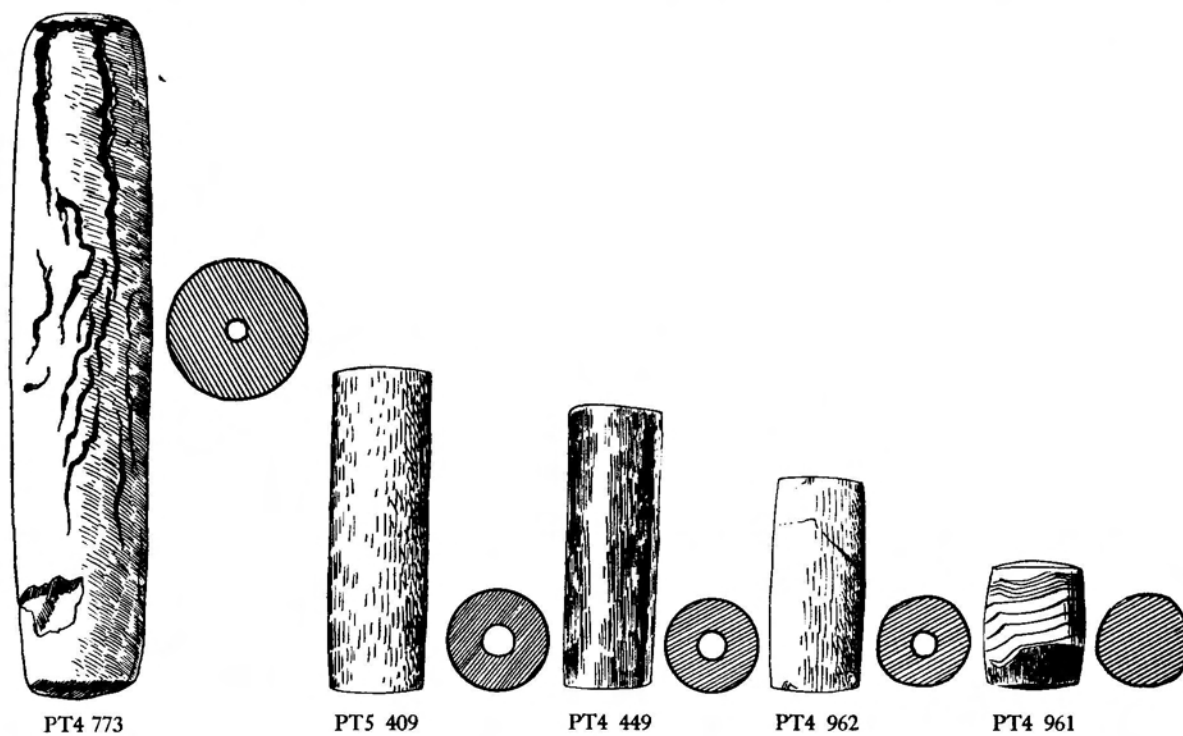


FIG. 8. PLAIN VOTIVE(?) CYLINDERS. SCALE, 1:2

133. See *ibid.* p. 216, Fig. 135; Ward, *Seal Cylinders of Western Asia*, Fig. 1274 and p. 370. But similar water patterns occur on pedestals supporting the symbols of other deities; see e.g. Ward, *op. cit.* Figs. 550, 554, 556.

134. Two additional small fragments of cylinders (PT4 663 and PT4 895) have remnants of indeterminate cuneiform inscriptions. Both occurred in Room 33 of the Treasury.

135. Or altar table? Cf. Ward, *op. cit.* p. 366 and Fig. 1257.

136. Cf. Unger, *Babylon: Die heilige Stadt nach der Beschreibung der Babylonier* (Berlin and Leipzig, 1931) Fig. 47, for position of arms and squared headdress of figures supporting the throne of Ea, an impression of which was found in the asphalt floor of Marduk's temple at Babylon.

PT4 709 (Pl. 26:4 and Fig. 7). Fragment; calcareous stone, gray shades.

*Find-spot.*—Treasury, Room 33, near center of W. wall.

*Pattern.*—Throne chair<sup>135</sup> with bovine legs; seat supported by three female figures, each dressed in long belted gown and wearing tall squared headdress, hair falling on shoulders and back, arms crossed on chest.<sup>136</sup> The two figures on the right face toward the right side, the third figure faces left. "Flowing water" undulates from the shoul-

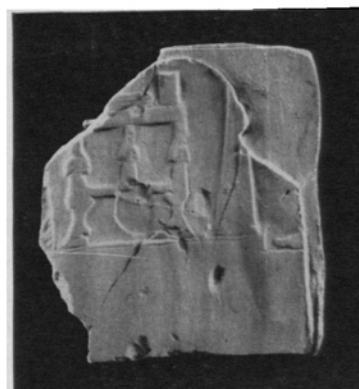


FIG. 7. VOTIVE CYLINDER (PT4 709). PLASTER CAST OF IMPRESSION (SEE PL. 26:4). ACTUAL SIZE

ders of the figures to two jars standing on the rung of the chair.<sup>137</sup> On top of the seat a lateral block appears to be an armrest flanking a pillow(?).<sup>138</sup> There is a remnant of a tall conoid object (see Fig. 7) to the right of the throne (or altar). A lateral projection at the upper fracture of the cone suggests that it might be a symbol sometimes found on early glyptique and interpreted by Andrae as originally a reed bundle.<sup>139</sup> The conoid object and the throne or

137. Frankfort (*Cylinder Seals*, pp. 218–19) emphasizes the revival of ancient motifs, such as various water designs, in Neo-Babylonian glyptique (e.g. *ibid.* Fig. 66), to which we may attribute the object under consideration. In reference to seals of the Sargonid age he points out that sometimes a female deity commands the flowing waters (*ibid.* p. 124); see also Unger, *Babylon*, Fig. 41, and Ward, *op. cit.* Figs. 653 and 655.

138. The "pillow" and the "armrest" could represent offerings if the object is an altar table instead of a chair.

139. *Das Gotteshaus und die Urformen des Bauens im alten Orient*, pp. 49 and 55, Pl. II.

altar stand on a dais. On a lower level, at the right fracture of the cylinder fragment, seems to be the anterior part of a human foot.

## PLAIN CYLINDERS

At Babylon (see p. 57) as at Persepolis elaborate and plain cylinders occurred in the same find-areas. As far as ascertainable, cylinders of both categories have similar dimensions, and the same material, namely lapis lazuli, was used frequently for both; however, blue composition (see "Egyptian Blue," pp. 133 ff.)—presumably imitating lapis lazuli (and turquoise?)—also was a favored material for the manufacture of plain cylinders. Furthermore, we have reasons for assuming that cylinders of both groups

were covered (or at least capped) with gold (see p. 57). Consequently, there cannot be much doubt that the plain cylinders had the same purpose as those marked by inscriptions and divine images as votive objects. It is conjectural whether they were combined in necklaces which once adorned the gods' statues or whether they were stored individually. It is quite certain, however, that all cylinders found in the debris of the Persepolis Treasury were spoils from Mesopotamian temples.

The plain cylinders are listed in the following table, and samples are illustrated in Figure 8. All except PT4 961 are perforated lengthwise. The dimensions given in the table are length and diameter respectively.

No.	Find-Spot	Material	Color	Remarks
PT3 192	"Garrison Street," Plot HG 96 Treasury, refuse from Rooms 1 and 8	Composition*	Blue	Fragment, .063(+) × .02
PT3 359		Composition*	Blue	Fragment, slightly barrel-shaped, .055(+) × .027(+)
PT4 19	Treasury, Room 16	Composition*	Greenish blue	Fragment, .064(+) × .029; bronze tube inserted in perforation
PT4 22	Treasury, Room 14, S. end	Composition*	Greenish blue	Fragment, .045(+) × .03
PT4 27	Treasury, Portico 18	Composition*	Greenish blue	Fragment, .058(+) × .029
PT4 37	Treasury, Room 5	Composition*	Blue	Fragment, .035(+) × .023
PT4 59	Treasury, Room 13	Lapis lazuli	Blue and gray	Fragment, .027(+) × .033
PT4 142	"Garrison Street," Plot HG 44	Lapis lazuli	Grayish blue	Fragment, .085(+) × .04
PT4 154	Treasury, Portico 19	Lapis lazuli	Blue and gray	Fragment, .043(+) × .028
PT4 449	Treasury, Room 33	Lapis lazuli	Blue and gray	Complete (see Fig. 8)
PT4 579	Treasury, Room 34	Lapis lazuli	Bluish gray	Fragment, .059(+) × .036; solid bronze rod inserted in perforation
PT4 733	Treasury, Room 33	Lapis lazuli	Grayish blue	Split lengthwise, .083 × .033
PT4 773	Treasury, Room 33	Composition*	Blue and black (scorched)	Complete but fissured, ends tapered (see Fig. 8)
PT4 919	Treasury, Room 33	Stone	Gray (scorched)	Fragment, .037(+) × .026
PT4 961	Treasury, Room 33	Onyx	Banded black and white	Complete, polished, scorched, not perforated (see Fig. 8)
PT4 962	Treasury, Room 33	Lapis lazuli	Blue and gray	Complete (see Fig. 8)
PT5 409	Treasury, Hall 41	Composition*	Blue	Complete (see Fig. 8)
PT6 35	Treasury, Room 44	Lapis lazuli	Blue and brown	Fragment, .063(+) × .032; polished

\* See section on "Egyptian Blue," pp. 133-35.

## AN ELAMITE BRONZE PLAQUE

Plaque PT6 297 (Pls. 27-28) was found covered with charred matter on the floor of subsidiary Room 56 of Hall 41 in the Treasury.<sup>140</sup> The main portion of the tablet is a rectangle 6 mm. thick. From the upper edge project two tabs, pierced by remnants of bronze wire, which terminate on the obverse of the object in pronounced lobes. The plaque had been suspended by means of a wire handle, curved pieces of which were found in the immediate vicinity of the object.

Most of the upper part of the obverse is completely destroyed. The rest is covered with a late Elamite, pre-Achaemenian, inscription which continues on the reverse in forty-five and a fraction lines starting from the bottom. There are five blank lines beyond the end of the inscription, followed by one more line of text, which may have bearing on the seal design below it. Actually, the seal is inverted and oriented in the same manner as the text on the obverse (see Pls. 27 D and 28 B).

The figurative part of the seal is shown four times. It pictures two erect antithetic animals, perhaps lions, which appear to be identical. One foreleg of each animal seems to be raised and the other flexed in front of the chest. The seal includes a rectangular panel—shown three times only—inclosing an inscription of five lines.

After the plaque had been chemically cleaned,<sup>141</sup> Cameron

140. Vol. I 180 and Fig. 80 E.

141. In 1940 the Iranian Ministry of Education loaned the object to the Oriental Institute for study purposes. It has since been returned to the Iranian authorities.

on studied the difficult inscription, which, however, defied his attempts at a continuous translation. He believes that on the obverse (Pl. 28 A) fifty lines of text were written underneath a frieze of seal patterns (or of a seal pattern)—indeterminate but for the probability that they were different from the seal shown on the reverse (see above). Cameron comments:

Lines 35 to 50 of the obverse seem at first glance to be fairly well preserved. One badly damaged line appears on the lower edge. The reverse contains forty-five and a fraction lines of text carefully inscribed, then five ruled but blank lines followed by another inscribed line of text. Beneath this last line, but upside down, appear representations of the impression of a cylinder seal. It is of course to be expected that these illustrate the seal of the author of the text; instead, the legend (with but two signs: perhaps the word for "seal," damaged) gives the reading "Huban-shuturuk, son of Shati-hupiti"—names which do not appear to be extant at any point of the text proper.

The signs employed in the text, as also in the legend of the seal, are identical with those employed on Elamite documents dating from the last years of the Assyrian Empire. They resemble markedly the forms used in the rock-cut inscriptions of Shutruru and Hanni, son of Tahhihi, at Susa and Malamir respectively.<sup>142</sup> However, there is little difference between them and the forms which appear on the tablets written at Susa which have been published in *Mémoires de la Délégation en Perse*, Volumes IX and XI, and which date either to the last days of Assyria or, more probably, to the reigns of Cyrus the Great and Cambyses II.<sup>143</sup> Consequently, from the signs used upon it, the bronze plaque may be dated approximately anywhere between the

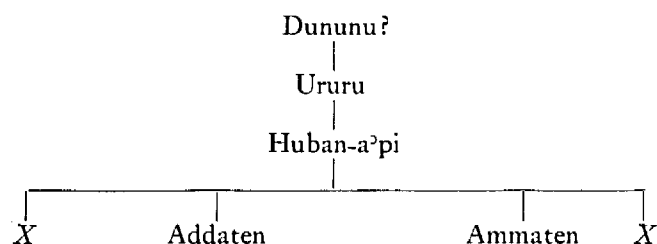
142. See Cameron, *History of Early Iran* (Chicago, 1936) pp. 159 f.

143. For this dating problem see *OIP* LXV 24, n. 2.

early years of the 7th century B.C. and the third quarter of the 6th. From every point of view the signs antedate those employed during the Achaemenid period beginning with the reign of Darius.

Thus it is unlikely that this plaque was inscribed at Persepolis, a new city founded by Darius. Presumably it was written some generations earlier in some other (Elamite) center and brought to the capital as a war trophy or the like.

Unfortunately, the internal evidence is just as indecisive. There are numerous personal names, but none of them, to the best of my knowledge, suggests an individual known from other sources. The most commonly mentioned name is that of Ururu, son of Dununu (the father's name is slightly dubious), which appears in obverse 33 and 37 and in reverse 11, 15, and 18. In obverse 34-37 four children of Huban-a'pi are named; two of these are indeterminate; the others are the son Addaten and the daughter Ammaten. The signs in these lines appear to bear evidence for a family tree such as the following:



In line 20 of the obverse there is reference to "wine"; wine is likewise mentioned frequently on the reverse, where there is also the word

*sattukku* (line 4), which is surely of Babylonian origin and which must denote the "regular (divine) offering." In reverse 8 we find the words for "(male) offspring" and "women" and the name of the woman Adda-mit; in reverse 15 we seem to have the phrase "(male) offspring of the temple." In reverse 10 we find "1 sheep, 1 *qa* flour(?)," and in line 11 the statement that Ururu gave these(?) in the month Rahal, a month name known to be of Elamite origin. Beginning at line 39 of the obverse and continuing on the reverse, four "winds" appear to be invoked frequently; what seems to be a curse against anyone who damages the object or its inscription begins in line 17 of the reverse. Throughout the text there is frequent reference to the "gods"; one deity, whose name is perhaps to be read Shashum (not Shadak), is called "my god" in lines 11-12 (also lines 24-25) and 28 of the reverse. The Elamite deity Shati "the great" appears in reverse 43. "Shamash above the heavens" (obv. 34) appears to be the only Semitic deity referred to, if we except the deity "Ashtar, the lady of the city" in line 35 of the reverse.

The impression gained from a careful study of the text (although any conclusion must be qualified by the confession that I have been unable to read it in a connected fashion) is that it is a provincial document by an otherwise unknown and surely unimportant—in the broader sense—village or district chieftain from some area where Elamite was the spoken language; that it was written probably in the 7th century B.C. or shortly thereafter; and that it was a memorial plaque recounting the founding of a temple, the fixing of a temple offering or of temple offerings, or the like, all done perhaps by the individual named Ururu.

## SCULPTURE AND APPLIED ORNAMENTATION

## GENERAL NOTES

In Volume I we dealt with the Persepolis palace reliefs—embellishing staircases, doorways, windows, and orthostat slabs—and with the imposing entrance guardians and column capitals in the forms of animals and monsters. In Volume III we shall consider the reliefs of the royal tombs. This architectural sculpture, though executed most probably with the help of foreign—principally Ionian and Egyptian—artists and artisans, and though borrowing most of its themes from the artistic repertory of the conquered nations to the west, nevertheless represents in its formal, often monotonous, dignity the typical art of the Achaemenid-Persian court.<sup>1</sup>

The present chapter deals with detached statuary, small sculptures, and remnants of applied ornamentation. Further sculptured objects are included in sections which describe groups of objects of related purpose and functions, such as seals, royal tableware, personal ornaments, and

so forth. Some of the objects under consideration are definitely of foreign origin. They are pieces of booty, tribute, or trade. In other instances we are unable to determine whether objects were made in Persia or some other land. We must bear in mind, furthermore, that the Persepolis Treasury, which contained most of the specimens here described, was the depository of many pre-Achaemenid treasures looted from Egypt and Mesopotamia, as indicated by votive objects and vessels inscribed with the names of kings who ruled those countries before Persepolis was founded. Thus, many objects of our collection probably antedate the site at which they were discovered. Again, the animal statues which once flanked doorways and staircases undoubtedly were carved at or near Persepolis, since they are made of native stone, but they may have been fashioned by foreign artists, as were probably the other palace sculptures mentioned above.

## ANTHROPOMORPHOUS AND THERIANTHROPIC SCULPTURE

## A GREEK STATUE

The beautifully wrought torso of a Greek statue (Pls. 29–30) has been thoroughly studied by Cleta Margaret Olmstead, to whose description we have little to add.<sup>2</sup> Miss Olmstead assigns it to the mid-5th century B.C. and considers it an Ionian statue of “Penelope” type and perhaps the original of numerous later copies,<sup>3</sup> which, however, as she states, may be adaptations of a slightly later replica of our Persepolis “Penelope.”<sup>4</sup> Its material—white marble, speckled with glittering crystals—is related, according to Miss Olmstead, to marble from the quarries of the Aegean islands.

A different interpretation of our sculpture has been proposed by Ernst Langlotz,<sup>5</sup> who considers it a copy (sculptured “hardly before the end of the 5th century”<sup>6</sup>) of a statue wrought presumably in bronze<sup>7</sup> about 460 B.C.<sup>8</sup>

1. See the important articles of Frankfort, “Achaemenian sculpture,” and Richter, “Greeks in Persia,” in *AJA* L (1946) 6–30; further, Kurt Erdmann, “Griechische und achaemenidische Plastik,” *Forschungen und Fortschritte* XXVI (1950) 150–53 (with references to earlier pertinent articles by Moortgat and F. W. von Bissing). See, especially, Henri Frankfort, *The Art and Architecture of the Ancient Orient* (“The Pelican History of Art” Z7 [Harmondsworth etc., 1954]) pp. 213–33.

2. See “A Greek lady from Persepolis,” *AJA* LIV (1950) 10–18 and Pls. VIII–XII.

3. For bibliography see *ibid.* p. 10, n. 4.

4. In 1947, Paul Jacobsthal—concurring with John D. Beazley—informed the writer that in his opinion too the Persepolis statue is the original, or one of the originals, of the well known “Penelope” type.

5. “Die Larisa des Telephanes,” *Museum Helveticum* VIII (Basel, 1951) 157–70.

6. *Ibid.* p. 160.

7. *Ibid.* p. 168.

8. Or between 470 and 460 B.C.; *ibid.* p. 164 and n. 17.

Langlotz suggests that the original statue represented a town goddess, namely the nymph Larisa, sculptured by Telephanes of Phokaia.<sup>9</sup> Undoubtedly there will be further and variant interpretations of our Greek lady by other experts of classical sculpture.<sup>10</sup>

In any event the Persians valued this masterpiece of an Ionian sculptor enough to transport it to distant Persepolis. Whether it was booty of war, a gift or tribute, or an object of trade, we do not know.<sup>11</sup> To the despoilers of the site the statue was apparently too burdensome for transport. A fragment of the right hand (Fig. 9), found in the Treasury near the northeast corner of Hall 38 (Plot HG 11<sup>12</sup>), suggests the original location of the statue. However, its torso, broken in two pieces, lay about 30 cm. above the floor in Corridor 31 of the same building (in northwest corner of Plot HG 61).<sup>13</sup> It is questionable whether the head was broken off at the point where we discovered the hand—which once probably touched the right temple (see below)—or whether the final mutilation took place in the corridor when the statue was found to be too heavy for transport. It is puzzling, however, that no further fragments of the missing parts of the arms and legs occurred at the two points concerned.

The positions of the extant fingers (Fig. 9 *A* and *D*) and the two fractured areas above and below a smoothly sur-

9. *Ibid.* pp. 163 f.

10. For instance, Dr. Dieter Ohly (Archaeologisches Institut, Munich) informed the writer that he intends to offer a solution differing from that of Professor Langlotz.

11. As to Greek statues—spoils of war—erected in the residences of the Achaemenids see Arrian *Anabasis* vii. 19. 1–2.

12. For the location of excavation plots see any find-spot plan (e.g. Fig. 6).

13. For illustration of find-spot see Vol. I, Fig. 77 *A*.



faced channel on the back of the hand (Fig. 9 B-C), combined with the posture of the torso (Pls. 29-30), suggest that the head, inclined toward the right, rested with its right temple on the proximal phalanges of the right hand, while locks (or the edge of the himation?) touched the back of the hand.<sup>14</sup>

Our statue is seated on a flat slab (2 cm. thick) whose edges are mostly destroyed. The slab apparently was once approximately rectangular (41 × 32 cm.), but the corners were rounded. Beneath the seat there is a square projection (30 × 30 × 5 cm.) with two or three holes at the left front (see Pl. 29) and three holes at the right rear (Pl. 30) of the statue. At the bottom of this process a central frac-

ture, and many evidently came from the arm bands of shields. For the latest accounts of them see "Bericht über die Ausgrabungen in Olympia," pp. 57 ff., Pls. 14 ff. (in Deutsches archäologisches Institut, *Jahrbuch* LII [1937]) and pp. 70 ff., Pls. 27 ff. (*ibid.* Vol. LIII [1938]); Humfrey Payne, *Necrocorinthia* (Oxford, 1931) pp. 222 ff.

A sketch slab (Pl. 31:2) substantiates our opinion that Greek artists worked at the embellishments of the Persepolis structures.<sup>16</sup> The stone (3.1 cm. thick) is the common dark gray limestone of the site. The design fragment scratched in the smoothed top of the slab preserves the skillfully sketched torso, right arm, and thighs of a man in Greek attire. The shirtlike garment ends in loose folds at the middle of the thighs. The right arm, apparently

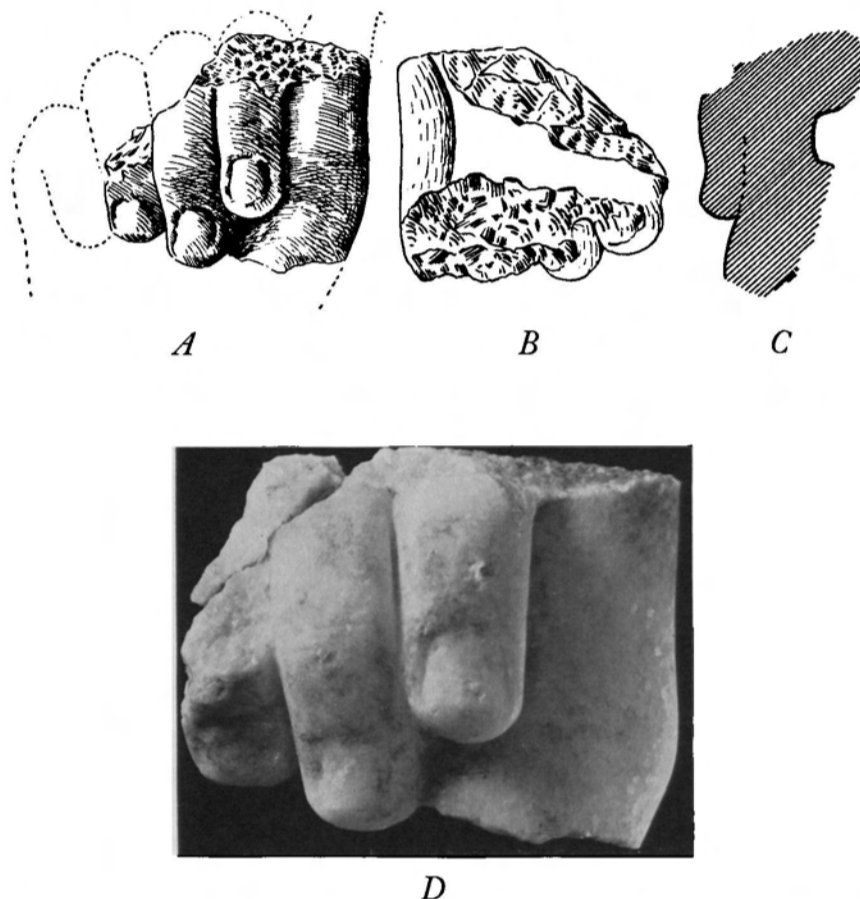


FIG. 9. FRAGMENT OF RIGHT HAND (PT5 357) OF MARBLE STATUE (PT4 1166) OF A GREEK LADY (SEE PLS. 29-30). SCALES, 1:2 (A-C) AND 1:1 (D)

ture (18.7 × 21 cm.) shows that there was an additional projection with elliptical, almost circular top. This projection may have been a dowel resting in some basis of unknown form, or—if it extended to the ground—it may have been the basis of the seated figure.<sup>14a</sup> The holes of the above-mentioned square process suggest that supports of some kind had here been fastened.

#### GREEK AND EGYPTIAN OBJECTS

In regard to a bronze band with a pattern of obviously Greek character (Pl. 31:1), Gisela M. A. Richter has kindly contributed the following commentary:<sup>15</sup>

The bronze plaque with *repoussé* relief belongs to the so-called "Argivo-Corinthian" class and may be dated in the first half of the 6th century B.C. Similar plaques have been found in Olympia and else-

14. Cf. reconstruction of "Penelope" type illustrated by Cleta M. Olmstead in *AJA* LIV 15, Fig. 1; for bibliography see *ibid.* p. 14, n. 19.

14a. For variants of such bases, see *ibid.* Fig. 1, Pls. XI A-B and XII E.

15. A communication from Langlotz agrees with Miss Richter's comments as to the use, origin, and approximate dating of this object. See now Emil Kunze, *Archaische Schildbänder* (Deutsches archäologisches Institut, "Olympische Forschungen" II [Berlin, 1950]).

nude, is tightly flexed, the hand holding a staff or the like. A curved device is marked below the throat, and a paw-shaped object protrudes below the arm from behind the back. As to the identification of the figure, Miss Richter comments as follows:<sup>17</sup>

The scratched design is, as you suggest, Greek, and I should date it around 500 B.C. It evidently represents Heracles wearing a chiton with a lion's skin over it, which is knotted on the chest. The object in his right hand is probably a club.

Additional pieces of such sketch slabs occurred in Hall 73 of the Treasury, close to Courtyard 29, where the illustrated specimen was uncovered. Vague traces of a pattern appear on one of the pieces. Another shows three paired concentric circles with central dots. Other fragments are

16. Miss Richter has convincingly demonstrated the contributions of Greek artists to Persepolitan sculpture and directed attention to graffiti engraved by a Greek artist on a shoe of the king (assumedly Darius I; see our Vol. I 222, n. 7), obviously before the relief bearing the graffiti was painted (*AJA* L 28 and Fig. 26).

17. Langlotz too dates our graffiti about 500 B.C., and he considers it the sketch of a Greek vessel-painter.

plain, with the exception of a border line such as that marked on the illustrated slab.

Four objects illustrated on Plate 31 are of Egyptian origin. A portion of a human foot is the remnant of a statuette which once stood on a blue composition pedestal (Pl. 31:3)<sup>18</sup> inscribed in Egyptian hieroglyphic. Professor George R. Hughes examined this object, which is now in the Oriental Institute Museum, and comments as follows:

The inscription on this base might be the dedication inscription of a statuette of some deity. If so, the preserved words would be part of the plea of the devotee that the god give him among other things "health and his happiness eternally," or cause that "his happiness be sound eternally."

The base fragment (2.4 cm. thick) has a slightly curved front, but the original shape of the object is unknown, for its sides and back are broken. A somewhat similar pedestal (PT4 539)<sup>19</sup> is made of the same sort of blue composition (see n. 18), and the preserved portion forms the segment of a ring which if completed would have a circumference of 24 cm. This pedestal bears the second and third elements of the titulary of the Egyptian king Nekau (609–594 B.C.).<sup>20</sup> According to Hughes the remnant of the inscription reads: "Favorite of the Two Goddesses: 'Triumphant'; Golden Horus: 'Beloved of the gods.'"

Both an alabaster figure of Negroid type and a figurine fragment of blue composition (Pl. 31:4, 6; see n. 18) represent the Egyptian god Bes, whose bizarre image we found also on a label sealing (No. 64; see pp. 15, 38 f.) and on pieces of inlay (see p. 72). Hughes informs us that Bes was very popular in Saite and later times and that, besides grotesqueness, the lion-skin cloak, girdle, and hands on hips are characteristic of statuettes of this god.<sup>21</sup>

There is, finally, the upper part of a bronze statuette (Pl. 31:5) representing the ram-headed god Harsaphes.<sup>22</sup> Although found outside the eastern entrance to the Treasury, there is little doubt that it had once been deposited in this building in the same manner as the other objects of foreign provenance mentioned above.

#### NATIVE(?) STATUETTES

An important little head of baked clay (Pl. 32) uncovered by Herzfeld among the Elamite tablets in the northern fortification ("O" on Fig. 1),<sup>23</sup> near the northeast corner of the Terrace, is the only naturalistic sculpture of a man of native type found at Persepolis. The surface of the object is red-brown to light brown, and its paste

18. Foot and pedestal, made of identical material, were found separately and mended, as shown in the illustration.

For analyses of objects made of the artificially compounded substance which we call composition, see section on "Egyptian Blue" (pp. 133 ff.).

19. See *OIC* No. 21, p. 59 and Fig. 37. The object was found near the debris surface about 3 meters above the floor of Room 33, in the western central portion of Plot HG 42.

20. For inscribed vessels of Nekau and Amasis, see p. 83 and Pls. 47:1, 3–5, 7 and 48:2, 4–6, 8.

21. Cf. Georges Daressy, *Statues de divinités I* (CG XXVIII [1906]) Pls. XXXIX–XLI. A deposit of Egyptian Bes figurines and eye charms of blue *pâte* (undoubtedly the substance which we call composition; see n. 18) were found in the palace compound of Susa; see *Délégation en Perse, Bulletin II* (Paris, 1911) 56.

22. Cf. Daressy, *op. cit.* No. 38502 (p. 135 and Pl. XXIX).

23. According to a letter written by Herzfeld to the Director of the Oriental Institute in 1933.

is red-brown, medium fine and medium hard. There is a great deal of difference between the idealized and stereotyped features of most persons shown on the monumental reliefs and the face here modeled in clay, a face which is quite typical for many Iranians of our time.

The man wears a cylindrical headdress, fur-trimmed at the upper edge. A band, consisting partly of a fur strip which shows in front, is wound around (or attached to) the lower section of the hat and tied in front between the fur borders. The fur is indicated by irregular stippling, while the man's hair, which crops out from beneath the headdress, is marked by relatively regular rows of curved dashes. Similar dashes mark the mustache and the beard, which is broken at the chin. The strong face has pronounced supraorbital ridges, an aquiline nose, and rather fleshy lips. The large eyes are shown without irises or pupils. The rear view indicates that the head is tilted to the right. The form of the headdress is close to the shape of the Persian tiara, but none of the stone reliefs show fur borders or what appears to be a combination of hat and bashlyk worn by the interesting little clay figure. Being hollow, it could have been a part of either a vessel or a statuette. There is a definite resemblance between the graffiti of men's heads scratched on the king's shoe (see p. 67, n. 16) and the clay sculpture with which we are concerned. As the graffiti were undoubtedly engraved by a Greek artist, we may conclude that the little clay sculpture too was modeled by a Greek, presumably at or near Persepolis.

Another unique object, a bronze statuette of a man (Pl. 31:8), was found on the floor of Hall 41 in the Treasury, which proves its pre-Alexandrian origin. The face is abraded, but it seems certain that it was beardless. Bushy, though groomed, hair is bunched below the cylindrical, slightly domed hat.<sup>24</sup> The man is dressed in a long, sleeveless, but belted jacket or vest with reinforced edges at the shoulders. Sleeves of an undergarment though not discernible may of course cover the arms. The wrists are encircled by unusually large "bracelets," so large that one is inclined to attribute some utilitarian purpose to them. Chariot reins, for instance, may have been fastened to such rings. The arms are closely flexed, the left hand (perhaps both hands) apparently grasping the frontal edge of the jacket at the armpit. The statuette ends at the hip. There is no definite fracture; but a lump of corroded iron at this point suggests that some other object—perhaps a horse or a chariot body of iron—continued downward. There is also an iron lump on the right shoulder. Thus, it is not impossible that the right hand, instead of grasping the edge of the jacket (see above), held some object made of this metal. We have no explanation for the purpose of a vertical gash at the back of the figure.

A shoulder and part of an arm (Pl. 31:7) are apparently fragments of a stone statue of a man at about half life-size. At the same find-spot, on the floor of "Garrison

24. For a similar, though more elaborate, bearded head of an Achaemenid statuette see Stanley Casson in Pope, *Survey I* 351 f. and IV, Pl. 108 E (limestone). Cf. also the exquisite head of a beardless Persian youth with elaborately groomed hair and a dentate tiara in Mehdi Bahrani, *Iranian Art, Treasures of the Imperial Collections and Museums of Iran: Catalogue*, No. 17 (Fig. 8) (published by the Metropolitan Museum of Art, 1949). The head, 6 cm. high and made of blue composition (see our n. 18), was uncovered at Persepolis by the Iranian Antiquity Service.

Street," a fragment of a slab of the same light-colored stone occurred. It was probably a section of the pedestal, painted red on its upper surface. A similar base fragment

was found a few meters away. The origin of the rather crudely carved statuette is doubtful, but it may have been fashioned at the site.<sup>25</sup>

## THERIOMORPHOUS AND MISCELLANEOUS SCULPTURE

### LION PEDESTAL

A unique tripod pedestal of bronze lions (Pls. 33–34) covered with green patina stood near the north wall of Hall 38 (Plot HF 28).<sup>25a</sup> The lions' paws, resting on small bronze plates, were imbedded in the red surface layer of the floor. The entire pedestal, lions and hollow central socket without bottom, were cast in one piece. Each lion is solidly attached to the two other animals at flank and shoulder. A bar connects each lion with the cylindrical-socket, the top of which is broken and bent outward. The mutilation of the socket was undoubtedly caused by the removal of the device originally supported by the pedestal. The heavy lion tripod formed a substantial base for a single, problematical device—perhaps a table, an altar, an emblem, or a receptacle of some kind—which was supported by a cylindrical rod about 6 cm. in diameter, fitting into the base socket. A rust stain on the croup near the tail of each lion suggests that three rods of iron rested on the backs of the animals and formed additional supports for the missing upper part. There are deep gashes (casting marks?) along the back, on the back of the neck, down the back of each leg, and across the top of each hind leg.

The three identical lions are shown with open jaws, in walking position, and with slightly raised tail. The mane and other heavily furred parts of the body are marked by lozenges. The plates on which the paws stand are fitted to the shape of the claws. Parts of the paws, jaws, and tails are corroded. The tufts of all tails are completely disintegrated.

We have not yet succeeded in establishing the exact provenance of this impressive remnant of an enigmatic device, but we are inclined to look for its origin in the northwestern provinces of the empire. Richard Delbrueck believes (verbal information) that our lion pedestal is Ionian, and that it may have been the basis of a cult object of Cybele (the mother goddess whose companion animals are lions).<sup>26</sup>

### MISCELLANEOUS FRAGMENTS

The fragment illustrated on Plate 35:1 shows the left arm of a man grasping the mane of a lion, whose head only is preserved. There is hardly a doubt that this sculpture represents a combat of the (royal?) hero triumphant, a scene frequently occurring on reliefs and seals. It is unknown, however, whether hero and lion were carved entirely in the round or whether the lower portion of the scene was simply shown in relief after the fashion of the lions on lid PT5 687 (see p. 88). The natural pattern

25. As to fragments of at least one huge limestone statue discovered at Susa see Vol. I 31; and as to the possible existence of statues of Xerxes and Anahita at Persepolis see *ibid.* p. 81. Herodotus (vii. 69) mentions an image of hammered gold which Darius had made of his wife Artystone.

25a. For find-spot see Vol. I, Fig. 80 F.

26. See Pauly-Wissowa, *Real-Encyclopädie der classischen Altertumswissenschaft* XI (Stuttgart, 1922) "Kybele," cols. 2258 ff.; also Olmstead, *History of the Persian Empire*, p. 469. Some pertinent references to tripod pedestals are to be found in Pauly-Wissowa V (1905) "Dreifuss," cols. 1669–96.

and the colors of the stone enhance the attractiveness of the well sculptured object.

In the Throne Hall occurred a lion's paw (Pl. 35:2) of blue composition (see n. 18) originally provided with inlaid claws. A second, almost identical, paw was found in the debris of the Apadana. The paw of a bronze feline occurred in Hall 38 of the Treasury, and a small gold tablet showing the paw of a lion or other feline in *repoussé* was found in Room 39.

Other fragments of the same general character as those shown on Plate 35:3–4, that is, parts of statuettes or perhaps miniature capitals, occurred in various parts of the Persepolis Terrace. There are eight sculptured fragments of blue composition and one of clay(?). Three of the former may belong with the lion fragment (No. 4). There are also two more wing fragments of the type represented by Plate 35:5–6, presumably parts of composite monsters in miniature. A palmette (Pl. 35:7) is almost duplicated by an element of a vessel stand(?) of alabaster which bears the name of the Egyptian king Amasis (see p. 83 and Pl. 47:3). It is possible that our blue composition palmette was part of a similar device and that its provenance is determined by the definitely Egyptian specimen.

The head of a small clay figurine representing a ram (Pl. 35:8) is one of the few specimens of its kind found at Persepolis. It may be one of the (ubiquitous) clay animals or part of a vessel handle. A gazelle(?) fragment (Pl. 35:10) may have belonged to the handle of a pitcher. A bronze leg (Pl. 35:9) was part of the statue of a quadruped at least as large as the lions shown on Plates 33–34. The leg was attached to the body by means of iron dowels, remains of which are visible at the upper end.

### ENTRANCE STATUES

Detached animal statuary of, or close to, life-size occurred in the Apadana and in its southern courtyard,<sup>27</sup> near the east stairs to Xerxes' palace platform, and in a palatial compound partly excavated by Herzfeld south of the Terrace (see below). In Porticoes 18 and 20 of the Treasury rectangular depressions undoubtedly prepared for the bases of statuary were uncovered at either side of doors leading to the complex of Courtyard 17.<sup>28</sup> There was no trace of the statues proper nor of their pedestals. These entrance guardians may have been similar to any of those shown on Plate 36.

The statues illustrated on Plates 36 A–B, D–E and 37 B and the bull statue from Xerxes' stairway are made of the same kind of gray limestone that was used for the structures of Persepolis. The ibex on Plate 36 C and the statue of a similar animal shown on Plate 37 A are made of light-colored limestone, which does not seem to occur in the direct environs of the site.

The animal statue and its pedestal shown on Plate 36 A–

27. See Vol. I, Figs. 29, 30, 32.

28. See *ibid.* p. 171.

*B* were wrought from one piece of rock and then polished. The sculpture was found in the vestibule of the southeastern tower of the Apadana (Plot HE 14).<sup>29</sup> Bryan Patterson of the Chicago Natural History Museum has identified the animal as a canine, presumably a mastiff. It has two pronounced nipples in addition to the male genitals.<sup>30</sup> As to other sculptures of mastiffs, Hughes has directed our attention to an almost complete Egyptian statue of a dog.<sup>31</sup> This basalt dog of the Ptolemaic period closely resembles our Persepolis statue. The postures of the two canines are almost identical, and the Persepolis specimen most probably had a collar—such as that of the Egyptian statue—as suggested by a projection at the neck fracture.<sup>32</sup> By the side of the Persepolis statue we uncovered the pedestal of a second, presumably identical, canine; but only its paws and parts of the hind legs were left on the rectangular base.

The find-circumstances of a stone ibex (Pl. 36 *C*) uncovered together with remnants of a second ibex statue in the vestibule of the northeast tower of the Apadana<sup>33</sup> are almost identical with those of the mastiffs found in the southeast tower. Thus we conclude that both pairs of sculptures originally served the same purpose, namely to embellish the entrances to the towers concerned. We have pointed out, however, that the sculptures (certainly the mastiffs) had been removed from their original locations prior to the destruction of the building.<sup>34</sup> While the mastiffs were shown sejant, the ibexes were represented in a standing position, with a central pillar for support below the belly.

The torso of a life-sized bull statue (Pl. 37 *B-C*) was uncovered in Plot HE 51 near the stairway leading from the southern courtyard of the Apadana to the terrace of Palace G, which was once fronted by a façade of Artaxerxes

III.<sup>35</sup> A still more fragmentary but otherwise identical bull torso lay about ten meters to the northwest, near the northeast corner of Darius' palace. It is to be assumed that the two stone bulls were pendant statues and flanked the small stairway mentioned above. A broken projection at the center of the bull's belly (see Pl. 37 *C*) indicates that a pillar in addition to the legs gave support to the heavy sculptures, which were otherwise free-standing.

A similar bull statue was discovered by Eugène Flandin and Pascal Coste near the eastern stairway to the platform of Xerxes' palace. Possible clues as to the original location of the bull, its (missing) pendant sculpture, and perhaps a second pair of statues on the western stairway have been pointed out.<sup>36</sup>

The manner of use of such pairs of animal statues is demonstrated on Plate 37 *A*, which shows Herzfeld's excavation in a palatial compound south of the Persepolis Terrace.<sup>37</sup> At either side of the base of a stairway leading down to a courtyard the pedestal of an animal statue is visible. The hoofs still attached to the left pedestal point away from the stairs toward the courtyard and show the original orientation of the missing stone animal. The ibex(?) torso partly resting on the pedestal to the right is turned in the direction opposite to its original position.

In the same compound south of the Terrace (according to Herzfeld's catalogue, "at the south side of the eastern portico") were found parts of two identical polished statues of couchant felines, perhaps leopards (one shown on Pl. 36 *D-E*, now in the Oriental Institute Museum: No. A 24077). In each case the base—rectangular except for the curved rear end—and the animal, whose head is missing, were wrought from the same block of gray limestone.

## APPLIED ORNAMENTATION

### PARTS OF METAL ORNAMENTS

A unique pair of bronze horses, cast in one piece (Pls. 38 and 39:1), may have been a part of a chariot scene in a frieze. The find-spot of the object, namely the portico of the Throne Hall, gives no clue as to the original location of such a frieze. It may have been attached to a wooden door or to a piece of furniture. There are some features distinguishing the bronze horses from those pictured in the stone reliefs of the Apadana. The headgear of all horses in the reliefs either is identical with that of the king's horses<sup>38</sup> or resembles it closely. The side bar of the bit is either a straight or a slightly curved rod, while the side bars of the bronze horses are curved with curled ends. None of the

29. See *ibid.* p. 73.

30. Patterson confirms that male dogs frequently have pronounced nipples.

31. James Henry Breasted, *Geschichte Aegyptens*, Deutsch von . . . Hermann Ranke . . . (2d ed.; Vienna, 1936) Pl. 175.

32. The Museum of Tehran restored the Persepolis statue, but to judge by Arthur Upham Pope's illustration in Iranian Institute, *Bulletin* VI (1946) 88, Fig. 8, the modeling of the head is not satisfactory. The head of the Egyptian dog (now in the Louvre; see reference given in our n. 31), originally with ears raised and on the alert, would be a perfect model for restoring the Persepolis dog. Cf. also the mastiff at the side of its master on a bronze statuette from Susa; best illustration in Georges Perrot and Charles Chipiez, *Histoire de l'art dans l'antiquité* V (Paris, 1890) Fig. 481.

33. See Vol. I 73, n. 28.

34. See *ibid.* p. 73.

chariot horses in the reliefs shows a small saddle-shaped cushion such as is visible behind the rein ring on the bronze specimen. The brush-shaped forehead decoration of the relief horses, formed by tying and dressing the forelock, is absent on the bronze horses. Instead, the latter have hat-shaped forehead ornaments, which are too large to be arrangements of dressed forelocks.

The entire flank of the horse which is fully shown is slightly depressed and flat, and a groove cuts across the haunch. These depressions suggest the former presence of inlays completing the curve of the horse's flank and fastened to it by nails or plugs inserted in the holes which are visible in the illustrations.

In addition to the fragments shown on Plate 39, there are twenty bronze fragments of wings (cf. Pl. 39:3, 4, 7*a-b* and Fig. 10), winged or probably winged monsters (cf. Pl. 39:2, 6, 7*c*), and perhaps the winged symbol (cf. Pl. 39:5), and one piece of a silver wing. With the exception of a wing fragment from Palace D, these additional specimens were found in the Treasury. The following list shows the distribution of all fragments of such decorative ele-

35. See *ibid.* pp. 274-75.

36. *Ibid.* pp. 241 and 269.

37. See *ibid.* p. 55.

38. See *ibid.* Pl. 52.

ments, which are well represented by the illustrated specimens:

Find-Spot	Quantity
Treasury, Room 5	1
Room 8	3
Courtyard 29	4 (e.g. Pl. 39:5)
Room 33	2 (e.g. Pl. 39:3)
Room 36	1 (silver)
Hall 38	2
Hall 41	2
Hall 72	1
Hall 73	1
Vestibule 76	2
Room 78	1
Room 83	2 (e.g. Fig. 10)
Room 84	1
Apadana, N. courtyard	1 (Pl. 39:2)
Harem, service quarters	1 (Pl. 39:4)
Street N. of Treasury	1 (Pl. 39:6)
Palace D	4 (e.g. Pl. 39:7)

The rather homogeneous character of these decorative metal sheets suggests that they were originally used in a uniform, almost stereotyped manner. They might have

star (1g), and the wing of a monster (2), do not permit us to visualize the original composition. The helmeted head (1a) has non-Persian features, but we did not succeed in determining its provenance.<sup>40</sup> Traces of gold foil preserved on a few specimens suggest overlay of gilt. Remnants of green fritty matter in some of the depressions indicate the nature of the inlays in the deeply carved design of Nos. 1g and 2 and in the pitted portion of 1b.

On Plate 40:3 we illustrate samples (arbitrarily arranged purely for recording) of a hoard of several hundred assorted units of lapis lazuli, carnelian, agate, onyx, sardonyx, and rivets of gold which were found piled in a hole in a corner of Room 63 of the Treasury.<sup>41</sup> A plaque, or the like, had been inlaid with these elements; but the composition of the pattern could not be determined. Some of the wavy lapis lazuli and carnelian units have a right-angle turn (not shown on the illustration) at one end, suggesting that they bordered a rectangular design. An antithetic, symmetrical composition is indicated by units which are identical but oriented in opposite directions (see rows 2, 3, and 7). The lapis lazuli beards, whose form marks them

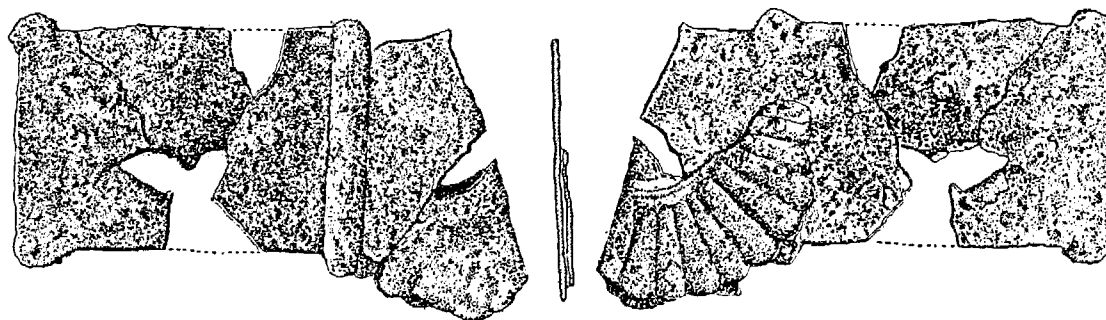


FIG. 10. DOOR FRIEZE(?) FRAGMENT OF BRONZE (PT6 664), FOUND IN TREASURY, ROOM 83, NEAR SOUTH WALL (PLOT IG 25). SCALE, 1:2

formed friezes or antithetic groups decorating walls; but it is more tempting and plausible to consider them ornaments of doors, where their effect would have been striking indeed. The find-conditions in several cases support this assumption. In describing the doors of the Treasury,<sup>39</sup> we suggested that parts of such friezes may have consisted of precious metals worth looting, whereas pieces of baser metal were discarded. We may add—referring to bronze nails capped with gold or silver (e.g. Pl. 42:38, 40)—that the pilfered parts of the ornamentation may have been overlaid with the desirable metals.

A somewhat unusual bronze wing, upcurved in Achaemenid manner, is shown on Figure 10. The specimen adheres to the remnants of a bronze band with rounded projecting corners. A ridge is marked on the back. To judge by the shape of the band, projecting beneath the wing, the two pieces are in their original relative positions, that is, the wing is part of an overlaid monster or symbol which, combined with its base, formed some ornament of problematical shape but undoubtedly belonged to the group of ornaments under discussion.

#### INLAY WORK AND ORIGINALLY ATTACHED OBJECTS

Scorched ivory(?) fragments (Pl. 40:1-2) found within a limited area in Hall 41 of the Treasury may have been parts of one object, perhaps a plaque or a box, or of two objects of this nature, Nos. 1g and 2 possibly belonging to a second. These carved pieces, showing parts of human beings (1a-b), a bird (1c), animals (1d-f), an encircled

as those of royalty or sacred beings, indicate that parts of the design were in high relief, or that parts of the object were sculptured in the round. The existence of one large beard and two smaller examples (row 5) suggests a central figure (the king or the hero triumphant) perhaps flanked by man-bulls. All units have beveled edges, characteristic for inlays. There is no doubt that missing parts of the object were made of gold, as indicated by extant examples of the hollow gold rivets which were certainly once inserted in all perforations of the rectangular lapis lazuli strips. The pilferer—in this case apparently a Treasury workman—stripped the mosaic object of its most valuable parts and buried the rest.

The following types of units occurred solely with the remnants of this object: the lapis lazuli strips with gold rivets, the lapis lazuli units of row 2, the carnelian units of row 3, the angular lapis lazuli and carnelian units flanking rows 4 and 5, the wavy strips of the same materials of row 6, and the lapis lazuli units of row 7. There is only one additional inlay beard (Pl. 41:24), but rectangular agate units like those in row 1 and especially eye stones of onyx and sardonyx (rows 4 and 8) were frequently encountered. Six individual rings of the type encircling the eye stones of row 4 were found at various spots. Four were made of

40. For references to collections of early ivories see Loud, *The Megiddo Ivories* (OIP LII [1939]) pp. 1-2; *Reallexikon der Vorgeschichte* III (Berlin, 1925) "Elfenbein," pp. 87 ff. For recently discovered Nimrud ivories see now reports by M. E. L. Mallowan in *Iraq* XIII (1951) 1-20, XIV (1952) 1-23 and 45-53, XVI (1954) 59-163 and in *The Illustrated London News*, Aug. 16, 1952, Aug. 8, 15, and 22, 1953.

41. See Vol. I 198.

39. *Ibid.* p. 159.

lapis lazuli, one is of white stone, and one of green substance with purplish (scorched) surface (possibly opaque red glass; see pp. 130 ff.).

There are numerous thin plain and patterned pieces of gold which may be inlays, or they may have been overlays (bracteates) on bases of various materials. Again, some objects are definitely inlays, and others have depressions which received inlaid substances. Finally, there are sculptured objects which had been inserted in or attached to statuary or reliefs.

Gold objects used as inlays or overlays include the following specimens shown on Plate 41 (see also Pl. 42:1-3, 6): A rosette (No. 2) serves as a sample for sixteen such ornaments—eleven of which have twelve petals, whereas some of the remaining (abraded) rosettes may have fewer subdivisions; none of them have devices for attachment or suspension. There are, further, two frail units, namely parts of a floral garland (No. 8) and possibly of a bird (No. 10), a palmette (No. 9), a fragment ornamented with a star (No. 11), latticed diamonds (No. 12), and a scale (No. 29; see also No. 28). As to shape, the objects of this group are unique except for No. 2 (see above), No. 12 (a smaller example occurred in Treasury Hall 38), and No. 29 (two additional scales of gold). Our collection of similar (not illustrated) gold objects includes two minute disks, five fragments with traces of indeterminate designs, and twenty pieces of foil, one of which shows an impressed checkerboard pattern.

Units of inlay work are illustrated on Plate 41 by the minute turquoise face of a lion or similar animal (No. 6) and by an example of the bizarre face of Bes made of frit (No. 7). Two additional Bes heads, one of bluish-green turquoise, the other of composition (see p. 133, n. 1) of the same color, were found in Vestibule 23 and in Courtyard 29 of the Treasury. A second, almost identical, inlay eyelid of the type of No. 19 occurred at the same find-spot as the pendant specimen of opaque red glass with green surface,<sup>41a</sup> and two small ovoid eyes of white stone with hollow, formerly inlaid, centers occurred in other parts of the Treasury. It is difficult to visualize the purpose of a curved piece of glass (No. 20), but it may have been a part of inlay work. A lapis lazuli beard (No. 24) was once part of a miniature relief or statuette of a royal person or a sacred being, as were the very similar beards illustrated on Plate 40:3. The beveled outer edge of a unique carnelian fragment (No. 25) shows that it was itself a unit of an inlay pattern, and its scalloped inner edge indicates that it bordered another unit in the form of a twelve-petaled rosette. There are three specimens of a type of red and green glass spheroid (No. 26) cut or molded in such fashion that the upper portion forms a six-petaled rosette. A composite disk (No. 27) may have been the eye of an animal, and a red and green glass<sup>41a</sup> scale (No. 28) was perhaps a unit of inlaid imbrication marking fur or feathers. To this group of inlays should be added a number of indeterminate fragments and fourteen small plano-convex disks, the latter provided in most cases with beveled edges and made of the following materials: opaque red glass (4), brown and white onyx (4),<sup>42</sup> iridescent transparent glass (1), light tan alabaster (1), probably black bitumen (1), red-brown carnelian (1), and greenish-blue turquoise (2).

41a. For a study of opaque red glass with green surface, see pp. 130 ff.

42. Actually small eye stones (cf. p. 77 and Pl. 40:3, row 8).

Inlaid objects are represented on Plate 41, first of all, by two instructive little flakes of ivory(?) with depressions in the form of minute lions (No. 1). Flake 1*b* proves that thin metal figures were used as units of inlays, for on this specimen the tail of the engraved lion is filled with gold—that is, the remnant of a gold lion—and above the animal is a minute horizontal strip of the same metal. Compartmented gold objects once filled, cloisonné-fashion, with other substances are represented by an eight-petaled rosette (No. 3), a strip with triangular subdivisions, some of which are still filled with light green fritlike matter (No. 4), and a rosette of sixteen petals (No. 5) which were once filled with turquoises, as proved by four extant units (see also Pl. 43:8-10).

The most interesting specimens of the category of sculptured objects once inserted in or attached to statuary or reliefs are those which we tentatively identify as artificial beards. There are nine extant pieces (e.g. Pl. 41:14-15). All are made of blue composition, which imitates lapis lazuli (and perhaps turquoise). There is little difference in size and form. The convex obverse is corrugated and has a rounded curled tip. The upper edge is rather straight but slightly beveled, slanting back and down. On the reverse there is a projection—undoubtedly a dowel—whose outline roughly parallels that of the beard. The dowel was inserted in the chest of the figure to be provided with the beard, which in addition was fastened by two nails of bronze (see No. 14). Artisans' (?) marks are found on the flat or slightly curved base of the dowel. In one instance there is a five-pointed star. Wedge-shaped signs (in addition to a row of grooves) occur on No. 14. As to the symbols suggesting hieroglyphs on the dowel of No. 15, Hughes doubts whether any serious inscription would appear on the completely hidden part of the object. He comments: "It is possible to imagine that some of the signs might be very badly carved hieroglyphs, but others suggest nothing. It may be a case of so-called 'pseudo-hieroglyphs,' which sometimes appear for no known reason on Egyptian objects." The "hieroglyphs," therefore, provide no proof that beard No. 15 originated in Egypt.

We found no clues—such as parts of reliefs or statues—which would determine the actual manner of use of these beards of blue composition. They had either been attached to objects of perishable nature which have decayed or to figures made of or covered with precious metal which were removed by the pillagers after being stripped of parts without material value. The date and provenance of these objects are even more puzzling. For instance, a base bearing Nekau's name (PT4 539; see p. 68) is made of the same sort of material as the objects concerned and proves that this material was known in Egypt—the land where the compounding of the substance may have originated (see "Egyptian Blue," pp. 133 ff.)—about a century before Persepolis was built. However, pre-Achaemenid Babylonia too knew how to prepare this substance, as is shown by Koldewey's discoveries of cylinders (see p. 57) and "remnants of large reliefs consisting of a beautiful blue paste which imitates lapis lazuli."<sup>43</sup> The latter reference is particularly relevant, for Koldewey continues (trans.): "The figures were composed of individual pieces, each of which consisted of a small part only, such as a lock of hair or the like. The individual pieces, which have a

43. *Das wieder erstehende Babylon* (4th ed.) p. 156.

prismatic projection on the reverse, had been fastened on a common basis, the material of which we do not know." The "lock of hair" set into a basis by means of a projection on the reverse sounds very much like a description of an object similar to those under discussion.<sup>44</sup> Furthermore, the substance of a turquoise-colored fragment "from a small temple at Nimroud" illustrated (in color) by Austen Henry Layard<sup>45</sup> suspiciously resembles the material of which our blue composition objects are made and suggests that Assyria too knew the method of its manufacture (cf. Assyrian formula on p. 134). Layard describes the Nimrud fragment as "part of a beard or hair in clay, coloured blue, probably belonging to a statue."<sup>46</sup> The combined units of a yellowish-tan "fragment of a beard in enamel" from the same Nimrud temple<sup>47</sup> resemble our detached units of composition beards in shape and pattern. Finally, inscriptions of Darius and Xerxes on pegs of the same sort of blue composition (see p. 50) and the Persian head from Persepolis referred to on page 68, note 24, prove that objects of this material were made during the Achaemenid period, perhaps, even, at the site of Persepolis (see p. 133, n. 4). In any event, the stereotyped shape, pattern, and material of the blue composition beards suggest that they were all affixed to objects of the same character made during the same period in the same area—presumably pre-Achaemenid Mesopotamia.

The find-circumstances of the beards indicate that the reliefs or statues to which they belonged were scattered in various buildings. Three specimens occurred in the Treasury (two in Room 33, one in Courtyard 29), two in the west wing of the Harem (Rooms 6 and 10), one in a room beneath Palace D (Plot IF 11), one in Yard 21 of the garrison quarters, and two in excavated soil (one of them perhaps from a room in the west wing of the Harem).

As to the remaining units of sculpture shown on Plate 41, there is a realistically modeled leaf of ivory or bone (No. 13). Fragments of identical or similar leaves occurred close to this specimen (in Room 83), and another piece was found in Vestibule 7, which belongs to the same group of Treasury suites. As ribs and veins are marked on both faces, these leaves appear to have been parts of an artificial tree.<sup>48</sup> A feather (No. 16) of green-surfaced opaque red glass (see pp. 130 ff.) was perhaps one of many inlay elements of the wing of a monster or of a winged disk symbol. An additional fragment of the same form and material occurred in Passage 26 of the Treasury. A chalk(?) tooth (No. 17) of an animal statue was duplicated by another specimen which was found near by, in Vestibule 23, but a portion of a set of stone teeth (No. 18), which once fitted into the mouth of an animal statuette, is unique. The purpose of a leaf-shaped object (No. 21) with dentate edge on both faces is unknown to us. The fragment of a brick with relief pattern (No. 22) is the only example of its kind found at Persepolis. It is definitely a unit of a brick mosaic showing either a part of a beard or more plausibly a furry patch of an animal or monster.<sup>49</sup> Finally, a horn fragment

(No. 23) illustrates a number of specimens of stone or blue composition which were once attached to the heads of animals or monsters of column capitals, entrance statues, or the like.<sup>50</sup> Three pieces of such horns, made of blue composition, occurred in rooms beneath Palace D, where among other objects were found fragments of lion statuettes made of the same substance (e.g. Pl. 35:4). The base diameter of a limestone horn from the same area is at least 9.5 cm. Artisans' marks, such as a blossom, a bird, and an arrow-shaped symbol, appear on the bases (Fig. 11).

#### MISCELLANEOUS OBJECTS

Plate 42 illustrates various specimens of metal, stone, blue composition, bone, and possibly ivory, which were parts of furniture, boxes, structural woodwork, and the like, and objects which were applied to such devices in some decorative manner. Ornamental gold strips such as Nos. 1 to 3, and even the large curved gold band No. 6, actually belong to the group of possible inlays or overlays which are shown on Plate 41 (see p. 72). A gold hook (No. 4) may have been one of many used for the suspension of valued fabrics, and a gold cap (No. 5) was perhaps the finial of a staff. Heavy gold bands, such as a rosette-ornamented specimen (No. 7) and particularly a plain band with scalloped molding (No. 9), may have been applied to wood or stone.<sup>51</sup> There are two additional though smaller specimens like No. 8, a gold rod of problematical use. A roughened gold-plated piece of silver wire may also be mentioned in this connection. It is interesting to note parenthetically that at Persepolis all categories of objects made of precious metals are represented by far more specimens of gold than of silver.

A gold-filled bronze rod (No. 10) is unique, as is a combination of lead with gold leaf (No. 11). In addition to fragment No. 12 there are five iron pieces partly covered with gold foil. The design of a lapis lazuli molding (No. 13) is marred by three drill holes. There are many plain and patterned fragments of bronze bands and the like, but the lozenge design of No. 14 occurs only once on such an object. Band No. 15 illustrates nine fluted fragments. The shape of a molded rod of bronze (No. 16), once perhaps attached to some piece of furniture, is unique.

Three small bone fragments were found in addition to specimens Nos. 17 to 19, namely, a plain molding similar to No. 16, a curved object with vague incised design, and a thin rod decorated with ridges and showing traces of gold foil overlay (cf. also Pl. 41:1a-b). Knobs 20 and 21 are unique.

Altogether, ten fragments of bronze bands like No. 22 occurred. All but one are decorated with twelve-petaled rosettes close in form and size to the rosettes of the sample specimen. The one exception shows a narrower band with smaller, pointed rosettes. All presumably had been fastened to woodwork. There are also eleven individual rosettes, some fragmentary, of various forms. They may have been used for a purpose similar to that of the bands.

44. For the appearance of true lapis lazuli units of somewhat similar shape combined to form the beard of a golden bull's head see C. Leonard Woolley, *The Royal Cemetery* ("Ur Excavations" II [London, 1934]) Pl. 107.

45. *A Second Series of the Monuments of Nineveh* (London, 1853) Pl. 55:1.

46. *Ibid.* p. 7.

47. *Ibid.* Pl. 55:5 and p. 7.

48. For mention of a plane tree of gold, see Herodotus vii. 27.

49. See Vol. I 183.

50. Among the objects excavated by Herzfeld at Persepolis and now in the Oriental Institute Museum there are several dark gray polished limestone fragments of such horns (e.g. Nos. A 24084-85), in addition to two finely wrought polished ears of bulls or man-bulls (Nos. A 24080-81; cf. reconstructed man-bull capital of Council Hall in Vol. I, Fig. 55).

51. Cf. clues for overlaid ornaments in doorway reliefs of the king (and the crown prince, where shown) when he is represented in formal attire: in the Council Hall (Vol. I 116), in the Throne Hall (*ibid.* p. 133), in Darius' palace (*ibid.* p. 226), and in Xerxes' palace (*ibid.* p. 242).

These rosettes have the following number of petals: sixteen (2, and 1 doubtful), fourteen (1), thirteen (2 doubtful), twelve (3, and 1 doubtful), eight (1). In addition there is a fragmentary row of at least three tangent rosettes. The one complete unit has fourteen petals. There is, furthermore, a fragmentary bronze rosette with twelve or more petals, its obverse coated with traces of gold foil. Three perforated bronze disks (diameters: 58, 68, 9 mm.), without decoration, may also have served as applied ornamental units.

Two more, but smaller, fragments of heavy bronze moldings like Nos. 23 and 24 occurred in Room 10 of the Apadana. Depressions with scalloped outline mark all four pieces. One of the small fragments has additional rec-

If the rounded end of No. 26, which has the shape of a modern doorknob, were spheroid instead of hemispherical we would identify it as the butt of a lance such as is shown on all reliefs of lance-bearing guards.<sup>54</sup> Fragment No. 27 belongs to a peg apparently identical in form and material with inscribed specimens of Darius and Xerxes (see p. 50 and Fig. 4). It is possible that these objects were simply driven into a wall as ornaments after the fashion of Assyrian prototypes. The find-conditions of our pegs give no further clue as to their original locations.

Objects Nos. 28 and 29<sup>55</sup> were presumably parts of furniture. Object No. 30 is an ornamental brace for an angular section of some piece of woodwork. Numbers 31 to 34 encased, wholly or in part, legs of pieces of furniture or

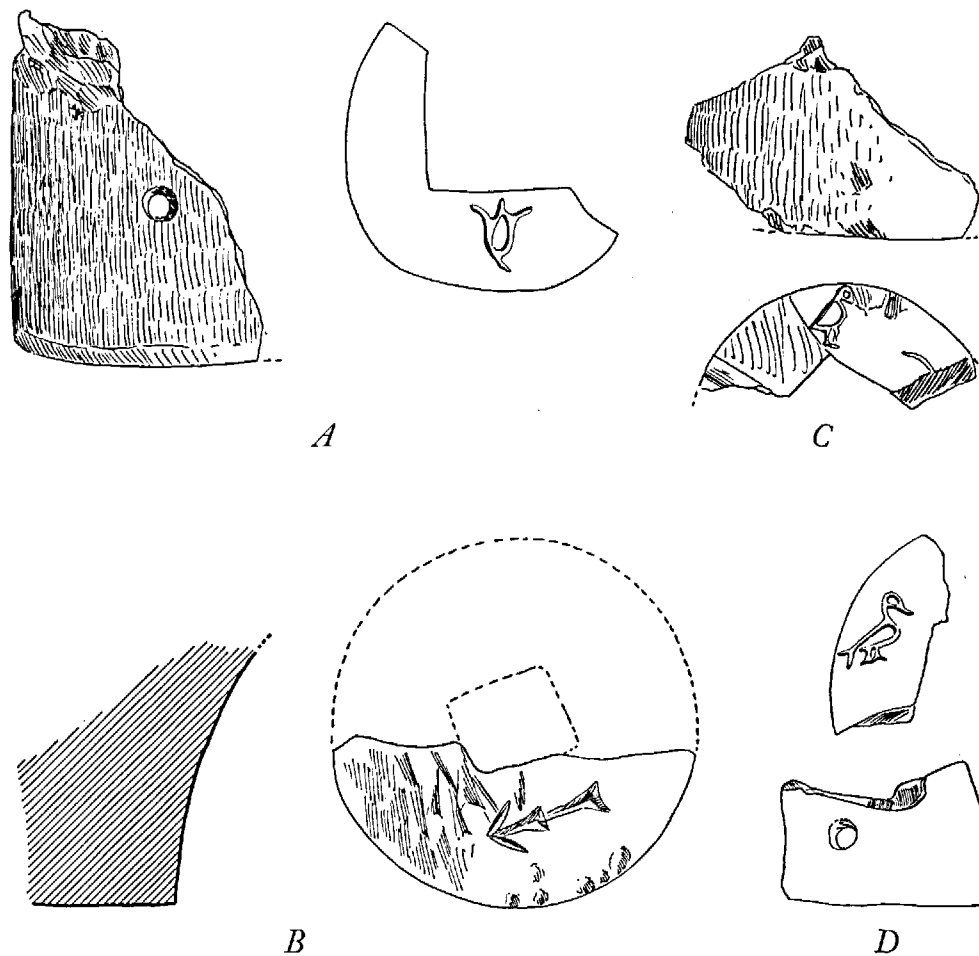


FIG. 11. HORN FRAGMENTS OF BLUE COMPOSITION (A, PT5 834; C, PT5 833; D, PT5 832), FROM ROOMS BENEATH PALACE D, AND GRAY LIMESTONE (B, PT5 372), FROM REFUSE OF PALACE D. SCALE, 1:2

tangular cuts inside the scalloped depression. There is no doubt that the depressions were inlaid with rosettes of some other material. The massive terraced fragment (No. 24) would be suited for a cornice, or the like, but the find-circumstances suggest that all these pieces were parts of heavy furniture.<sup>52</sup>

A bronze sheet fragment decorated with a star pattern in the same manner as No. 25 occurred in Alcove 10 (Plot HG 86) of the garrison quarters. This fragment too has perforated circlets at the points of the outer star. A circular hole forms the center from which all points radiate. One preserved edge is perforated in the same manner as the illustrated fragment. In both cases the star design seems to have twelve points.<sup>53</sup> In addition, twenty-two sheet fragments were found at various locations. Some have traces of designs, others are plain, and several specimens have perforated edges.

52. See *ibid.* p. 75.

poles. There is one more fragment almost identical with No. 31. Number 32 is unique, while some fragments of bronze sheeting may have belonged to casings such as Nos. 33 and 34.

The nails and tacks illustrated by Nos. 35 to 44 were used to fasten ornamental sheeting, and the like, to doors and furniture. Again, rows of nails or tacks may have

53. At Susa a strikingly similar piece of bronze sheeting with twelve-pointed star pattern was discovered near a pivot stone of one of the gates of the fortification. Perrot and Chipiez illustrate the fragment as it was found (*Histoire de l'art V*, Fig. 353). Dieulafoy, noting that it was attached to a piece of wood and concluding, correctly we believe, that it was a portion of the metal revetment (in three layers?) of the gate, reconstructed the adjacent portions (*L'Acropole de Suse*, Fig. 129). Whereas the thin (ca. 4 mm.) sheets found at Persepolis were decorative overlays on doors or other woodwork, the substantial bronze plate (2.5 cm. thick) uncovered at Susa protected the exterior face of the fortress gate against enemy action (*ibid.* p. 238).

54. E.g. Vol. I, Pl. 22.

55. Number 29 (find-spot questionable) may be post-Achaemenian.



formed ornamental borders or even more elaborate designs. The following frequency table, based on the excavations from 1935 to 1939, indicates that plain and gold-capped bronze nails were preferred to others.

No.	Description	Total Number of Specimens
35	Bronze nail, large head	3
36	Iron nail, large head	1, possibly more (badly corroded)
37-38	Gold-capped bronze nails	64, some specimens entirely covered with gold foil
39	Gold rosette on bronze shaft	4
40	Silver-capped bronze nail	6
41	Gold nail	2
42	Gold tack	27
43	Silver nail	5, plus 2 gold-capped silver nails
44	Bronze nail	Approximately 150

Figure 12, finally, illustrates an example of several slabs of gray limestone, usually square, the polished top bearing

a twelve-petaled rosette inclosed by plain circles in a square frame. The sample specimen, excavated by Herzfeld (find-spot unknown to us), has three additional polished rosettes on one edge. Parts of the three other edges were prepared in such a fashion that the upper portion of the stone would tightly abut adjacent stones. None of the rosette stones uncovered by us was found in its original position.<sup>56</sup> Thus, we are unable to corroborate Herzfeld's statement that they were used "under the pivot-stones of all the doors, hidden from sight and with face downwards, i.e. facing the 'lower world.'"<sup>57</sup>

56. See Vol. I 72, 74, 192, 262 and Figs. 37 E, 81 E.

57. *IAE*, pp. 233 f. and Fig. 334.



A



B

FIG. 12. GRAY LIMESTONE SLAB ORNAMENTED WITH ROSETTES (ORIENTAL INSTITUTE MUSEUM NO. A 24075). SCALE OF A, 1:5

## PERSONAL ORNAMENTS

In this chapter we are dealing with the following groups of objects:

- Beads, pendants, spacers (Pls. 43 and 44:1-27)
- Eye stones (Pl. 44:28-39, Fig. 13)
- Fabric ornaments (Pl. 45:1-17, Fig. 14)
- Buckles (Pl. 45:18-19)
- Buttons (Pl. 45:20-26)
- Earrings (Pl. 45:27-33)
- Finger rings (Pl. 45:34-40)
- Bracelets (Pl. 46:1-4, Fig. 16)
- Clasps (Pl. 46:5-6)
- Pins (Pl. 46:7-25)

The beads and eye stones described on pages 57-58 are distinguished from the specimens classed as personal ornaments solely by their inscriptions, which mark them as votive objects. Some inlays and similar objects illustrated on Plate 41 may have been parts of jewelry. Signet rings are described in the chapter on "Seals and Seal Impressions" (see pp. 46 ff. and Pls. 17-19).

As usual, most of the objects with which we are here concerned occurred in the debris of the Treasury, where, to judge by the frequency of specimens lost or discarded during the pillage, great quantities of personal ornaments must have been stored. Since the royal storehouse was a depository for ancient spoils as well as for contemporaneous treasure, only ornaments whose form or decoration provides specific clues are attributable to the Achaemenian period. However, because of the thorough destruction of the building, we may state quite definitely that except for freak intrusions no ornaments from the Treasury are later than the Achaemenid era. This dating is valid for any ornaments found at other points of the Terrace which were covered by a protective layer of debris. Clues suggesting a pre-Achaemenid date for certain specimens will be pointed out below.

The most elaborate examples of beads and pendants are gold ornaments decorated with granulations or inlaid with other substances. Both techniques are represented among numerous pieces of jewelry found in a well known Achaemenian burial at Susa.<sup>1</sup> For instance, our bead PT3 280 (Pl. 43:7), composed of rings of tangent globules, is almost identical with certain units of necklaces from the Susa burial.<sup>2</sup> A simpler example of the same type is illustrated by a ringlet (Pl. 43:4). Triangular fields of granules ornament the inverted conoid portion of an elaborate pendant which is composed partly of wire loops (Pl. 43:6). The pattern of another pendant includes individual granules (Pl. 43:5), whereas a cluster of minute granules forms a rosette on one of the beads (Pl. 43:13).

The interesting but enigmatic decorative motif appearing on bead PT4 544a (Pl. 43:10) is repeated in the patterns of inlaid buttons and spacers from the Susa burial.<sup>3</sup>

1. See J. de Morgan, "Découverte d'une sépulture achéménide à Suse," *MDP VIII* (1905) 29-58.

2. Cf. *ibid.* Pl. VI and Figs. 81-82.

3. *Ibid.* p. 51, Figs. 79-80, and Pls. IV-V.

The most distinctive feature is an irregularly forked dividing wall flanked on the Susa buttons by turquoise inlays. The Persepolis bead may have had the same arrangement, but only one turquoise unit is preserved. The lunate third compartment of the "cloisonné" design is inlaid at Susa with lapis lazuli and at Persepolis with a yellow stone. Inlaid segmented globes with framework of gold are represented at both Persepolis and Susa. Beads from the latter site show segments of turquoise, lapis lazuli, and carnelian.<sup>4</sup> The inlays of one Persepolis specimen (Pl. 43:9) consist of alternating units of lapis lazuli and turquoise, and a second globe (Pl. 43:8) apparently had alternating segments of lapis lazuli and yellow (discolored?) frit.

It has been pointed out that the techniques employed in the elaboration of the ornaments concerned had been known long before the Achaemenid era.<sup>5</sup> However, the close similarity of certain granulated and inlaid Persepolis specimens to ornaments from the Susa burial attributed by associated coins (and by the absence of later objects) to the end of the Achaemenid period<sup>6</sup> strongly suggest that the Persepolis ornaments too are examples of Achaemenid jewelry.

The remaining beads, pendants, and spacers from Persepolis illustrated on Plates 43 and 44:1-27 and listed in Table III could have been made in Iran or elsewhere, during the Achaemenid era or during preceding periods. For instance, white-patterned etched carnelian beads, such as Nos. 14 and 17 on Plate 43, were found in the prehistoric Tepe Hissar III stratum.<sup>7</sup> In the same stratum occurred also numerous well wrought chalcedony (onyx or agate) specimens,<sup>8</sup> similar in form to some of our beads (e.g. Pls. 43:20-22 and 44:11-13). As to the objects consisting of the substance which we call "composition" (see section on "Egyptian Blue," pp. 133 ff.), blue specimens are relatively rare and the ornaments of green composition may be either discolored "Egyptian blue" or a similar compound (see p. 135, n. 9) or opaque red glass (see pp. 130 ff.) completely covered with a green layer. Green-surfaced beads of opaque red glass occur rather frequently, but a few specimens are monochrome red. To judge by datable sculptured objects made of blue (or bluish-green) composition, ornaments consisting of this compound substance may have originated in pre-Achaemenid Egypt or Mesopotamia (cf. pp. 68 and 72 f.). Again, blue composition pegs bearing inscriptions of Darius and Xerxes indicate that the ornaments too may have been manufactured during the Persepolitan era (cf. pp. 72 f.), in native or foreign localities so far undefined.

4. *Ibid.* p. 49, Fig. 77, and Pl. VI 1.

5. *Ibid.* pp. 49 f.; see also David Talbot Rice, "Achaemenid jewelry" in Pope, *Survey I* 377-82.

6. See *MDP VIII* 37 f. and 57.

7. See Erich F. Schmidt, *Excavations at Tepe Hissar, Damghan* (Philadelphia, 1937) p. 223.

8. See *ibid.* e.g. Pls. XXXV and LXVI-LXIX.





A common Egyptian talismanic ornament, the sacred eye or eye of Horus, is illustrated by one of two examples found at Persepolis (Pl. 43:3). We may assume that these objects were a part of the Persians' booty from the Nile Valley.<sup>9</sup>

Apotropaic qualities were undoubtedly attributed to our next group of ornaments, which we call "eye stones" (Fig. 13 and Pl. 44:28-39). They are circular, oblong, or ovate and usually cut from layered pieces of onyx or sardonyx in such fashion that a brown or red-brown, often projecting center (the "iris"), is inclosed by a white or bluish-white frame. In Iran similar ornaments were known as early, at least, as the Hissar III period.<sup>10</sup> Some Persepolis

objects may have been units of inlay work such as numerous specimens (not included in Table IV) found together with inlay units among the remnants of an elaborate mosaic object (see p. 71 and Pl. 40:3).

The ornaments illustrated by Nos. 1-13 on Plate 45 (see also Table V) are small gold objects provided as a rule with perforations or loops which indicate that they were sewn to garments or other fabrics.<sup>10b</sup> These ornaments are quite similar to certain theriomorphic, floral, and geometric bracteates or inlays dealt with in the discussion of applied ornamentation (p. 72). Our attached ornaments include two miniature lions of gold. Both were found in the debris of the Treasury, but one animal (Fig. 14 B) is

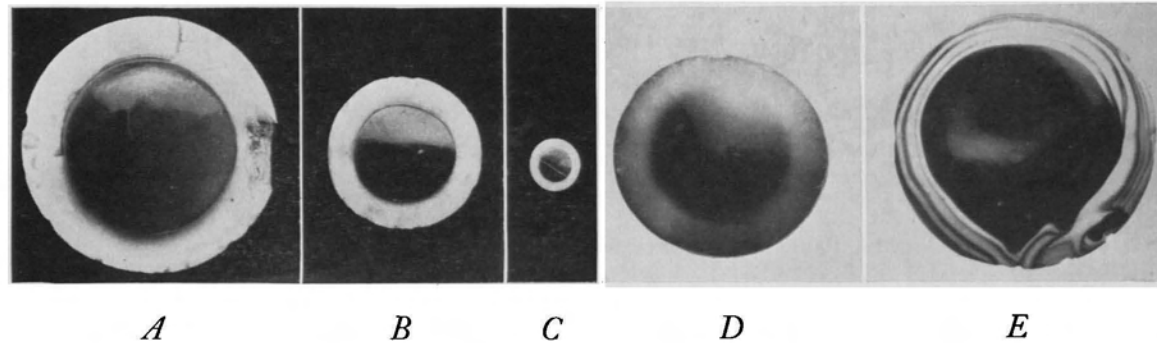


FIG. 13. EYE STONES. ACTUAL SIZE

	Field No.	Find-Spot	Material	Remarks
A	PT5 143	Harem, N. service quarters, Room 8, Plot HF 23	Orange and white sardonyx, top polished	Circular; orange center raised, diametric perforation
B	PT5 324	Treasury, Hall 41, floor, Plot HG 40	Brown and white onyx, top polished	Circular; brown center raised, diametric perforation
C	PT5 332	Throne Hall, portico, Plot GF 24	Orange and white sardonyx, top polished	Circular; small, orange center raised, not perforated, side not beveled
D	PT5 285	Throne Hall, N. courtyard, Plot GF 23	Brown and grayish-brown onyx, one face polished	Circular, biconvex; dark center flush with rest, diametric perforation
E	PT5 483	Treasury, Room 40, Plot HG 12	Dark brown and bluish-white onyx, top polished	Circular, biconvex; top has irregular profile, diametric perforation

specimens too may be local products, but most of them were probably spoils from the western lowland, for quite a number of eye stones found in the Treasury—where most of these objects occurred—bear inscriptions of Babylonian and Assyrian kings dedicating the ornaments to Mesopotamian deities (see p. 58). Diametrical perforations in certain specimens indicate that they had been strung on cords in the manner of beads or pendants, whereas the unperforated eye stones with beveled edges and (in some instances) grooved bases had been set in devices such as the bronze brooches illustrated on Plate 45:14-17 (see p. 78). The settings for eye stones with royal inscriptions were presumably made of gold (see p. 56). The bronze brooches were sewn to fabrics of some kind as suggested by holes piercing their concave centers, in which the stones rested.<sup>10a</sup> Only twenty-one eye stones are perforated for suspension. Most objects of this group (122 pieces, including all but one of the inscribed specimens) are unperforated (see Table IV) and have the features of set stones as explained above. Again, quite a few of these

9. For a similar (fayence) "uchat" (of the 23d dynasty) see Horace C. Beck, *Classification and Nomenclature of Beads and Pendants* (Oxford, 1928) p. 34 and Fig. 28 A.3.a.

10. See Schmidt, *op. cit.* Pl. XXXV.

10a. Obviously, thread had to be passed through the perforation before the stones were set. It is conceivable, of course, that the brooches were worn as pendants.

modeled in the characteristic fashion of the lions shown on the Persepolis reliefs,<sup>11</sup> whereas the second specimen (Fig. 14 A and Pl. 45:1) appears to represent a foreign, perhaps pre-Achaemenid style. As to the puzzling design of the

TABLE IV  
FREQUENCY OF EYE STONES ACCORDING TO FORM AND MATERIAL (SEE PL. 44)

MATERIAL	FORM						TOTAL
	Plano-convex circular or oblong (e.g. Nos. 28-35 and Fig. 13)		Plano-convex ovate (e.g. No. 39)	Biconvex circular (e.g. No. 36)	Concavo-convex circular (e.g. Nos. 37-38)		
	Perforated	Unperforated	Unperforated	Perforated	Perforated	Unperforated	
Chalcedonies*	16†	98‡	4	3	2	5	128
Calcareous stone		7	5			1	13
Frit		1					1
Composition		1					1
Total	16	107	9	3	2	6	143

\* Onyx and sardonyx.

† Including 1 inscribed specimen.

‡ Including 7 inscribed specimens.

10b. For an instructive study dealing with fabric ornaments of gold, such as rosettes, miniature lions, etc., see Oppenheim, "The golden garments of the gods," *JNES* VIII 172-93.

11. Cf. Vol. I, e.g. Pl. 99.

## OBJECTS FROM THE PERSEPOLIS TERRACE

ornament illustrated on Plate 45:2, it seems to us that its closest parallel is a Scythian bird's head of bone from the Kuban district.<sup>12</sup> The two twelve-petaled gold rosettes illustrated on Figure 14 *D-E* are examples of six specimens which were lost during the pillage on the stairs near the northern exit of the Treasury.<sup>13</sup> Three rosettes correspond in size to the larger example and the rest to the smaller one.

The purpose of the brooches, which are framed by beaded borders (Pl. 45:14-17), has been explained above. Alone, their sizes, their depressed centers, and their shapes

indeterminate substance (Fig. 15 *A*), whereas other parts—without beads—adhered to lumps of soil (Fig. 15 *B*). There can be little doubt that these spiraled pieces of thread are remnants of gold-embroidered fabrics, garments presumably, to judge by the presence of beads, but they hint at the manner of embellishment of the impressive patterned canopy above the king's throne.<sup>15</sup> On the other hand, certain units of the canopy designs—such as the files of lions and bulls—may well have consisted of applied figures of solid gold sheets.<sup>16</sup>

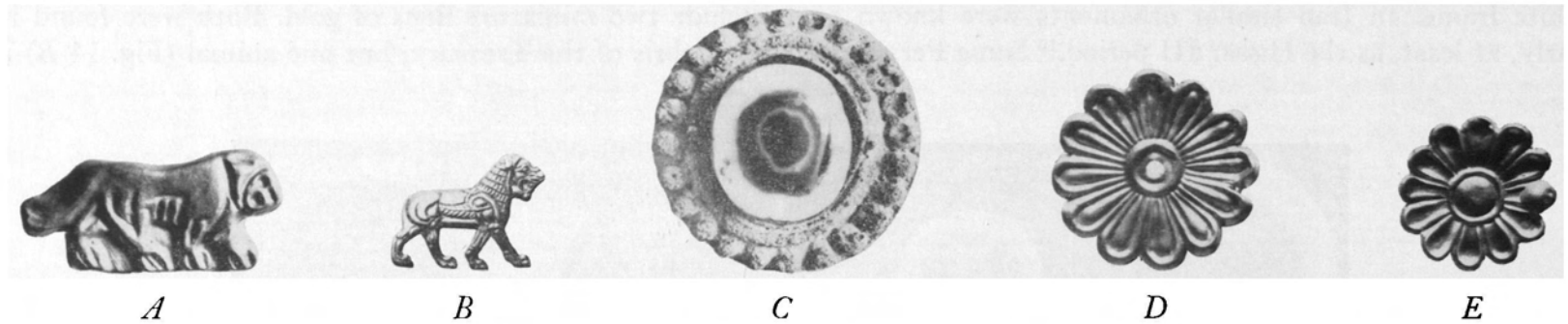


FIG. 14. FABRIC ORNAMENTS. SCALES, 2:1 (*A-B*) AND 1:1 (*C-E*)

	Field No.	Find-Spot	Material	Remarks
<i>A</i>	PT6 704	Treasury, Hall 41, refuse	Yellow gold	Stylized lion; two loops on reverse (see Pl. 45:1)
<i>B</i>	PT6 694*	Treasury, Room 77, NE. corner, floor, Plot IG 22	Yellow gold	Lion; wrought in Achaemenid style
<i>C</i>	Unknown	Unknown	Onyx and bronze	Eye stone set in circular brooch with beaded rim
<i>D-E</i>	PT6 717*	Treasury, Stairway 49, top of N. wall, Plot HG 00	Yellow gold	Two (of six) 12-petaled rosettes

\* Removed to Tehran prior to completion of our records.

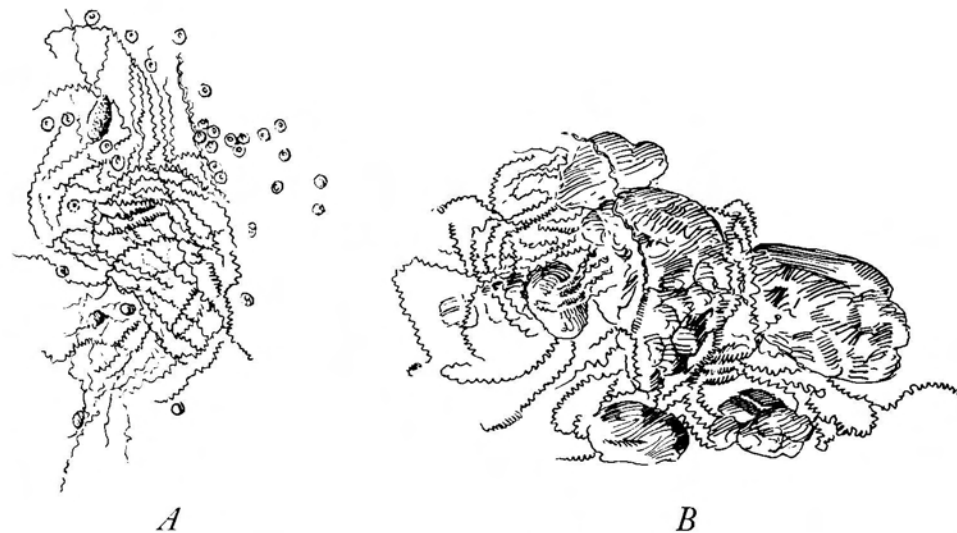


FIG. 15. TWISTED YELLOW GOLD THREAD (PT6 365) WITH SCORCHED SPHEROID BEADS (*A*) AND LUMPS OF SOIL (*B*), FROM TREASURY, FLOOR OF HALL 41 (PLOT HF 89). SCALE, 3:4

corresponding to those of the circular, oblong, and ovate eye stones strongly suggest that these brooches were settings for the stones. The final proof was furnished by one of Herzfeld's photographs (Fig. 14 *C*), showing an eye stone actually mounted in such a device.<sup>14</sup>

With the objects of personal adornment we have to include bundles of fine twisted gold thread, parts of which were intermixed with small scorched spheroid beads of

Buckles (Pl. 45:18-19) and buttons (Pl. 45:20-26) could have been grouped with either utensils or objects of military equipment, but specimens such as the buckle cast in the form of a twenty-petaled rosette (No. 18; actually found in the garrison quarters) and buttons of gold (Nos. 20-21) and gold-coated bronze (No. 22) induced us to classify both groups as personal ornaments (see Table V).

12. See Gregory Borovka, *Scythian Art*, trans. V. G. Childe (New York, 1928) Pl. 32 *D* and pp. 64 f., 74.

13. See Vol. I 186.

14. Field number and find-spot not ascertainable.

15. See Vol. I, e.g. Pl. 99. For textual references to the use of beads in

garment decoration, see Oppenheim, *op. cit.* p. 189. We believe that our bundles of gold thread from the Persepolis Treasury prove the existence of gold-embroidered textiles during the Achaemenid period (*cf. ibid.* pp. 189 f.).

16. Cf. the Oriental Institute Museum booklet, *Iranian Art*, designs by Sue Richert, text by Carl H. Kraeling and staff (Chicago, 1951) pp. 10-13.

Earrings are represented not only by actual examples (see Pl. 45:27-33 and Table VI) but also by the plain large rings worn by soldiers and dignitaries in the Persepolis reliefs<sup>17</sup> and by elaborate pendants such as those, for instance, of the man-bull capitals in the Council Hall.<sup>18</sup> Because of the pillage of the site and the absence of graves and burial equipment, our collection of ear ornaments (and other metal objects of personal adornment) is small and unrepresentative. There is no reason to assume, for instance, that there was a greater variety of jewelry in pre-Achaemenid Assyria.<sup>19</sup>

Purely ornamental finger rings too are represented by modest examples only (see Pl. 45:34-40 and Table VI). The only rings of a characteristic shape are the above-described signet rings with elliptical sealing surface and three-quarter hoop (see p. 46).

clude examples of torques, which frequently ornament the necks of dignitaries in the Persepolis reliefs.<sup>22</sup>

The manner of use of the fibulae shown on Plate 46 (Nos. 5-6) is illustrated by the garment clasps with curved bows worn by the Cappadocian(?) delegates of the Apadana procession.<sup>23</sup> Fibulae with curved bows probably prevailed in other parts of the empire. Nevertheless, it is interesting to note that all specimens found at Cappadocian Alishar in debris of the second half of the 1st millennium B.C. have curved, that is, "nearly semicircular," bows.<sup>24</sup> At Persepolis we found two clasps with curved bows and two with angular ones.

Our collection of pins and pinheads includes few decorative specimens (see Pl. 46). One bronze pin (No. 7) terminates in the head of a horned, presumably bovine, animal, and a second theriomorphic pinhead (No. 8), made of tur-

TABLE V  
FREQUENCY OF FABRIC ORNAMENTS, BUCKLES, AND BUTTONS ACCORDING TO FORM AND MATERIAL (SEE PL. 45)

MATERIAL	FORM															TOTAL			
	Lion effigy (No. 1 and Fig. 14 A-B)	Problematical symbol (No. 2)	Rosette, solid (e.g. No. 3 and Fig. 14 D-E)	Rosette, open (Nos. 4-5)	Rosette, composite (Nos. 6-7)	Palmette (No. 8)	Trapezoid (No. 9)	Lozenge (No. 10)	"Triangle" (No. 11)	Disk (No. 12)	"Garland" (No. 13)	Circular brooch (e.g. Nos. 14-15 and Fig. 14 C)	Ovate brooch (No. 16)	Oblong brooch (No. 17)	Conoid buckle, rosette (No. 18)		Conoid buckle, plain (No. 19)	Concavo-convex button (e.g. Nos. 20-25)	Plano-convex button (No. 26)
Gold	2	1	7	1	2	1	1	1	1	1									53
Bronze				1								9	1	1	1	1			21
Bronze with gold foil																			1
Chalk?																			1
Bone																			2
Total	2	1	7	2	2	1	1	1	1	1	9	1	1	1	1	44	1	78	

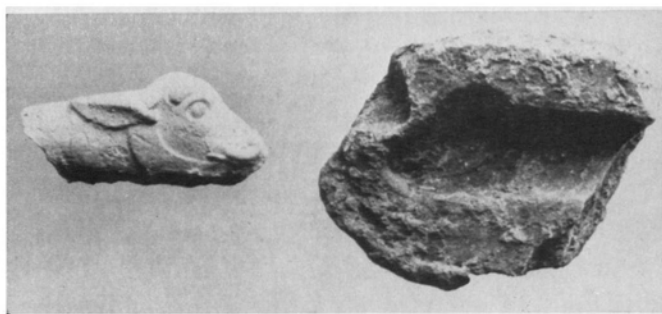


FIG. 16. FRAGMENT OF MOLD FOR BRACELET (PT4 585; SEE PL. 46:1), WITH MODERN CAST. ACTUAL SIZE

Our illustrations of bracelet fragments (Pl. 46:1-4) include a piece of a clay mold (No. 1 and Fig. 16) the cast of which shows the neatly modeled head of a bovine or similar animal. A bronze fragment too ends in an animal head (No. 2). We found only two other, simple, types, represented by a bracelet of twisted wire (No. 3) and three specimens of plain bronze wire (e.g. No. 4). For elaborate bracelets we have to turn to the tribute reliefs of the Apadana, where the most striking specimens—terminating in the anterior parts of griffins—are offered by the Syrian delegation.<sup>20</sup> Similarly decorated bracelets are included in the Oxus Treasure.<sup>21</sup> Our collection of objects does not in-

clude examples of torques, which frequently ornament the necks of dignitaries in the Persepolis reliefs.<sup>22</sup> The triangular depression in the forehead had presumably been inlaid in the same fashion as the heads of the swan handles of one of Xerxes' granite plates (see p. 88, Pls. 53:1 and 54:1). Double-scroll heads like that of

TABLE VI  
FREQUENCY OF EARRINGS AND FINGER RINGS ACCORDING TO FORM AND MATERIAL (SEE PL. 45)

MATERIAL	FORM													TOTAL										
	Earrings						Finger Rings*																	
	Perforated disk (e.g. No. 27)	Ring-disk-palmette (No. 28)	Open ring with globules (No. 29)	Open ring with bell (No. 30)	Open ring with loop (e.g. No. 31)	Spiral wire (e.g. Nos. 32-35)	Elliptical bezel (No. 34)	Lozenge-shaped bezel (No. 35)	Circular bezel (No. 36)	Multiple, ribbed (e.g. No. 37)	Twisted wire (No. 38)	Plain (e.g. Nos. 39-40)												
Gold																								
Silver	1			1	2																			
Bronze					1																			
Bronze and stone						4					1	1												
Lead	2	1	1																					
Total	3	1	1	1	3	4	13	1	1	1	2	1	13	19										

\* For signet rings see pp. 46 ff. and Pls. 17-19.

21. See Dalton, *The Treasure of the Oxus* (2d ed.) Pls. I and XVII-XX; see also Rice in Pope, *Survey I* 377-82 and IV, Pls. 121-22; further, Georg Pudelko, "Altpersische Armbänder," *AOF IX* (1933-34) 85-88.

22. See Vol. I, e.g. Pls. 51-52.

23. *Ibid.* Pl. 35.

24. See H. H. von der Osten, *Researches in Anatolia. IX. The Alishar Hüyük, Seasons of 1930-32, Part III (OIP XXX [1937])* p. 110 and Fig. 106.

17. See Vol. I, e.g. Pls. 87 and 121.

18. See *ibid.* Fig. 55.

19. Cf. e.g. Moortgat, "Der Ohrschmuck der Assyrer," *AOF IV* (1927) 185-206.

20. See Vol. I, Pl. 32, and *IAE*, Pl. LXXXIV, upper right.

## OBJECTS FROM THE PERSEPOLIS TERRACE

TABLE VII  
FREQUENCY OF PINS ACCORDING TO HEAD FORM AND MATERIAL (SEE PL. 46)

MATERIAL	HEAD FORM													TOTAL			
	Theriomorphic (Nos. 7-8)	Globular (No. 9)	Globular with knob (No. 10)	Semiglobular (No. 11)	Flat circular (No. 12)	Rounded (e.g. No. 13)	Spatulate (Nos. 14-16)	Double scroll (No. 17)	Collared biconvex (No. 18)	Collared biconvex, rosette design (No. 19)	Convex conoid (Nos. 20-21)	Biconoid (No. 22)	Pyramiform, inverted (No. 23)		Segmented (No. 24)	Bifurcate (No. 25)	
Bronze	1		1	1	1		1	1							1	1	8
Lead							1										1
Turquoise	1																1
Serpentine										1?			1				2?
Bone						2		1		1							4
Glass		1									1						2
Opaque red glass with green surface											1	1					2
Total	2	1	1	1	1	2	3	1	1	1	2	1	1	1	1	1	20

pin No. 17 (made of a silver-copper alloy<sup>24a</sup>) first occurred during the prehistoric Hissar II period,<sup>25</sup> whereas the twelve-petaled rosette, engraved on a serpentine(?) pin-head (No. 19), is a common decorative unit on Persepolis reliefs and other objects. As to the materials used for certain pinheads (see Table VII), a large pyriform specimen (No. 23) is made of green serpentine;<sup>26</sup> two heads (Nos. 9 and 20) are of blue glass, now covered with an iridescent film; and two specimens (Nos. 21-22) are of opaque red glass with green surface (see pp. 130 ff.).<sup>27</sup>

24a. For spectrographic analysis see Table XIV (p. 136).

25. See Schmidt, *Excavations at Tepe Hissar*, p. 119 and Pl. XXIX (H 4856).

26. As determined by Mrs. Hans Ramberg.

27. In contrast to the transparent colorless substance of most glass vessels found in the Treasury (see p. 91) the glass pinheads and beads (see Pl. 43:16, 30, 45, 53) show—in addition to red (with or without green surface)—green, blue, or bluish-green shades.



## ROYAL TABLEWARE

### VESSELS OF STONE AND COMPOSITION

#### INTRODUCTION, FIND-CONDITIONS

Vessels inscribed with the names of Achaemenian and foreign rulers leave no doubt that they were intended for the use of the king. Thus, "royal tableware" is an appropriate term, and it does not exclude the possibility that some vessels may have been used for purely decorative purposes and others intended as royal gifts. On the king's table, no doubt, plates, bowls, pitchers, and goblets of precious metals—none of which were found—were preferred for everyday use and most certainly on voyages, in peace and in war. With regard to the noninscribed vessels, the following features convinced us that they too were meant for the king's table: the beauty of form and material, combined in many cases with excellent workmanship; the close similarity in form of many inscribed and non-inscribed vessels; and, finally, the fact that both groups of vessels had been stored in the same halls of the Treasury. The astonishing quantity of vessels suggests that they were used for royal banquets.<sup>1</sup> For reasons of convenience we include in this chapter cosmetic vessels which are not "tableware" in the strict sense of the word although their contents were presumably used before and after repasts.

When pondering over the seemingly senseless vandalism of the Macedonians, who systematically shattered more than six hundred vessels (see below), we could not avoid the conclusion that the childish pleasure of destruction was not sufficient reason for their conduct. A possible solution is suggested by the foreign votive objects, once presumably incased or set in precious metal (see p. 57). The king's tableware too may have been wholly or in part covered with gold, in such a fashion that those who wanted easily portable and negotiable plunder had to break the vessels in order to remove the desirable shell, pedestal, rim, or lining made of the precious metal.<sup>2</sup> There is a single concrete clue which gives some support to our hypothesis: a pin or rivet of gold pierces the corner fragment of an angular granite tray (Pl. 64:7). Furthermore, certain features of a bowl of Ashurbanipal strongly suggest the use of metal overlays (see p. 84).

A find-spot plan (Fig. 17) shows the distribution of the royal tableware of foreign and native origin in the halls and rooms of the Treasury. Many vessel fragments have not been entered on this plan because they were recorded according to architectural units exceeding the size of the excavation squares. For example, fifty-six additional serpentine fragments were scattered along the southern wall of Hall 38. In other instances the find-plot only was known, extending over several rooms. However, even if all fragments were placeable according to the exact find-spot,

1. See Olmstead, *History of the Persian Empire*, pp. 182 f.

2. For the sake of illustration we refer to Middle Kingdom obsidian vessels whose bases and rims are encircled by bands of gold; see Guy Brunton, *Lahun. I. The Treasure* (London, 1920) Pl. IX and pp. 36-37.

the general picture of the distribution of the tableware would not be altered materially.

It is obvious at a glance that the king's tableware had been stored in the two largest units of the Treasury, namely Halls 38 and 41. In Hall 38 the greatest accumulation of shattered vessels occurred in the central area, and particularly along the southern wall. The northeast section of Hall 41 had a similar accumulation of broken vessels, many of which had been thrown into the northeast corner. On the find-spot plan broken lines connect the scattered fragments of some specimens in order to show how far apart the pieces of certain objects were found. For instance, a roughly trapezoid figure connects the pieces of the bowl of Ashurbanipal (see pp. 83 f.). Three fragments occurred in Hall 41, while a fourth lay with a pile of other broken vessels in Corridor 31 outside the eastern door of Hall 41. The hall contained most of the vessels inscribed with the name of Xerxes, while only one was found in Hall 38 and several pieces occurred in other sections of the Treasury.

There were only a few vessel fragments in the southern part of the building. The fact that Darius' name does not appear on any of the vessels discovered at Persepolis may have bearing on the almost complete absence of royal tableware in this earliest section of the Treasury, which was founded by him. The only Achaemenid ruler whose name is engraved on Persepolis vessels is Xerxes. This fact suggests that most specimens which we attribute to the Achaemenid period were made during the reign of this king, and that he had transferred all pre-Achaemenid foreign vessels uncovered by us to the central and northern halls of the Persepolis Treasury from some previous depository unknown to us.

#### PRE-ACHAEMENID FOREIGN WARE

##### EGYPTIAN VESSELS

In the battle of Pelusium (525 B.C.) Cambyses II defeated the army of Psamtik III. The Persians took Memphis and Sais, and Egypt became the satrapy Mudraya.<sup>3</sup> Whether or not we accept the stories of the atrocities of the conqueror,<sup>4</sup> there is no doubt that he appropriated the wealth of the pharaoh, and there may be a good deal of truth in Diodorus' statement that the treasure of Egypt and the skill of Egyptian artisans contributed toward the building of the palaces of Persepolis, Susa, and Media (Ecbatana presumably).<sup>5</sup> Cambyses may not have desecrated the body of Amasis, as we are told,<sup>6</sup> but there was no reason for him to hesitate in despoiling the tomb of the king whose son's scepter he usurped.

3. See Olmstead, *op. cit.* pp. 88 ff.

4. Discounted by Olmstead *ibid.* p. 89, but cf. Herodotus iii. 14 ff.

5. Diodorus Siculus i. 46.

6. Herodotus iii. 16; Diodorus Siculus x. 14.

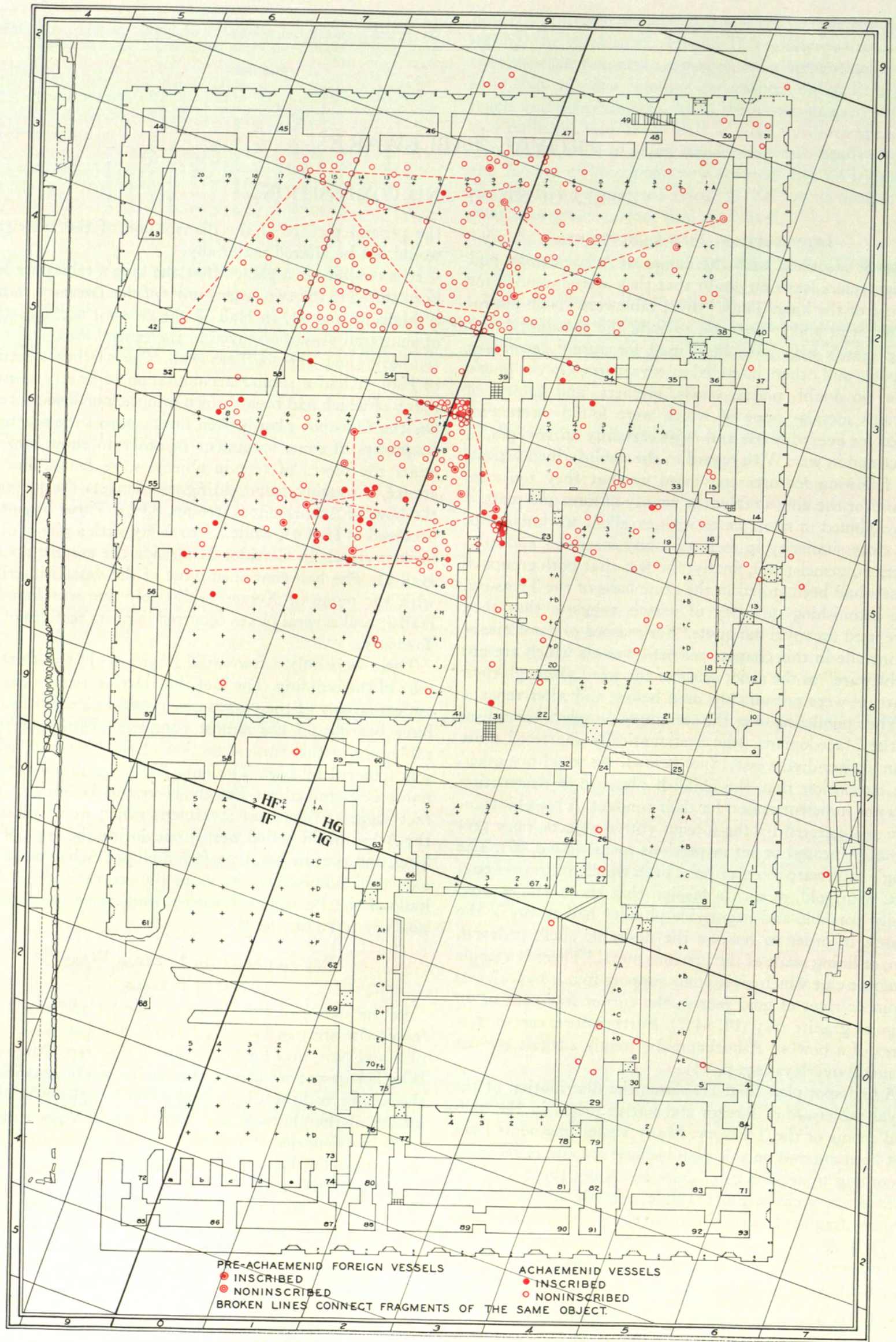


FIG. 17. FIND-SPOTS OF ROYAL TABLEWARE OF STONE AND COMPOSITION IN TREASURY. SCALE OF PLAN, 1:500  
(ALL OBJECTS SHOWN AT EXAGGERATED SCALE)

In any event, booty from Egypt, taken most probably by the first Achaemenid conqueror, is represented among the remnants of the contents of the Persepolis Treasury by a substantial number of objects bearing the names of kings who ruled Egypt before Persepolis was founded (between 520 and 511 B.C.).<sup>7</sup> All datable objects of this group belong to the Saite period, and the names of all kings appearing on them are those of rulers of the 26th dynasty, which ended with the Persian conquest. These rulers are Psamtik (Psammetichus), Nekau (Necho),<sup>8</sup> and Amasis (Ahmose II).

The only object bearing the name of Psamtik is a lid of calcareous stone (Pl. 48:1), which is attractively ornamented in low relief with the symbols of Upper and Lower Egypt—lotus and papyrus respectively. According to Hughes, the remnant of the engraved inscription flanking the handle reads: "Son of Re: 'Psammetichus,' living eternally." Hughes further comments: "The inscription was certainly balanced on the other side of the lid by the king's prenomen in a cartouche, which would have identified him." This king may be Psamtik I (663–609 B.C.), the father of Nekau (see below), or Psamtik II (594–589 B.C.), the son of Nekau. The last(?) king of this name, Psamtik III,<sup>9</sup> the son of Amasis, ruled only about six months before he was dethroned by Cambyses II in 525 B.C. (see above). Hughes informs us that there are scarcely any objects known from the reign of Psamtik III.

Inscriptions of Nekau (609–594 B.C.) are preserved on two objects: a pedestal of blue composition (PT4 539; see p. 68) and an alabaster bowl (Pls. 47:1, 48:2). The profile of the bowl quite closely resembles that of a bowl bearing the name of Xerxes (see Pls. 51:5, 52:3), but the smaller handle aperture of the Nekau vessel is only wide enough to accommodate a cord, and the shape of its broken foot is problematical. According to Hughes the inscription reads as follows: "King of Upper and Lower Egypt: 'Wehemibre,' Son of Re: 'Nekau,' granted life like Re, living eternally."<sup>10</sup>

There are not less than five objects, of alabaster and (one) of calcareous stone, bearing inscriptions of Amasis (569–525 B.C.).<sup>11</sup> Two, or perhaps three, of these objects are parts of vessels. One appears to be a fragment of a vessel stand, and one is a part of a lid. The fragment of the assumed vessel stand (Pls. 47:3, 48:5) shows beside a floral element a cartouche which contains, according to Hughes, the prenomen of Amasis (Khnunibre) and is surmounted by two feathers with a sun disk between them.

7. See Vol. I 39 ff.

8. According to Hughes (oral information) sometimes called Nekau II.

9. There was possibly a Psamtik IV; see Henri Gauthier, *Le livre des rois d'Égypte* IV (Institut français d'archéologie orientale du Caire, "Mémoires" XX [Le Caire, 1915–16]) 132. The opinions of Egyptologists differ somewhat as to the exact durations of the kings' reigns. Consequently our dating of the reigns of the Egyptian kings is tentative.

A stone vessel bearing the name of Psamtik I is described and illustrated in von Bissing, *Steingefässe* (CC XVII [1904]) No. 18490 (pp. 97–98 and Pl. III). See Gauthier, *op. cit.* p. 75, No. XXXVII, for a bronze fragment of the same king, and p. 94, No. VI, for references to an inscribed clay plate of Psamtik II.

10. A plaster seal and a vessel handle, each bearing Nekau's cartouche, are mentioned by Gauthier, *op. cit.* p. 89, No. IX; for references to a glazed pot and fragments of alabaster vessels of Nekau see p. 91, No. XX and n. 1.

11. For references to Amasis vessels found in Egypt see *ibid.* p. 125, Nos. LII–LIII and n. 2. As to fragments of an Amasis vessel described by Jean Clédat ("Notes sur l'Isthme de Suez," *RT* XXXVI [1914] 109, No. 699), its "pâte bleue (fritte d'Alexandrie)" may correspond to the substance of our composition vessels.

Hughes comments that the red stain noticed on the lowest hieroglyph may be a remnant of original pigment, for the sign in question—the heart with severed arteries—when shown in color has red or reddish-brown shades. We do not know whether the other hieroglyphs had been filled with blue pigment, traces of which were found on the object. The same cartouche is engraved on the lid fragment (Pl. 47:5), and two hieroglyphs of the prenomen of the same king are preserved on a vessel sherd (Pl. 48:4).

The profile of plate PT5 817 (Pls. 47:4, 48:6) again resembles that of certain plates bearing Xerxes' name and title (cf. Pls. 50, 51:2, 52:1–2 and 6). Whereas the Xerxes inscription encircles the exterior wall, that of Amasis is engraved on the broad rim top. It reads, according to Hughes, "Khnunibre, living like Re, Ahmes-si-Neit."

The alabaster fragments shown on Plates 47:7 and 48:8 may belong to an elaborate composite vessel or to two vessels of a type whose original appearance is problematical.<sup>12</sup> Hughes informs us that the inscription partly preserved on the fragment which is shown on Plates 47:7*d–e* and 48:8*d* probably read as follows: "[The good god: 'Khnunibre,' Lord of the] Two Lands: 'Ahmes-si-Neit,' [given life like Re] eternally." Hughes notes that the smooth concave face of a projection on this fragment appears to have belonged to the inside wall of another vessel, which was thus part of a composite object. He remarks, further, that the vertical engraved line at the right fracture of the fragment with lion's head (Pls. 47:7*c*, 48:8*c*) may be a section of the inclosure of the inscription concerned, or it may belong to a second inscription, perhaps on the opposite side of the vessel. Another inscribed fragment (Pls. 47:6, 48:7) may have been part of the composite vessel or vessels. Hughes comments that the hieroglyph at the left is used only in the name of the goddess Neit, suggesting that the object belongs to the 26th dynasty, of which she was patron goddess. The partially preserved hieroglyph at the right is the god sign, and the thick engraved line above the inscription is presumably the sky symbol, shown above the inscription on the bowl of Nekau (see Pls. 47:1, 48:2).

An exceptionally well modeled bottle-shaped vessel with two lug handles (Pls. 47:2, 48:3) was found, shattered in many pieces, in Hall 41. The vessel was fashioned in a mold, presumably. It is the largest (67.5 cm. high) of all the objects made of the attractive blue composition substance (see section on "Egyptian Blue," pp. 133 ff.). Polished patches of the surface suggest a wash of darker blue applied over the mat surface of a core of a lighter blue shade.<sup>13</sup> We consider this vessel too as part of the booty from Egypt, and to judge by the facts that all datable objects of this group bear the names of Saite rulers and that a pedestal bearing elements of the titulary of Nekau (PT4 539; see p. 68) is made of the same blue substance, we are justified in attributing the vessel tentatively to the 26th dynasty.

#### A BOWL OF ASHURBANIPAL

An impressive sculptured vessel (Pl. 49:1), parts of which were scattered in Hall 41 and Corridor 31 of the

12. For examples of composite Egyptian vessels and lamps of fantastic shapes see Howard Carter and A. C. Mace, *The Tomb of Tut. Ankh. Amen* I (London etc., 1923) Pls. XXII, XLVI–XLVIII and Vol. II (1927) Pls. XLV–LI.

13. Again, we do not know to what extent the differences in shades were caused by the conflagration which destroyed the find-area. Also, see n. 14.

Treasury,<sup>14</sup> had once belonged to the Assyrian king Ashurbanipal, as indicated by its inscription (see below). The material is probably granite.<sup>15</sup> The four equidistant handles are fashioned in the shape of lions, which appear to cling—nostrils flush with the rim—to the shoulder of the vessel. Strips of precious metal may have been applied to narrow bands extending between the lions and terminating in pairs of holes at the sides of each animal. The lions themselves were probably covered in the same fashion, as suggested by depressions at both sides of their chests (see Pl. 49:1c-d). Two small holes in the forehead of each lion and the hollow eyes had undoubtedly been inlaid, perhaps with semiprecious stones such as turquoise or carnelian. The inscription, engraved on the exterior (see Pl. 49:1a), reads, according to Cameron, as follows:<sup>16</sup>

*ēkal*(KUR) <sup>m</sup>*aššur*(ŠAR)-*bāni*(DÜ)-*apli*(A) Palace of Ashurbanipal,  
*šarru* (20) *rab[ū šarru dannu šar]* (20) Great King, [Mighty King,  
King] of  
*kiššati*(šú) *šar* (20) *māt aššur*(ŠAR)<sup>ki</sup> Totality, King of Assyria.

We may conjecture that Ashurbanipal's bowl was in a palace or treasury of Nineveh when the Assyrian capital was taken and destroyed by the allied Medes and Babylonians in 612 B.C.<sup>17</sup> If the vessel was part of the Medes' share of the spoils it was undoubtedly taken to Ecbatana. In 550 B.C., with the fall of the Median capital, our vessel became the booty of Cyrus the Great, who took it to Pargadae, together with other "wealth of gold, silver, and precious objects,"<sup>18</sup> before it was finally deposited, presumably by Darius I or Xerxes, in the Treasury of Persepolis.<sup>19</sup>

#### A HITTITE BOWL SHERD

Another interesting piece of booty is represented by a sherd of a hematite bowl inscribed with Hittite hieroglyphs (Pl. 49:2). Professor Gelb has kindly examined the inscription and comments as follows:

There is no difficulty in recognizing the individual signs, but the fragmentary preservation of the inscription permits only partial in-

14. The distribution of the pieces is marked on Fig. 17 by a roughly trapezoid figure connecting the fragments, which were numbered PT4 368, PT5 156, and PT5 244 before it was determined that they belong to the same object. The vessel was removed from Persepolis to Tehran—together with other objects—by request of the Iranian authorities, prior to the completion of the final scrutiny and verification of the field records. Further vessels referred to in this chapter and removed to Tehran under the same circumstances are the bowl of Nekau (PT5 103), the bottle of blue composition (PT5 622), the plate of Amasis (PT5 817), a Xerxes plate with swan handles (PT5 155 etc.), a tray (PT5 726), some plates (PT6 236, PT5 129, PT5 130, and others), and a tripod bowl (PT6 528).

15. However, a sherd of similar material was defined by Mrs. Hans Ramberg as meta-gabbro, "at least as hard as granite though less brittle."

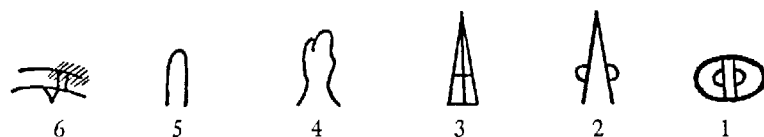
16. Professor Landsberger, who slightly modified the transliteration, tells us that this bowl inscription is a diffuse version of Ashurbanipal's standard inventory "seal" (see Maximilian Streck, ed., *Ashurbanipal und die letzten assyrischen Könige bis zum Untergange Niniveh's* ["Vorderasiatische Bibliothek," 7. Stück (Leipzig, 1916)] II 354 a, a) but observes all the orthographical peculiarities of the "seal."

17. See Olmstead, *History of Assyria*, pp. 637 ff.

18. See Olmstead, *History of the Persian Empire*, p. 37, and our Vol. I 19.

19. An Ashurbanipal vessel (of the type of our cosmetic bottles; see Pl. 65: 1, 2, 12, 13) made of Egyptian alabaster was found at Assur. It has been suggested that this vessel was a part of Esarhaddon's spoils from Sidon and that its inscription—similar to that on our vessel—was secondarily engraved by Ashurbanipal; see von Bissing, "Ägyptische und ägyptisierende Alabastergefäße aus den deutschen Ausgrabungen in Assur," *ZA* XLVI = n.F. XII (1940) 159-61 and Fig. 9. For a votive eye stone (PT4 455) bearing an inscription of Ashurbanipal see p. 58 above.

terpretation. The text—read, as usual in Hittite hieroglyphic, from right to left—includes the following signs:



These signs can be interpreted (1) "god," (2) X, (3) "the King," (4-6) "has given" (*pi-a-ti*). The reading of the god's name is unknown because the latter is expressed by a logogram commonly used in other Hittite inscriptions. The expression "has given" is somewhat disconcerting because we would expect rather the imperative "may give," that is, to supply wine, bread, prosperity, or the like. It is not possible to assign a precise date to the inscription because of its shortness. The three first signs occurred almost without any variation during the entire period of use of Hittite hieroglyphs. The fourth and sixth signs look late. The inscription may be assigned tentatively to the 8th century B.C.

It is quite certain that the vessel represented by our fragment once belonged to a ruler of one of the Hittite principalities which existed in northern Syria during the early centuries of the 1st millennium B.C. Presumably the latest possible date assignable to our object is that of the fall and pillage of Carchemish,<sup>20</sup> 717 B.C., and the capture of its last ruler, Pisisis, by Sargon II of Assyria.<sup>21</sup> At Carchemish the British excavators (C. L. Woolley and T. E. Lawrence) found fragments of two basalt vessels with Hittite hieroglyphic inscriptions.<sup>22</sup> The exterior treatment of one of the vessels, showing an apparently uninterrupted row of fingers, strangely resembles that of another vessel with Hittite hieroglyphs uncovered at Babylon.<sup>23</sup> However, the only vessel whose shape in part resembles that of our Persepolis specimen is a bowl assumedly found in the ruins of Babylon and purchased by the British Museum. A long inscription in Hittite hieroglyphs encircles the upper exterior of the hemispherical body, which rests on a hollow cylindrical foot.<sup>24</sup>

Our Hittite vessel belongs to the same category of trophies of conquest as the vessels and other objects bearing the names of kings of Egypt, Babylonia, and Assyria—trophies which were valued enough to be transported to the Treasury of the remote dynastic residence of the Persians. We cannot answer the question whether the vessel concerned belonged to spoils from Carchemish (see above) or whether it was pillaged from the treasury of one of the other North Syrian principalities which previously had fallen under the sway of the Assyrians. We may conjecture, however, that after the fall of Nineveh the route of the Hittite bowl was the same as that of the vessel of Ashurbanipal (see above).

#### ACHAEMENID WARE

##### PREVIOUSLY KNOWN INSCRIBED VESSELS

As far as we know, there are no vessels of stone or blue composition which were inscribed with the name of an

20. For a convenient summary of the history of the town and the results of excavations see Unger, "Karkamisch" in *Reallexikon der Vorgeschichte* VI (Berlin, 1926) 225-29.

21. See David George Hogarth, *Carchemish I* (London, 1914) 16; Eduard Meyer, *Reich und Kultur der Chetiter* (Berlin, 1914) pp. 7 ff.

22. Woolley, *Carchemish II* (London, 1921) Pls. A.16 e and A.18 i.

23. Andrae, *Hittitische Inschriften auf Bleistreifen aus Assur* (*WVDOG* XLVI [1924]) pp. 11 f., Pl. 8 a-e.

24. See Leopold Messerschmidt, *Corpus inscriptionum Hittiticarum* (*MVAG* V 4-5 [1900]) Nos. 3-4 (p. 3 and Pl. 1); also Helmuth Theodor Bossert, *Allanatolien* (Berlin, 1942) Pl. 249:968.

Achaemenid ruler prior to the reign of Darius I. To judge by Georges Posener's catalogue,<sup>25</sup> which is our principal source of information in regard to Achaemenian ware discovered prior to the excavation of the Persepolis Treasury, there exist six vessels or vessel fragments bearing the name of Darius (I). Five fragments were found in the course of the excavations of Susa,<sup>26</sup> and one vessel was found in Syria in 1931.<sup>27</sup> To our knowledge, only one specimen of this group—the upper portion of a rather wide-mouthed cosmetic jar from Susa—is published in fairly adequate fashion.<sup>28</sup> None of the inscriptions of the Darius vessels include cuneiform versions. The king's name and titulary—"King of Upper and Lower Egypt, Lord of the Two Lands: 'Darius,' living eternally"—are engraved in each case in one vertical column of Egyptian hieroglyphs,<sup>29</sup> inclosed in a rectangular border whose top has the form of the Egyptian sky symbol (as on our Nekau bowl; see Pl. 47:1a and also p. 83). Furthermore, two of these vessels are dated "year 33" and "year 34" respectively.<sup>30</sup> Thus, there is no doubt that they were made during the reign of Darius I (i.e., in 489–487 B.C.<sup>31</sup>), since the reigns of the other kings of this name, Darius II and Darius III, lasted only nineteen years and five years respectively. The close similarity of the Egyptian inscriptions on the dated and the undated specimens and the omission of cuneiform legends—present on most later vessels—from all vessels of this group attribute the undated specimens too to the reign of Darius I. The fact that these vessels are inscribed solely in Egyptian hieroglyphs strongly suggests that they were made in Egypt and then exported to Susa and other points.<sup>32</sup> As to their material, Roland de Mecquenem, according to Posener,<sup>33</sup> insists that the stone is aragonite, whereas Burchardt calls the material of the jar illustrated by him (see n. 28) alabaster.<sup>34</sup>

Posener lists thirty-five vessels and vessel fragments bearing the name of Xerxes in Egyptian hieroglyphs,<sup>35</sup> accompanied in most cases by Old Persian, Elamite, and Babylonian cuneiform legends. To this number must be added an indeterminate quantity of fragments on which parts of cuneiform legends only are extant.<sup>36</sup>

Except for two fragments—one of black-speckled green

25. *La première domination perse en Égypte* (Le Caire, 1936) pp. 137–51.

26. *Ibid.* Nos. 38–42 (pp. 139 f.).

27. *Ibid.* No. 37 (p. 138).

28. *Ibid.* No. 38; illustrated by Max Burchardt, "Datierete Denkmäler der Berliner Sammlung aus der Achämenidenzeit," *ZAS* XLIX (1911) Pl. VIII 4 and p. 75; there is a distorted sketch in *MDP* VII (1905) Fig. 47.

29. Posener, *op. cit.* p. 138.

30. *Ibid.* Nos. 37–38.

31. See *SAOC* No. 24, p. 29.

32. See Burchardt, *op. cit.* p. 75, and Posener, *op. cit.* p. 190.

33. *Op. cit.* p. 137.

34. According to Alfred Lucas, *Ancient Egyptian Materials & Industries* (3d ed.; London, 1948) p. 75: "Geologically, Egyptian alabaster is calcite, though sometimes erroneously called aragonite, which is of the same composition, but of different crystalline form and different specific gravity. Whether aragonite is found in Egypt is not known, but its occurrence has not been reported and all the alabaster examined by me has been calcite."

As we did not have the advice of a petrologist in the field, in the present volumes we are in most cases calling "alabaster" the material that roughly corresponds to Lucas' partial definition of stone which is "white or yellowish white in color, translucent in thin sections and frequently banded" (*ibid.* p. 75; see also pp. 462 f.).

35. Posener, *op. cit.* Nos. 43–77; see also *KA*, p. XXVI e.

36. Such specimens are not included in Posener's publication (see *op. cit.* p. 137), which is concerned primarily with the Egyptian versions of the inscriptions.

onyx, the other of dark green diorite<sup>37</sup>—all Xerxes vessels registered by Posener are said to be made of aragonite (but see n. 34).<sup>38</sup> On all vessels except one (Posener's No. 48; see p. 87 below) the Egyptian version is engraved in a vertical column. Five, or possibly six, of these inscriptions mention the fuller Egyptian titulary (Posener's type *A*)<sup>39</sup> of the ruler, namely "King of Upper and Lower Egypt, Lord of the Two Lands: 'Xerxes,' living eternally," and are inclosed in a rectangular frame with sky symbol (see above). The majority of the Xerxes vessels bear the abbreviated royal title: "Xerxes, the Great King" (Posener's type *B*),<sup>40</sup> with or without the rectangular inclosure. Three Xerxes vessels of the group with fuller titulary (type *A*) bear the regnal year in Egyptian numerals, namely "year 2" (484/83 B.C.)<sup>41</sup> and "year 5" (481/80 B.C.)<sup>42</sup>

As far as we know, except for their legends, none of the fragmentary Xerxes vessels with the Egyptian text of type *A* (all found at Susa and now deposited in the Louvre) have been published. We assume, however, that their shapes closely resembled those of the published Darius jar mentioned above and the vessels of Xerxes bearing the inscription of type *B*, which we shall now consider.

Five vessels of this group (Posener's Nos. 49–53), found in widely separated parts of the Achaemenid Empire, are illustrated in various publications. All five have the form of cosmetic jars or bottles and bear a quadrilingual inscription—in Old Persian, Elamite, and Babylonian cuneiform and Egyptian hieroglyphic—which reads "Xerxes, the Great King" (Eg.: "Pharaoh").

The first vessel to become known (Posener's No. 49; now in the Cabinet des Médailles, Paris), described by De Caylus in 1762,<sup>43</sup> was found in Egypt. In contrast to the other vessels of this group, whose cuneiform texts are each on a separate line, the three cuneiform versions on this specimen, according to Burchardt,<sup>44</sup> are continuous. The Egyptian text is inclosed by a rectangular frame. The jar is 30 cm. high with maximal diameter of 17.5 cm.<sup>45</sup>

Posener's vessel No. 50 may have been found in Syria. At least, it was "envoyé d'Alep."<sup>46</sup> The jar (24 cm. high) is now in the Louvre. Its cuneiform legends are arranged, as usual, in three lines above the vertical Egyptian text, which, however, lacks the rectangular inclosure.

37. Posener's Nos. 74 and 75 respectively.

38. *Ibid.* p. 140.

39. *Ibid.* p. 140 and Nos. 43–47 and possibly No. 48.

40. *Ibid.* p. 141 and Nos. 49–76; No. 77 may be type *A* or type *B*.

41. *Ibid.* Nos. 43 (with cuneiform text) and 44 (without cuneiform text).

42. *Ibid.* No. 45 (without cuneiform text).

43. Anne Claude Philippe de Caylus, *Recueil d'antiquités égyptiennes, étrusques, grecques, romaines et gauloises* V (Paris, 1762) 79–83 and Pl. XXX. See also Antoine Jean Saint-Martin, "Nouvelles observations sur les inscriptions de Persépolis," *Académie des inscriptions et belles-lettres, Mémoires de l'Institut royal de France* XII 2 (Paris, 1836) pp. 143–46 and illustration opposite p. 144 (reconstructed drawing of vessel and clearer copy of inscription). Saint-Martin first deciphered the name of Xerxes in the OP inscription, whereas Jean François Champollion identified the Egyptian version; see *Précis du système hiéroglyphique des anciens Égyptiens* (2 vols.; Paris, 1824) pp. 179–81 and Pl. 7:125–125a, also pp. 231–33 of 2d ed. (2 vols.; Paris, 1827–28).

44. *Op. cit.* p. 77 and Pl. IX 2 (called "Pariser Xerxesvase"). According to De Caylus (*loc. cit.*) the cuneiform texts form one line and a half. Léon de Rosny, *Les écritures figuratives et hiéroglyphiques des différents peuples anciens et modernes* (2d ed.; Paris, 1870) shows, opposite p. 58, another illustration of this vessel from a slightly different angle. It verifies that the cuneiform texts extend around half of the jar (on a line and about a quarter) between the two knob handles (one shown, with appended "apron"); see p. 57, n. 1, for additional bibliography.

45. Burchardt, *op. cit.* p. 76.

46. Georges Legrain, ed., *Collection H. Hoffman: Catalogue des antiquités égyptiennes* (Paris, 1894) No. 59 (pp. VI and 22 f.), good illustration on Pl. XII.

The third vessel (Posener's No. 51) of this group, now in the British Museum, was uncovered near the Aegean shore of Anatolia, during excavations at the Mausoleum of Halicarnassus.<sup>47</sup>

Another jar (24.7 cm. high, with maximum diameter of 22.9 cm.<sup>48</sup>), now in the University Museum in Philadelphia, is more squat than the other vessels, and its originally projecting rim has been ground off. Its provenance according to Posener (No. 52) is Babylon, but A. T. Clay states that it is not known where the vessel was found.<sup>49</sup> The cuneiform versions of the inscription are arranged in the usual fashion in three lines (top: OP, center: El., bottom: Bab.) above the vertical one-column Egyptian text, which is inclosed by a rectangular frame with sky symbol.

The provenance of the last, well preserved, example (Posener's No. 53) of this group, now in the Yale Babylonian Collection, is apparently not known.<sup>50</sup> It has the usual bulbous shape of the cosmetic bottles or jars with projecting rim and two knob handles above "aprons," and its inscription is identical with that of the Philadelphia vessel (No. 52).

Sherds of alabaster (or aragonite; see p. 85, n. 34) vessels, probably of the same general shape as those just described, have been uncovered in the excavations of Susa.<sup>51</sup> One of these fragments (Posener's No. 56) shows part of Xerxes' abbreviated Egyptian text (Posener's type *B*; see p. 85) written in a vertical column with remnants of the rectangular frame.

Of the remaining Xerxes fragments enumerated by Posener, Nos. 54, 55, and 57-76 preserve parts of the abbreviated Egyptian text (type *B*) and No. 77 may represent either Xerxes' fuller titulary (type *A*; see p. 85) or the abbreviated title. All these sherds, now deposited in the Louvre, were presumably uncovered at Susa.

Posener lists four vessels (Nos. 78, 79, 81, 82) bearing quadrilingual inscriptions of Artaxerxes. On one fragment (No. 80) the Egyptian hieroglyphic text only is preserved, but there is hardly a doubt that this object too had Old Persian, Elamite, and Babylonian cuneiform legends incised, as on the extant examples, in three horizontal lines above the vertical column of the Egyptian text. All specimens but one (No. 79; see below) are made of aragonite or alabaster. Two vessels (Nos. 78 and 81), illustrated in publications cited below, have the usual shape of the cosmetic vessels which bear the names of Darius (I) and Xerxes (see above); a third example, a granite pitcher (No. 79), may have been used for the same purpose. The fact that otherwise vessels with quadrilingual inscriptions are known solely from the time of Xerxes, the identical arrangement of the texts on the vessels of Xerxes and on those of Artaxerxes, and the close similarity in shape and material

47. See Charles T. Newton, *A History of Discoveries at Halicarnassus, Cnidus, and Branchidae* (London, 1862-63) II 91-93 and 667-70 (description by S. Birch) and Vol. I, Pl. VII. According to Burchardt, *op. cit.* p. 76, the bottle-shaped jar is 29.2 cm. high with maximal diameter of 17.8 cm. His photograph (Pl. IX 1) shows one of the two knob handles, above a roughly triangular less pronounced projection or "apron"—features which are characteristic for this group of vessels.

48. Burchardt, *op. cit.* p. 77 and Pl. X 5.

49. *MJ* I (1910) 6 f. and Fig. 2.

50. See Clay in *Art and Archaeology* IV (Washington, D.C., 1916) 59 f., with photograph (no scale or dimensions given).

51. *MDP* VIII 42, Fig. 69; see also William Kennett Loftus, *Travels and Researches in Chaldaea and Susiana . . . in 1849-52* (New York, 1857) pp. 409-11.

of specimens of the two groups suggest that the royal name on the vessels concerned refers to Artaxerxes I.<sup>52</sup> The elaborate form of the granite pitcher now in Venice does not necessarily assign the vessel to one of the two later kings of this name.<sup>53</sup>

One of the Artaxerxes vessels (Posener's No. 78) was purchased in Egypt and subsequently placed in the Ägyptische Abteilung in Berlin. There are no further records as to its provenance. The Egyptian text—with rectangular frame and sky symbol—of the rather wide-mouthed jar (32 cm. high; maximum diameter, 19 cm.) reads "Artaxerxes, the Great King," whereas the cuneiform versions simply state "Artaxerxes, the King."<sup>54</sup> According to Burchardt the entire inscription is colored with black pigment.<sup>55</sup> The shape of the jar—with its slightly bulbous almost barrel-shaped body, knob handles above "aprons," and projecting rim<sup>56</sup>—resembles that of the earlier inscribed vessels.

The form of a second Artaxerxes jar (Posener's No. 81) is even closer to that of the vessels of Xerxes and Darius.<sup>57</sup> In this instance the cuneiform versions and the Egyptian text (without rectangular frame) read alike: "Artaxerxes, the King." The vessel (20.3 cm. high with maximum diameter of 13.5 cm.), which is now in the University Museum in Philadelphia, was purchased in Baghdad; its exact provenance is unknown.

As far as we know, there is no illustration of the shape of a third Artaxerxes vessel (Posener's No. 82), described by its owner,<sup>58</sup> who purchased it in Aleppo. He was told that the vessel had been found at the site of Hierapolis in northern Syria. It may resemble the usual cosmetic jars. If so, it is an unusually squat specimen, for its maximal diameter (37 cm.) exceeds its height (27 cm.). The quadrilingual inscription reads "Artaxerxes, the King," the Egyptian text lacking the rectangular frame.

On an aragonite or alabaster fragment (Posener's No. 80) found at Susa and now in the Louvre, enough of the Egyptian text is preserved to show that it read "Artaxerxes, the Great King." Other sherds from Susa preserve parts of the cuneiform texts only.<sup>59</sup>

There remains the Artaxerxes vessel of the Treasure of San Marco in Venice (Posener's No. 79). It appears that its provenance, given as Persepolis by Burchardt<sup>60</sup> and Posener,<sup>61</sup> is not certain. Pasini expresses only the assumption or belief that it came from excavations at our site.<sup>62</sup>

52. So *KA*, p. 120, footnote (see also p. XXVII); also Burchardt, *op. cit.* p. 75; Vincent Scheil, quoted in Noel Giron, "Vase quadrilingue au nom d'Artaxerxès," *RA* XVIII (1921) 144; Posener, *op. cit.* p. 146.

53. Burchardt, *op. cit.* p. 75, n. 3, is inclined to attribute it to Artaxerxes III.

54. Posener, *op. cit.* p. 146, including n. 4; *KA* pp. XXVII and 120 f. ("Art. Vase c").

55. *Op. cit.* p. 74. 56. *Ibid.* Pl. VIII 3. 57. *Ibid.* Pl. IX 3.

58. Giron in *RA* XVIII 143-45, with transcribed text.

59. *MDP* I (1900) Figs. 316-17, referred to in *KA*, p. XXVII.

60. *Op. cit.* pp. 75 f. 61. *Op. cit.* p. 147.

62. Antonio Pasini, *Il tesoro di San Marco in Venezia* (Venezia, 1886) p. 98: "La si ritiene proveniente dagli scavi nelle rovine di Persepoli...." He also states that he was not able to discover how the object became part of the San Marco Treasure. His assumption that the vessel was destined to contain the ashes of Artaxerxes is to be disregarded. T. J. Pettigrew does not mention the provenance of the vessel in his report of 1844 on the inscription (published in *Archaeologia* XXXI [London, 1846] 275-78, with transcription). Adrien de Longpérier, "Vase fabriqué en Égypte pendant la domination perse," *Revue archéologique* I (Paris, 1845) 444-51, also omitting any reference to the provenance of the vessel, simply expresses his belief that it was probably made in Egypt.

The Egyptian text—with rectangular frame and sky symbol—of the quadrilingual inscription, which is engraved opposite the handle, is identical with that of the Berlin jar (Posener's No. 78) and reads "Artaxerxes, the Great King." However, in contrast to the cuneiform versions of the Berlin jar, which simply mention "Artaxerxes, the King," those of the Venice vessel repeat the Egyptian title. Thus, the vessel under consideration is the only known example on which all versions of the inscription designate the ruler as "Artaxerxes, the Great King." The vessel, made of speckled dark gray and white granite, is a bottle-shaped pitcher with one (broken) handle. There are three perforated lugs below a molding near the rim, and ridges encircle the rim, neck, and shoulder. The slender somewhat bulbous body—resembling that of our granite bottle with Xerxes inscription (see p. 88)—rests on a short roughly cylindrical foot with discoid base.<sup>63</sup> It is conjectural whether the exceptionally tall vessel (68 cm. high), whose orifice was once covered by a lid (fastened to the three lugs), was employed for the storage of liquid cosmetic substances or as a receptacle for wine, or the like, used at the king's table.

## NEWLY DISCOVERED INSCRIBED VESSELS

To our knowledge, with the exception of the inscribed specimens referred to on the preceding pages, no vessels of stone or composition have hitherto been defined as Achaemenid ware. Comparison of the previously known vessels, of rather stereotyped shapes, with the royal tableware from the Persepolis Treasury shows that the latter group includes entirely distinct and in many instances exceptionally attractive examples of craftsmanship of the Achaemenian period.

All inscribed Persepolis vessels of the group concerned were found in the debris of the Treasury, and the name of the king, wherever traceable, is that of Xerxes. None of the Xerxes vessels from Persepolis bear the full Egyptian titulary which is found on all known Darius vessels of other provenances and on five or six Xerxes vessels from Susa (see p. 85). The standard inscription of our Treasury ware is engraved in four languages—Old Persian, Elamite, and Babylonian cuneiform and Egyptian hieroglyphic—and reads as follows:<sup>64</sup>

Old Persian: *xšayāršā\ xš\ vazraka*  
 Babylonian: *ḫi-ši-ḫi-ar-šá-šarru rabū-ú*  
 Elamite: *ḫik-še-ir-šá ḫisunki ir-ša-ir*  
 Egyptian: *Ḥšyḫrš3 pr-ḫ3 p3 ḫ3*  
 Xerxes, the Great King (Eg.: Xerxes,  
 Pharaoh, the Great).<sup>65</sup>

With two exceptions (see below) the inscription is continuous and written horizontally in one line partly encircling the exterior of the vessel, and in only one instance is the Egyptian text inclosed in a frame (see Pl. 54:1*b*).

The arrangement of the inscription is of course dictated to a great extent by the form of the vessel on which it is

63. See Burchardt, *op. cit.* Pl. IX 4 and p. 77.

64. Cuneiform verified by Cameron, who tabulated all inscriptions, basing his chart on photographs of the objects and on field notes and drawings made by McCown and draftsmen; Egyptian transcribed and translated by Hughes.

65. Cameron discovered one variant of the standard cuneiform inscription on fragments (PT5 733; not illustrated) of a plate of yellowish-brown, white, and red-brown chalky stone from Plot HF 57 in Hall 41. The remnants of the inscription show the Bab. word for "I," the El. for "great," and the OP, for "king." The ruler's name (presumably Xerxes) is not preserved. Only in this instance is the OP word for "king" written out in full (*[x]a-ša-a-[ya-θa-i-ya]*), whereas in all other cases it is expressed by the ideogram *xš*.

engraved. Almost all inscribed Treasury vessels are rather shallow footed or footless plates, whose exterior surfaces do not provide space for more than a one-line inscription, if the latter was meant to be visible from the side. (The deep bowl shown on Pls. 51:5 and 52:3, with remnants of one line of cuneiform, is an exception and could have been inscribed in the manner explained below.) For the same reason the Egyptian text of all plate inscriptions is arranged horizontally, contrasting with all previously known vessel inscriptions but one—Posener's fragment No. 48 (see p. 85),<sup>66</sup> which we therefore assume to be the remnant of a plate. On the other hand, a bottle from the Treasury (Pls. 51:3, 52:4) illustrates the distinct arrangement of the four texts on relatively tall and slender vessels. On this specimen the three cuneiform versions are separated on three lines above the Egyptian text,<sup>67</sup> which is written in a vertical column. This is the standard arrangement on the previously known vessels with quadrilingual inscriptions. Thus, considering the fact that all published examples of that group are jars or bottles (and a pitcher of related shape; see p. 86), we may conclude that most or all specimens inscribed in this manner<sup>68</sup> belong to vessels of the same general form. In the Persepolis Treasury there occurred only one additional example, namely an alabaster sherd (Pl. 52:5) on which are preserved the beginnings of two superposed lines of the Old Persian and Elamite texts showing the first characters of Xerxes' name (OP *xā-ša-* . . . , El. *ḫik-* . . .).<sup>69</sup>

The materials used for the inscribed Persepolis vessels are listed in Table VIII, and examples are described in the tables accompanying the illustrations. The substance of two fragmentary plates is classified as blue composition. These two specimens are of a greener hue than other blue composition objects. They appear to be definitely vitrified, and a microscopic examination might show that they are glass rather than composition (see p. 135, n. 9). It is conjectural whether a difference in the order of the texts on the illustrated example (Pl. 51:4) is significant.<sup>70</sup> The Egyptian text here precedes and adjoins the Old Persian, whereas in all other instances the king's Egyptian name appears at the end of the cuneiform texts followed by a gap.<sup>71</sup>

As to the forms of the inscribed vessels, most of them are plates, but in many cases the extant fragments provide no clues to indicate whether they belonged to footed plates (cf. Pl. 52:1–2) or to flat plates without pedestals (cf. Pl. 52:6–7). Not less than thirty-seven plates of this group have a characteristic profile with projecting flat-topped rim above a rounded ridge (e.g. Pl. 52:1–2, 6). The proto-

66. Posener, *op. cit.* p. 142: "Exemple jusqu'ici unique de texte écrit horizontalement."

67. The name of the king (Xerxes) is preserved in the Egyptian text only, but it appears that this text omits "Great" (cf. Artaxerxes inscription of type B *ibid.* p. 146), whereas the remnants of the cuneiform legends mention "Great King."

68. I.e., fragments and unpublished vessels whose inscriptions are referred to *ibid.* mainly on pp. 140 ff.

69. For cosmetic bottles or jars bearing marks of their capacity, see pp. 108–9.

70. The second fragment (PT4 419; found a year earlier in the adjacent plot HG 50) may actually belong to the same vessel, for it has the same rim form and shows part of Xerxes' name in Elamite, which is missing on the illustrated plate.

71. The diameter of the plate excludes the possibility that the four texts were continuous without gap. The appearance of the Egyptian characters in particular suggests that the inscription was incised after the paste of the plate—presumably cast in a mold—had hardened.

type of this profile is illustrated by the plate of Amasis (Pls. 47:4 and 48:6, p. 83) and indicates the Egyptian origin of at least part of the shape of the Xerxes plates concerned. The composition plate illustrated on Plates 51:4 and 52:7 has a similar profile, but without a ridge, and the similarity of the footed bowl of Xerxes (Pls. 51:5, 52:3) to the bowl of Nekau (Pls. 47:1*b* and 48:2, p. 83) confirms our conviction of the close relationship between Saite-Egyptian vessel shapes and those of our Xerxes vessels.

It is conjectural whether the Xerxes vessels from the Persepolis Treasury were actually carved and inscribed in Egypt,<sup>72</sup> whether they were made in Egypt but inscribed at Persepolis, or whether they were fashioned—after Egyptian models—at Persepolis by foreign (Egyptian or Ionian?) or native artisans.

The most elaborate vessel of Xerxes' tableware is the extraordinary granite plate which appears to be held in the beaks of twelve swans (Pls. 53:1, 54:1).<sup>73</sup> Essentially, the profile of the upper part of the vessel is the same as that of the above-mentioned plates with projecting rim and external ridge below it. The foot must have been almost identical with that of the plate shown on Plate 52:2*c*. The necks of the swans project from points just above the external curve of the plate body and above the inscription, which in this case is barely visible when the plate is viewed from the side. A triangular depression in the forehead of each swan, and presumably the hollow eyes of the birds, had been inlaid. A reddish-orange substance was noticed in one of the triangles. The inscription, to judge by its extant parts (see Pl. 54:1*b*), was undoubtedly identical with the standard quadrilingual inscriptions of the other plates (see Pl. 50) except for the frame inclosing the Egyptian version on the swan plate.

The granite bottle (Pls. 51:3, 52:4) belongs to the group of cosmetic vessels whose purpose as containers of aromatic substances is suggested by objects of the same slender bulbous shape carried, together with a towel, by personal attendants of the king in the Persepolis reliefs.<sup>74</sup> We are not certain whether the short cylindrical neck of our vessel originally terminated at its present top, which is rather smooth but nevertheless perhaps fractured. The shape of the bottle would be more pleasing had it been provided with a projecting rim (cf. Pls. 65:1–2 and 12–13, 47:7*a–b*, 48:8*b*). There are two slight projections at the fracture to the right of the Egyptian text. One projection, with vertical incisions, suggests the bird tail of a winged disk symbol; the other may be part of a knob or lug, such as usually occurs on opposite sides of vessels of this type.

#### VESSELS WITH SCULPTURED EMBELLISHMENT

The most numerous examples of this category are plates and trays whose handles are carved in the form of bird

72. See Vol. I 27.

73. The pieces of this object were scattered far apart and received not less than five field numbers (listed in table accompanying Pls. 53–54) before—in the process of sorting several thousand stone sherds—it was established that the fragments belonged to one vessel. In part the dispersal of the fragments was presumably caused by stone-diggers, for several pieces were found at unusual heights above the floor. After the illustrations here shown had been prepared, we found further fragments which largely restored the original vessel, but it was removed to Tehran (see p. 84, n. 14) before we were able to revise our graphic records. Even so, the draftsman's reconstructions appear to be correct.

74. See Vol. I, e.g. Pl. 149. To judge by the outline of the vessel (now mutilated) shown in this relief, it appears to have been provided with a lid which may have been held in place by means of cords fastened to two lugs or knobs on the upper body.

heads. To judge by the length of the necks, swans form the twelve handles of the elaborate Xerxes plate referred to above (Pls. 53:1, 54:1) and the two paired handles of a tray (Pls. 53:2, 54:2). The graceful pattern formed by the heads and palmette-joined necks of the swans of the latter example is related to the sigmoid bird figures with palmettes found on silver bowls from Kazbek<sup>75</sup> and Ialysos (Rhodes).<sup>76</sup>

The addorsed heads of two ducks or geese projecting from the side of a plate (Pl. 53:3) point to an Egyptian prototype. The origin of the peculiar duplicated bird handles is clearly illustrated by an Egyptian stone bowl.<sup>77</sup> Its underside shows the neatly incised design of two ducks or geese whose bodies form the two halves of the vessel while their heads are reversed and rest on their backs. The top view of a second specimen<sup>78</sup>—reported to be similar to this vessel, though less elaborately patterned—shows the addorsed bird heads projecting from the side of the receptacle in the same manner as those of our Persepolis plate. The latter, however, lacks the suggestions of feet and the tail feathers marked on the Egyptian vessel. The eyes of the birds of the Persepolis plate are marked by rather large irregular depressions which had presumably been inlaid (cf. our plate with swan handles).

A single long-necked head of a duck or goose forms the handle of another tray (Pls. 53:5, 54:3), and the head of a parrot embellished the top of the erect grip of a tray or plate (Pls. 53:4, 54:4). There are seven additional specimens of handles wrought in the forms of heads or necks of birds of the duck family, and parrots are represented by four additional handle fragments.

Another group of the vessels with sculptured ornamentation uses lions in relief or lion legs as embellishing features. The most elaborate object has the shape of an oblong receptacle, but we consider it a lid (Pls. 55:1, 56:5). One end had originally the form of a quarter-sphere terminating in a raised band. On the ledge thus formed stand two anti-thetic, evidently identical, rampant lions, whose upper parts—roughly half of each animal—are missing. The tail curves upward and touches with its imbricate tuft the lion's back. A rectangular panel separates the animals. We do not know whether the lions were regardant or whether they faced each other, and it is difficult to visualize the position of the forelegs in relation to the paw (with claws pointing downward) preserved at the uppermost (right) tip of the fracture (Pls. 55:1*a*, 56:5*a–b*). The lid proper ended near this fracture, as indicated by the beginnings of the terminal curve preserved at the underside of the object (reconstructed on Pl. 56:5*d*, where also the reconstructed paw of the second lion is shown). This means that the heads of the lions, like that of the fragment shown on Plate 35:1, were modeled as free sculptures in the round. We wonder whether the latter object—un-

75. As pointed out by Georges Contenau in *Manuel d'archéologie orientale* IV (Paris, 1947) 2258. See A. M. Tallgren, "Caucasian monuments: The Kazbek treasure," *Eurasia septentrionalis antiqua* V (Helsinki, 1930) Fig. 4 (p. 117) and pp. 180 f.

76. Jacobsthal directed our attention to this vessel; see his *Early Celtic Art* (Oxford, 1944) II, Pl. 234 *a*, and Vol. I 53 f. He considers the Ialysos vessel Persian work of about 500 B.C.

77. See von Bissing, *Steingefässe*, No. 18561 (p. 115 and Pl. VIII).

78. *Ibid.* No. 18562. For a study of this problem and further examples see Alfred Hermann, "Das Motiv der Ente mit zurückgewendetem Kopfe im ägyptischen Kunstgewerbe," *ZAS* LXVIII (1932) esp. pp. 94 f.

Cf. also a vessel with reversed duck-head handle carried by a servant on a relief fragment from Susa; Pope, *Survey* I, Fig. 79.



doubtedly a portion of a hero-and-lion scene—might have belonged to a similar carving of combined relief and free sculpture. Although the miniature lions on our lid appear to be more stocky and muscular than those shown in the Persepolis reliefs, there are similarities, such as the imbricate patterns marking the furry patches at the belly and the tuft of the tail and the treatment of the ankles.<sup>79</sup>

To judge by those fragments which permit reconstruction of the original shape, only tripod bowls have legs carved in the form of lion legs. One example (Pls. 55:3, 56:1) is made of green chert, a stone reserved almost exclusively for objects of ritualistic purposes (see pp. 53 ff.). The vessel is a thick-walled bowl with broad flat-topped rim and two ridges encircling the upper exterior. The highly stylized leonine legs, including the soles of the paws (see Pl. 56:1c), were carved with great care. The oddly projecting upper parts of the legs are marked by rows of parallel flutes, presumably indicating fur. The second restored example<sup>80</sup> is far more graceful (Pls. 55:4, 56:4). A shallow bowl rests on a central support whose three flanges are joined to curved lion legs. The paws stand on low cylindrical bases. The vessel has the appearance of a miniature edition of a large heavy metal caldron.

The fact that we found leonine legs of stone on tripod bowls only, combined with the fact that green chert (see above) was used for at least one such vessel, suggests either that these bowls had a specific purpose or that they were miniature copies of caldrons used for a specific—presumably ritualistic—purpose. In addition to the two vessels described there is a leonine leg (Pl. 56:3) which undoubtedly belonged to a vessel of the shape of the second example. The debris of the Treasury yielded eight additional fragments suggesting parts of tripod vessels. Five are of serpentine, two of limestone, and one is of green chert.

The handle of a tray or plate of unusual shape was modeled in the form of a cervine head, but there remain two horns only, wrought in relief on the top of the object, and traces of a pattern at the side (Pls. 55:2, 56:6). Two additional fragments with vague remnants of designs and a piece of an oval serpentine bowl showing in relief the rump of some animal may have belonged to similarly ornamented objects (none illustrated). A fragmentary spout in the form of a bovine(?) head (Pl. 56:2) has the same sort of triangular depression in the forehead as do the birds of our swan plate (see p. 88). The triangle and the depressions for eyes and horns may have been inlaid. A fragment of similar type (not illustrated) is apparently part of a spout carved in the shape of a duck head.

An alabaster fragment (Pl. 56:9) belonged to an object, perhaps a dipper, which either entirely or in part imitated the shape of a shell. There are Egyptian receptacles which copy simpler forms of shells,<sup>81</sup> and others which combine a hawk head with a scalloped shell of the form suggested by our specimen.<sup>82</sup> There is no clue, however, to indicate that our object was elaborated in such a fashion.

The sherds from the Treasury include fragments of three very similar plates of blue composition (see pp. 133 ff.) with impressions of six-petaled rosettes encircling

79. Cf. Vol. I, e.g. Pls. 20, 195.

80. Removed to Tehran prior to revision of drawings (see p. 84, n. 14).

81. F. W. von Bissing, *Steingefässe*, Nos. 18570–71 (p. 117 and Pl. VIII).

82. *Idem*, *Steingefässe: Einleitung und Indices* (CC XXXIV [1907]) Pl. B, No. 18765; *idem*, *Metallgefässe* (CC II [1901]) No. 3560 (p. 65 and Pl. II; silver vessel).

the top of the projecting rim (e.g. Pl. 56:8). We believe that most if not all composition objects were fashioned in molds, but we are not certain whether some details, such as the rosettes of the plates concerned, were incised or impressed by stamps while the paste was still soft, or whether the molds were prepared to impress such decorative details.

There is, finally, a unique lid (Pl. 56:7) ornamented with neatly carved concentric grooves and a central rosette showing the usual twelve petals, which, however, are pointed in this instance.<sup>83</sup>

#### FOOTED PLATES AND BOWLS

According to Table VIII there are forty plates whose remnants preserve sufficient clues to indicate that they were provided with a distinct pedestal or foot. Obviously the table can claim no more than to approximate the frequency of certain general shapes. As to inscribed specimens, the table indicates only the frequency of the materials employed, whereas the occurrences of determinable specific shapes are mentioned on pages 87–88 and the frequencies of sculptured embellishments (not specified in Table VIII) are referred to on pages 88–89. As to the seven footed bowls, the vessel with Xerxes' inscription is the only example (Pls. 51:5, 52:3) of a deep wide-mouthed receptacle. Certain shallower vessels which we classify as plates could actually be termed bowl as well.

All major variants of foot, body, and rim of the vessels concerned are shown in our illustrations (see Pls. 57, 58, 59:1–4). It will be noticed that the distinctive rim—flat-topped and projecting above an external rounded ridge—characteristic of the inscribed vessels is well represented among the examples of the noninscribed specimens (cf. Pl. 52:1, 2, 6 with Pl. 58:1, 6, 7) and thus to some extent links the latter vessels too with the plate of Amasis (see pp. 87 f.). A graceful shallow bowl (Pl. 58:5) is the only definitely footed vessel of blue composition.

#### FOOTLESS PLATES, SAUCERS, AND BOWLS

As far as could be ascertained, only a few shallow bowls and a few saucers are represented among the categories of royal tableware with which we are now concerned. On the other hand, footless plates are far more numerous than any other group of vessels. Table VIII lists 317 specimens according to the materials employed in their manufacture. The following tabulation records the frequency of the various profiles without regard to vessel dimensions. The rim, as usual, is an important feature of differentiation. The order of the tabulation follows roughly that of the drawings shown on the illustrations (Pls. 59:5–10, 61, 62), which are sufficiently clear to make specific descriptions unnecessary.

Plate	Number of Specimens	Plate	Number of Specimens
59: 5	22	61: 8	1
6–7	181	62: 1–2	4
8–9	22	3	2
10	14	4	1
61: 1	3	5	1
2	3	6	1
3, 9	15	7	1
4	8	8	4
5	1	9	1
6	1	10	1
7	1	11	1

83. For remnants of sculptured embellishment—including a 12-petaled rosette—on sherds of rock crystal, see Pl. 65:7, 9.

The most frequently occurring profile (181 specimens) is that of simple serpentine plates (e.g. Pl. 59:6-7) with slightly offset base and plain squared rim.<sup>84</sup> Footless vessels whose rims resemble those of inscribed plates (see Pl. 52) are represented twenty-two times (e.g. Pl. 59:8-9), but they lack the rounded external ridge to which we referred above. There are several plates with curious interrupted ledges (e.g. Pls. 60:4, 61:2-3), apparently devices for carrying the vessels (see also below). Plates of unique form with definite grips are illustrated by a specimen (Pls. 60:6, 61:7) with unusually broad rim pierced by two oblong holes and a plate (Pl. 61:8) with four solid equidistant handles projecting from the rim. The top of each handle is flush with the rim top; the sides are curved; and the beveled receding end has a roughly semicircular outline. A fragment of a well wrought bluish-green (see p. 135, n. 9) composition plate (Pl. 61:6) suggests that the vessel was fashioned on the wheel, but here, as in other cases, we believe rather that it was cast in a mold (see p. 89). On the other hand, it is safe to assume that the wheel was used in hollowing out and profiling stone vessels of circular plan.

As to the remaining objects of the group concerned, we may point out that, except for the inscribed Hittite sherd (see p. 84), a fragment of a small bowl with plain profile (Pl. 62:6) represents the only vessel made of hematite. Two vessels, a plate on a high ring base (Pl. 62:7) and a spouted saucer (Pls. 60:3, 62:10), probably had been discarded prior to the destruction of the site. Both vessels were found in pieces in the quarters of the garrison, not far from a quantity of stone sherds, mainly of rather plain serpentine plates (such as those illustrated on Pl. 59:5-7), obviously discarded, in the refuse fill of the bottom level. The saucer is the only Persepolis object suggesting the shape of a lamp. However, the fact that it is a unique specimen and the absence of discoloration on the spout speak against its use as a lighting device. Thus, we may be certain that lamps made of stone or composition were unknown at Persepolis, and, parenthetically, there is no Persepolis object made of some other durable material—such as glass, baked clay, or metal—which possibly could be identified as a lamp. True, Herodotus (ii. 62) mentions that saucers filled with salt and oil and provided with floating wicks were used in Egypt during the 5th century B.C.; but there is no clue to suggest that any Persepolis vessels were used in this manner.

#### TRAYS

Our collection of Treasury vessels includes fifty receptacles whose low walls and rectangular or curved oblong shapes mark them as trays or platters (see Table VIII). None of them are inscribed, and none are made of blue composition. There are seven specimens with straight ends and sides curved inward (e.g. Pls. 63:1, 64:1). Two elaborate examples of this type embellished with bird handles are shown on Plates 53:2, 5 and 54:2-3. Rectangular trays are represented by eighteen specimens, whose principal variants are shown on Plates 60:2, 63:3-4, and 64:2-4. One of these (Pl. 64:2) has an interrupted ledge such as is found on certain plates (see above) and on other trays (see below). The same specimen shows near each of the two extant corners a pair of drill holes, presumably duplicated

84. For possibly ritualistic use of these serpentine plates, see p. 55.

at the opposite (missing) end. Plausibly, pins had been inserted in these holes after the fashion of the gold pin mentioned below. One may conjecture that such pins fastened an overlay of precious metal (see p. 81). In the reliefs on the Persepolis staircases, servants in many instances carry vessels whose contents are protected by lids.<sup>85</sup> Although the reliefs apparently never depict trays, a peculiar feature of the vessel lids may serve to explain the gaps in the ledges of certain trays and plates in our collection. Two lobes projecting at opposite ends beyond the rims of the lids shown in the reliefs could correspond to similar projections—fitting into the gaps of the ledges—on lids (presumably made of precious metals) once used to cover our vessels. Again, the gaps simply may have been left to facilitate the removal of covers of any kind.

The forms of sixteen trays are illustrated by five specimens of rounded oblong plan (Pls. 63:2, 5 and 64:5, 6, 9). The long sides of these trays are outcurved, straight, or incurved, and four examples show the interrupted ledge referred to above. Two rounded grips with flat top project from one short end of the fifth example (Pl. 63:5).<sup>86</sup> The parrot handle (p. 88 and Pls. 53:4, 54:4) also belonged to a tray with curved outline (or possibly to a plate). The two remaining fragments are unique specimens. We mentioned above the possible significance of the gold pin (or rivet) piercing the corner of an angular tray (Pl. 64:7) whose original shape is problematical. The missing portion of the last example (Pl. 64:8) may have had the same neatly modeled beak shape as the extant part.

#### BOTTLES, LIDS, AND TUMBLERS

Our summary of previously known inscribed ware of the Achaemenid period (pp. 84-87) shows that nearly all vessels of that group—found at locations other than Persepolis<sup>87</sup>—are cosmetic jars or bottles<sup>88</sup> related in shape to the cosmetic bottles carried in the Persepolis reliefs by personal attendants of the king and represented by some specimens from the Persepolis Treasury. One bottle and a sherd suggesting the same general shape—both specimens bearing inscriptions of Xerxes—have been described above (pp. 87 and 88). Cosmetic bottles without inscriptions are represented by two presumably Egyptian specimens (Pls. 47:7a-b, 48:8b) which perhaps formed parts of a composite vessel with an inscription of Amasis (see p. 83). Three additional cosmetic bottles are illustrated on Plate 65:1, 2, 12, 13. All our bottles are provided with lateral knobs such as are characteristic of the inscribed cosmetic vessels from other sites, and the narrow appendage below the extant knob of one of our bottles (Pl. 65:2, 13) suggests the “aprons” marked on vessels of that group (see e.g. p. 86, n. 47). The collars of the cylindrical necks of our two presumably Egyptian specimens were perhaps meant to support tubular lids of the type illustrated on Plate 65:6, whereas the three bottles pictured on Plate 65 were probably sealed by plug-shaped stoppers. As to local or foreign manufacture of these three cosmetic bottles, two (Pl. 65:1, 12) may possibly be of Egyptian origin, for the

85. See Pl. 69 B-E and Vol. I, e.g. Pls. 85-86.

86. One of the grips is restored. At the opposite end a patch corresponding to the position of the extant grip is also restored, whereas the adjacent section, corresponding to the position of the restored grip, consists of the original stone. We believe, therefore, that handles existed at one end only.

87. Except, possibly, the Venice pitcher; see p. 86.

88. Termed according to the relative width of the orifices.

alabaster of which they are made resembles that of the two assumedly Egyptian specimens (see p. 90). The third vessel (Pl. 65:2, 13) is perhaps made of native Persian stone.<sup>89</sup>

As to the vessel lids illustrated on Plate 65, No. 3 suggests Egyptian, perhaps pre-Achaemenid, workmanship (cf. the form of the lid bearing the name of Psamtik on Pl. 48:1 and the shape of the lug handles of the blue composition bottle shown on Pl. 48:3). In addition to the rather simple examples illustrated by Nos. 4<sup>90</sup> and 5, both perhaps once provided with central knobs, and No. 6 (see above), with rectangular handle, there are two specimens, described above (pp. 88 and 89), namely an elaborate oblong lid with lions carved in relief and a lid with central rosette.

Objects made of rock crystal are rare. Table VIII shows that we found only six specimens made of this material. There is a carved fragment (Pl. 65:7) which provides no

clue as to the original shape of the object. What appears to be the tail of a feline and a section of a meander are preserved in low relief on one face. Two pieces of the neck of a bottle (Pl. 65:9) preserve parts of a rosette whose twelve petals radiated from the narrow orifice of the vessel. The remaining specimens (Pl. 65:8, 10, 11) are pieces of tumblers, or similar receptacles. A piece of bronze piercing fragment No. 8b is perhaps the remnant of a handle or of some decorative feature rather than part of a repair wire.

Table VIII, summarizing general vessel forms of stone and blue composition, lists tumblers, that is, drinking vessels, solely among objects of rock crystal. We shall see that glass too was used in the manufacture of tumblers, or the like, but the scarceness of fragments of small bowls, tumblers or beakers, suggests that for the king's table most of the drinking vessels, as well as receptacles such as bottles and pitchers, were made of precious metals.

TABLE VIII  
ROYAL TABLEWARE (ACHAEMENID\*) OF STONE AND COMPOSITION

FORM	MATERIAL† AND NUMBER OF SPECIMENS																	TOTAL
	Serpentine	Calcareous Stone	Alabaster	Marble	Gypsum	Slate	Steatite	Basalt	Diorite	Granite	Green Chert	Chalcedony	Lapis Lazuli	Hematite	Rock Crystal	Unidentified Stone	Composition	
Plate, footless	206	40	11	1		4	3	1	15	7						15	14	317
Plate, footed	14	13	1				1		2	7						2		40
Bowl, footless	1	1												1				3
Bowl, footed	2				1					2	1						1	7
Saucer		1	1		1											2		5
Tray	12	18	1	3					8	2		1	1			4		50
Tumbler															4			4
Lid		1	3				1									2		7
Bottle															1			1
Cosmetic bottle		1	4							1								6
Jar			2															2
Spout				1												1		2
Various sherds	35	64	34	3		3			7	18	1	3	1		1	6	6	182
<b>Total</b>	<b>270</b>	<b>139</b>	<b>57</b>	<b>8</b>	<b>2</b>	<b>7</b>	<b>5</b>	<b>1</b>	<b>32</b>	<b>37</b>	<b>2</b>	<b>4</b>	<b>2</b>	<b>1</b>	<b>6</b>	<b>32</b>	<b>21</b>	<b>626</b>
Including inscribed specimens‡	1	22	6						8	8						6	2§	53

\* Or assumedly Achaemenid.

† In many cases our definitions of the stones must be considered tentative until the Persepolis finds, now mainly deposited in the Museum of Tehran, are examined by a competent petrologist (see pp. 84, n. 15, and 85, n. 34).

‡ Totaled according to materials only.

§ Possibly parts of the same vessel (see p. 87, n. 70).

## GLASS VESSELS

### FIND-CONDITIONS, FREQUENCIES, DATING

This small but important group of finds (see Pls. 66-67) includes the remnants of about two dozen objects: four bowls, a lid, a bottle, two handles, a beaker, a chalice, and sherds belonging to vessels of indeterminate shape. A few sherds occurred in "Garrison Street" (Plot HG 75), about 20 meters south of the eastern exit of the Treasury, and the chalice (see p. 93) was found in the southern courtyard of the Apadana. All the remaining specimens of this group were found in the Treasury under the same conditions as the royal tableware of stone and composition, that is, mostly in Halls 38 and 41, in a subsidiary room (52) of Hall 41, and—a single handle—in the southern part of the

89. For cosmetic bottles or jars with marks of capacity, see pp. 108-9.

90. Made of steatite, rarely encountered among the Persepolis objects, and found rather close to the debris surface. The object may therefore be post-Achaemenian. On the other hand, steatite plate PT6 211 (Pls. 60:5, 61:5) cannot be later than the destruction of Persepolis, for it lay on the floor of a Treasury room beneath several meters of deposit.

building. Except possibly for freak intrusions brought about, for instance, by stone-pilferers of later times, the find-conditions prove that the glass objects from the Treasury antedate the destruction of the site in 330 B.C.

### TECHNICAL NOTES, DESIGNS, ORIGIN

With few exceptions these glass fragments from the Persepolis Treasury have a colorless, more or less transparent, body or core covered by the iridescent layers of the decomposed surfaces.<sup>91</sup> In several instances we noticed that the extant core has a light greenish tint. In a few cases<sup>92</sup> the decomposed surface consisted of soft white matter. There is only one piece of blue glass (with some white stains), namely a small handle (Pl. 67:1), to which a minute pellet of gold is attached.

91. For a thorough study of two colorless glass objects from Persepolis, by Frederick R. Matson, see pp. 128-30.

92. E.g. patterned sherd PT3 336 illustrated in *OIC* No. 21, Fig. 60.

As to the history and technique of ancient glass manufacture, there are recent publications by competent scholars dealing with these problems and listing pertinent bibliographies.<sup>93</sup> As far as we could ascertain, prior to the excavations at Persepolis no pre-Alexandrian glass was known from the Iranian plateau. Fragments of two inverted conoid goblets found at Susa, in the Elamite lowland to the west, have been assigned to the Achaemenian period because symbols on one of the pieces suggest Old Persian characters.<sup>94</sup>

The most instructive object of our collection is a fragmentary bowl which permitted reconstruction of the original vessel form (Pl. 67:3). There is an astonishing similarity between this bowl and certain silver vessels, such as a bowl bearing an inscription of Artaxerxes I,<sup>95</sup> a vessel found near Erzincan in eastern Anatolia,<sup>96</sup> and a third bowl discovered in the Caucasus.<sup>97</sup> Our glass bowl and the silver vessels have the same pronounced concavo-convex bosses alternating with blossom-like units, each of which has a central knob at its top. We would be justified in reconstructing the central omphalos which appears on the silver bowls, for a fragment of a second glass vessel from the Treasury (PT5 799, from Plot HF 29 in Hall 38; not illustrated) shows flutes radiating from a concavo-convex center.<sup>98</sup> There can be little doubt that the shapes of the glass vessels of this group are derived from metal-work,<sup>99</sup> and the extraordinary similarity between the best preserved piece of our collection and the silver bowl (or bowls) of Artaxerxes I suggests that these vessels of glass and silver are approximately contemporaneous. While we are certain that our glass vessel was made during the Achaemenid period, we believe that its place of origin must be sought in one of the western lowland provinces, for we have no clues for the manufacture of glass vessels on the Iranian plateau during this period.

We are now convinced that none of the glass objects from the Persepolis Treasury were mold-blown,<sup>100</sup> a tech-

nique of glass manufacture which was apparently not known prior to the 1st century B.C.<sup>101</sup> Most of our vessels—those already mentioned and others to be considered—were presumably made by pressing the pasty glass mass into (or over) molds.<sup>102</sup> If the assumption is correct that the silver bowls of Artaxerxes were used specifically for serving wine,<sup>103</sup> we should not hesitate to believe that our glass bowls of the same or similar shape served the same purpose.<sup>104</sup>

Some fragments preserving parts of delicate, presumably molded, patterns (Pls. 66:1–2, 67:4–5<sup>105</sup>) are too small to indicate the original forms of the vessels. The remnant of one object (Pl. 67:9) suggests that part of it was modeled in the form of an animal head. The upper end of a grooved handle likewise suggests vaguely the head of an animal, whose jaws seem to hold the lip of a pitcher or the like (Pls. 66:3, 67:6). An entirely problematical fragment with incised lines is shown on Plate 67:2.<sup>106</sup> The sharp edges and the regularity of the grooves of a reconstructed beaker (Pl. 67:10), a bowl sherd (Pl. 67:11), and the neck of a bottle (Pl. 67:8) indicate that these grooves were cut with the aid of the wheel.<sup>107</sup> The only specimen of blue glass, namely a small handle with affixed gold pellet (Pl. 67:1), might prove interesting if analyzed for its coloring substance. There is, finally, a curved fragment (Pls. 66:4, 67:7) with an engraved palmette pattern. The edge of the fracture at the base of the palmette is raised, indicating that there was a knob or handle at this point. The close similarity between the decoration of the stone lid of Psamtik (Pl. 48:1) and our glass lid strongly suggests that the latter object too is a product of Saite Egypt.

It is conjectural whether some other objects illustrated on Plates 66–67—or all these objects—were imported from that same land, which excelled in the manufacture of glass many centuries before the beginning of the Achaemenid era.<sup>108</sup> Nevertheless, we have no doubt that the Persians' booty from Egypt, represented by numerous finds from the Persepolis Treasury, included vessels and other objects of Egyptian glass. Mesopotamia too may be considered as a possible source of glassware discovered at Persepolis. The equipment of a Babylon grave attributed by the excavators to the Persian period contained several objects of glass, namely a small (cosmetic?) jar, milky white and decorated with eyes in red and white, a flat transparent greenish bowl,<sup>109</sup> and the neck of a small dark blue trans-

101. See Partington, *op. cit.* p. 128; Lucas, *op. cit.* p. 221; also von Bissing, "Glasbläser oder Metallarbeiter?" *RT XXVIII* (1906) 20–22.

102. See Partington, *op. cit.* p. 124; also Lucas, *op. cit.* p. 221, n. 1.

103. See *AMI VIII* 17 and *OPG*, p. 199, *bātugara*-. For a reference to Persian wine cups of gold and crystal (glass?) see Aristophanes *The Acharnians* 70–75.

104. Mr. R. J. Charleston of the Victoria and Albert Museum in London kindly directed the writer's attention to a fragmentary bowl—now in the British Museum—which belongs to the same category of vessels. The light-colored, translucent, strongly iridescent glass bowl (original diameter of mouth, 16.7 cm.) was found at Ephesus (see Hogarth, *Excavations at Ephesus* [London, 1908] p. 318, B 1) in assumedly 4th-century debris. Fossing deals extensively with this object ("Drinking bowls of glass and metal from the Achaemenian time," *Berytus IV* [Copenhagen, 1937] 121–29 and Pl. XXIII), but Charleston informs us that its design was cut rather than molded (vs. Fossing, *Glass Vessels Before Glass-Blowing*, p. 84).

105. Also PT3 336; illustrated in *OIC* No. 21, Fig. 60.

106. A very similar fragment (PT5 961) has been examined by Matson (see pp. 128 ff.).

107. Cf. Kisa, *op. cit.* p. 60; Partington, *op. cit.* p. 124.

108. For references see the publications cited in n. 93.

109. Oscar Reuther, *Die Innenstadt von Babylon (Merkes)* (*WVDOG XLVII* [1926]) p. 36, Fig. 107 a–b, and Pl. 65:109 b and a.

93. See Lucas, *Ancient Egyptian Materials & Industries* (3d ed.) pp. 207–21 and 527 ff.; Poul Fossing, *Glass Vessels Before Glass-Blowing* (Copenhagen, 1940); J. R. Partington, *Origins and Development of Applied Chemistry* (London, New York, Toronto, 1935) pp. 119 ff.; see also Anton Kisa, *Das Glas im Altertume* (3 vols. consecutively pagged; Leipzig, 1908).

94. A reconstructed drawing based on both vessels but unfortunately not showing the outline of the inscribed fragment was published by Dieulafoy in *L'Acropole de Suse*, Fig. 304 and p. 432 (4<sup>e</sup> tablette); see also von Bissing, "Persische Trinkgefäße aus Glas," *Acta orientalia III* (Lugduni Batavorum, 1924) 94–96. For a reference by Aristophanes to Persian wine cups, see n. 103 below.

95. Herzfeld, "Eine Silberschüssel Artaxerxes' I.," *AMI VII* (1935) 1–8 and Pls. I–III (illustrating one of four specimens). The authenticity of the inscription has been doubted and, again, emphatically defended; see Herzfeld in *AMI VIII* 5–17. See also *OPG*, A1, pp. 153 and (for bibliography) 113. The provenance of the bowls is not stated except for the claim that they were excavated in Iran (*AMI VIII* 16), and their present location is unknown to us.

96. Dalton, *The Treasure of the Oxus* (2d ed.) No. 180 (Pl. XXIII and p. 44), with references to similarly decorated objects. The area of Erzincan presumably belonged to the Achaemenid province of Armenia (Armina on Fig. 2 of our Vol. I).

97. Pope, *Survey IV*, Pl. 119 A. The vessel of the T. L. Jacks collection illustrated *ibid.* Pl. 120 A is so similar to the Artaxerxes bowl that it may well be one of the four specimens referred to by Herzfeld (see n. 95 above).

98. The sherd has a light greenish body with iridescent surface. A fragment of a third glass bowl (PT5 700, from the same find-location in Hall 38), suggesting a vessel encircled by a row of ovoid bosses, is illustrated in *OIC* No. 21, Fig. 60. The surfaces of this sherd are covered with a thick white, somewhat iridescent layer.

99. See Herzfeld in *AMI VII* 4 ff.; cf. also the embossed silver bowls of the 26th(?) dynasty in W. M. Flinders Petrie, *The Arts & Crafts of Ancient Egypt* (Edinburgh and London, 1923) Fig. 108.

100. Against our suggestion in *OIC* No. 21, p. 84.

lucent bottle. While admitting the possibility of importation, the excavators conclude tentatively that the transparent glass was manufactured at Babylon about 600 B.C.

Our doubt as to the local origin of the glass objects from Persepolis is substantiated by the relatively small number of specimens found in the Treasury among the pieces of hundreds of stone vessels and by the absence of glassware—except for one chalice—in other Persepolis buildings investigated by us. The absence of glass manufacture and ignorance of its technique are further confirmed by the

Plot HE 52—height above floor unknown—adjoining a trench which had been dug at some previous time along the northern face of the platform of Palace G. The fragments of the vessel have light and dark shades of gray (discolored by fire?) without noticeable iridescence. The form of the chalice as reconstructed by the artist-draftsman is probably correct, and the design too is plausible, to judge by the extant parts. Drop-shaped bosses with small depressions above and round projections below encircle the upper body below the flaring rim. Centered concentric circles and

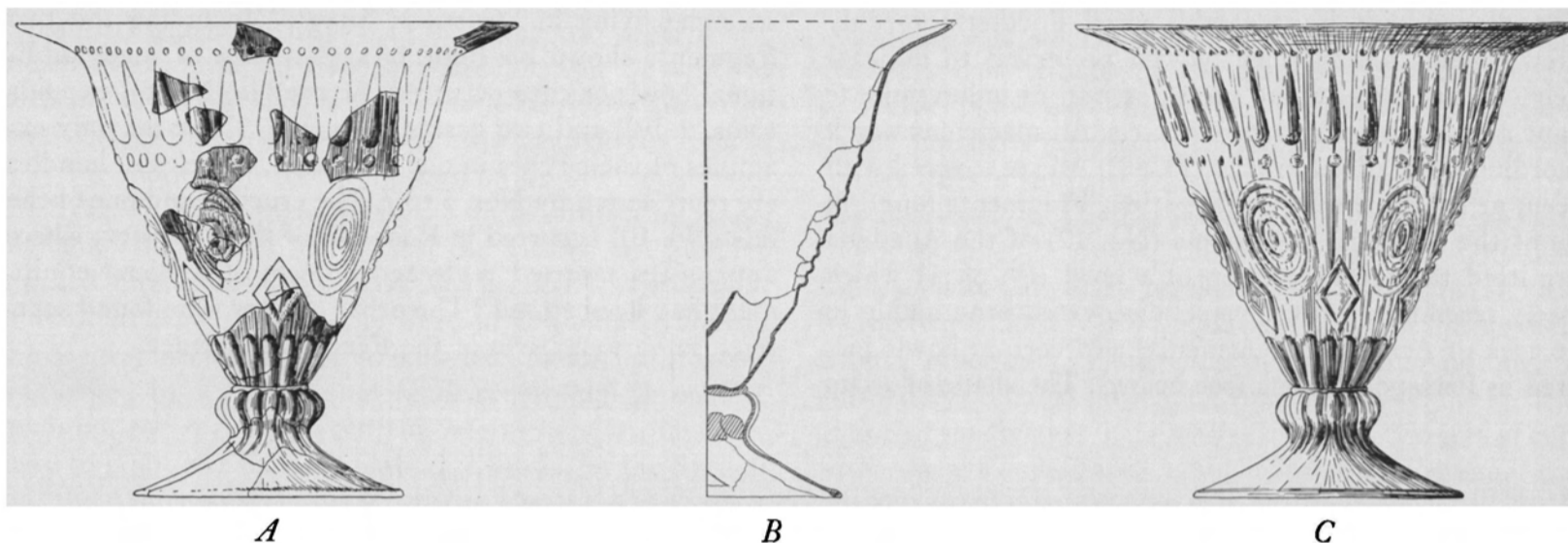


FIG. 18. FRAGMENTARY GLASS CHALICE (PT7 9) FROM SOUTHERN COURTYARD OF APADANA (PLOT HE 52). SCALE, 1:3  
A. EXTANT PIECES. B. CROSS SECTION. C. RECONSTRUCTION

paucity and poorness of glazed pottery at Persepolis (see p. 96). To be sure, the glazed friezes of inscribed and patterned baked bricks which embellished the Apadana were probably prepared in the neighborhood of the site, but we are quite certain that the makers of these bricks were foreigners, presumably Babylonians, here as at Susa.<sup>110</sup>

There remains one glass vessel of controversial nature, namely a chalice (Fig. 18), pieces of which were found in

110. The fact that the Treasury tablets do not mention Babylonians among the foreign artisans (see *OIP LXV* 14 f.) does not necessarily invalidate our opinion, because these tablets represent a small portion only of the original documents. Darius' "record of the construction of a palace" at Susa states that Babylonians "wrought the baked brick," but it mentions also that Medes and Egyptians "adorned the wall" (see our Vol. I 30 and *OPG*, DSf, lines 52-55 [pp. 143 f.]).

rhombs with slightly raised centers alternate on the middle zone. A pattern of oblong knobs at the lower end continues below a constricting "belt" on the projecting top of the conoid base. All contours of the design are soft, suggesting that the vessel was molded in some fashion.

We are at a loss to determine the age of this chalice. The absence of a decomposed surface layer and the shape of its lower portion give it a suspiciously late appearance. A clue for a relatively recent date is possibly indicated in our description of the find-area, which mentions that remnants of a crude post-Achaemenian structure were uncovered in the neighboring Plots HE 53-54.<sup>111</sup>

111. See Vol. I 77.

## METAL VESSELS

### REMNANTS OF BRONZE VESSELS

Our collection of metal vessels and their accessories, such as handles and lids, is regrettably small. Furthermore, only a few objects are sufficiently well preserved to indicate their original form. Some pieces of iron of indeterminate shape may have been parts of vessels. All specimens worth recording are made of bronze (Pl. 68). All are covered with green, at spots greenish-blue, patina. Fragments found in one of the southern storerooms (No. 12) of the Apadana permitted the reconstruction of a bowl (Pl. 68:1) which closely resembles a silver vessel discovered presumably in the area of Achaemenid Armenia<sup>1</sup> and certain bowls pictured in Persepolis reliefs (see below). The shape of a cup

(Pl. 68:2), also, could be reconstructed from a squashed specimen lying in "Garrison Street." Including the two fragments shown on Plate 68:3-4, pieces of seven additional bowls or cups occurred. A crucible (No. 8), two lids (Nos. 9-10), and two basins (Nos. 11-12) are the only examples of their types in our collection, but eleven handles are represented by Nos. 5 to 7. The crucible and one of the lids (No. 10) occurred in Room 40 of the Treasury, where apparently assorted tools and objects of soldiers' equipment had been stored.<sup>2</sup> The other objects were found scattered in various parts of the Persepolis Terrace.

### VESSELS SHOWN IN THE PERSEPOLIS RELIEFS

There is no doubt that the Persepolis Treasury once contained great quantities of vessels of precious metals, but, since they formed one of the most desirable categories of spoils, none remained. Thus we have to turn to other sources for more representative examples of Achaemenid metal vessels than our collection of the remnants of actual vessels provides. In our description of a glass bowl from the Treasury we referred to silver dishes of similar form said to have been found in Iran and attributed to the reign of Artaxerxes I (see p. 92, n. 95). The famous group of objects comprising the Oxus Treasure, discovered apparently in the area of ancient Bactria or Sogdiana,<sup>3</sup> includes elaborate vessels of gold and silver.<sup>4</sup> Silver vessels, plain and embellished, have been found presumably in the area of ancient Armenia,<sup>5</sup> and an ornamented bowl of silver was uncovered in the well known Achaemenian burial at Susa.<sup>6</sup>

As we are here dealing primarily with vessels which were once used at the Persepolis court or had been deposited in the royal storehouse, our most pertinent source of information is provided by the reliefs of servants carrying vessels for the royal banquets and of foreign delegates offering gifts or tribute in the form of vessels for the king's treasure.

The receptacles—undoubtedly made of precious metals—carried by the servants are stereotyped, rather plain, and distinct from the royal tableware of stone and composition. A few examples suffice to illustrate the shapes of all vessels appearing in the servant reliefs. There are plain hemispherical bowls, some being encircled by a groove

which presumably indicates that the rim was bent over (Pl. 69 *A*). In many cases an apparently boat-shaped lid protects the contents of the bowl, the lid having either pointed projecting ends (Pl. 69 *B*) or squared neatly fitting ends (Pl. 69 *E*). In Xerxes' palace a window relief shows a hemispherical lid provided with a loop handle, resting on a bowl of the same shape.<sup>7</sup> The second principal type of vessel carried by the servants is a tall-stemmed chalice with conoid or discoid base and presumably hemispherical body. These vessels are always covered by lids of the same shapes as those used on the bowls (Pl. 69 *C-D*). A chalice with corrugated stem is shown in the window relief mentioned above.

Whereas the bowls and chalices were undoubtedly containers for food and beverages, receptacles of ceremonial nature include the incense pails carried by attendants in the audience scenes of the Treasury (Pl. 69 *G*) and the Throne Hall, and the censers (Pl. 69 *F*) standing in pairs before the king's throne. The corrugated pails as well as the elaborate incense burners—whose details clearly indicate that the actual objects consisted of metal—have been described previously.<sup>8</sup> Pails and miniature censers resembling those in the throne scenes are shown in the hands of personal attendants pictured on doorways within the private suites of the palaces of Darius and Xerxes.<sup>9</sup>

We know from historical sources that much of the king's treasure consisted of vessels of gold and silver.<sup>10</sup> This fact is strikingly demonstrated by the examples of tribute shown in the Apadana reliefs. The gifts of twelve nations, out of a total of twenty-three, include vessels (see frontispiece), and it need hardly be doubted that they were made of precious metals. The most sumptuous vessels are those of-

1. Dalton, *The Treasure of the Oxus* (2d ed.) No. 182 (pp. 44-45 and Fig. 72).

2. See Vol. I 185.

3. See Dalton, *op. cit.* pp. 1 ff.

4. *Ibid.* Nos. 10 (pp. 5-6 and Pl. V) and 17-21 (pp. 8-9 and Pls. VII, VIII, V, III).

5. *Ibid.* Nos. 178-86 (pp. 42-45 and Pls. XXII-XXIII).

6. *MDP VIII* 43 and Pl. III; for further references to metal vessels of the Achaemenian period see Pope, *Survey I* 369 ff.

7. See Vol. I, Pl. 186 *B*.

8. *Ibid.* pp. 164 and 167.

9. For best preserved example see *ibid.* Pl. 184 *A*.

10. See references to Achaemenian treasures *ibid.* pp. 156-57.

ferred by the Syrians (Pl. 70 *D*), the assumed Armenians (Pl. 70 *F*), and the Medes (Pl. 70 *E*). Basically, their shapes are almost alike: an ovate body separated by a ridge from a tall flaring neck; two handles at opposite sides; and a spout projecting from one (necessarily hollow) handle. However, the handles of the Syrian vessel<sup>11</sup> are embellished with delicately wrought winged bulls, whose reversed heads with horns curving upward project above the rim. One hind leg is marked in relief on each handle. Flutes on the handles, on a joint at the handle bases, and on the body and the beaded neck ridge are additional features distinguishing this vessel from the two other specimens. The handles of the Armenian(?) vessel are adorned with impressive griffins whose leonine forepaws grasp the rim. The griffins too are shown rampant regardant, and they are modeled in the same fashion as the monsters of the Syrian specimen—heads in the round projecting above the rim, wings rather flat against the backs,<sup>12</sup> one hind leg marked in relief on each handle. The leg is that of a lion but ends in an eagle's talon. The third vessel, namely that of the Medes, has no sculptured embellishments, but it is distinguished by an additional semicircular handle on top, spanning the space between the lateral handles. Here we have to point out that the elaborate vessels of the Syrians and the Armenians(?) are pictured solely in the procession on the eastern stairway of the Apadana. For the simpler pots shown in the corresponding reliefs of the northern stairway see below.<sup>13</sup>

In examining the remaining vessels offered as tribute by peoples of widely separated parts of the empire, we find an astonishing lack of variety. We have to conclude, therefore, either that the sculptors stylized the shapes of foreign vessels or, less plausibly, that the approximate forms (and the weights?) of the tribute vessels were determined by decree. Except for two kinds of receptacles of unusual shape (see below) offered by representatives of the nations who occupied the southeastern and southwestern corners of the realm, there are only two basic types of vessels in the group concerned, namely bowls and cups (see Pl. 70 *A-C*).

The bowls are essentially hemispherical, but the rims vary. A few specimens are distinguished by rather simple patterns. The rim of the Parthian(?) bowls is folded over.<sup>14</sup> The vessels of the Babylonians and the Cilicians(?) have a flaring rim above an encircling ridge,<sup>15</sup> and the less graceful

though very similar bowls of the assumed Ionians have a groove, or two grooves and a ridge, below the projecting rim (Pl. 70 *A*).<sup>16</sup> Again, the two bowls shown in the Syrian delegation<sup>17</sup> can hardly be distinguished from those of the Ionians(?). The most elaborate bowls are two specimens (Pl. 70 *C*) offered by the Bactrian(?) delegation.<sup>18</sup> In both vessels the fluted flaring neck is separated from the rounded contracted body by a beaded molding. One of the bowls is further ornamented by horizontal grooves on its body.

The cups are usually inverted truncated cones. Two specimens with slightly concave sides encircled by a ridge are shown as tribute of the Medes.<sup>19</sup> Similar, though smaller, cups are part of the tribute of the Syrians pictured in the northern procession of the Apadana.<sup>20</sup> Cups with convex sides, also encircled by one ridge, are offered by the Arachosians(?) and by the Ionians(?) of the northern stairway procession.<sup>21</sup> Again, there are plain straight-sided cups, such as the vessels carried by the Parthians(?),<sup>22</sup> and by the Armenians(?) and the Bactrians(?)<sup>23</sup> in the northern tribute procession. Plain cups of this shape but distinguished by rounded projecting rims are shown in the delegation of the Arians(?).<sup>24</sup> Finally, there are two sets of cups with concave sides partly embellished with the usual corrugated metal pattern. One pair of these vessels (Pl. 70 *B*) is tribute of the Bactrians(?) in the procession of the eastern stairway.<sup>25</sup> The other cups of this type are offered by the Ionians(?).<sup>26</sup>

Distinct receptacles represent a part of the tribute of the Indian delegation. They appear to be oblong jars with flaring necks—perhaps filled with gold dust and symbolizing the enormous amount of this metal which the inhabitants of the Indus Valley had to provide.<sup>27</sup> The second type of unusual receptacle is shown in the Ethiopian delegation.<sup>28</sup> It is a slightly expanding cylinder covered with an apparently conoid lid. To judge by Herodotus' reference to the gifts of the Ethiopians, this object too may have contained gold.<sup>29</sup>

16. *Ibid.* Pl. 38 *B*; note the more rounded, sharply contracted body of the bowls on the complementary scene (*ibid.* Pl. 38 *A*). These bowls have the same profile as the Bactrian(?) specimens.

17. *Ibid.* Pl. 32.

19. *Ibid.* Pl. 27 *B*.

18. *Ibid.* Pl. 41 *B*.

20. *Ibid.* Pl. 32 *A*.

21. *Ibid.* Pls. 33 *B* and 38 *A* respectively.

22. *Ibid.* Pl. 39 *B*.

23. *Ibid.* Pls 29 *A* and 41 *A* respectively.

24. *Ibid.* Pl. 30 *B*.

25. *Ibid.* Pl. 41 *B*; cf. the simpler vessels of the complementary delegation on the northern stairway (*ibid.* Pl. 41 *A*).

26. *Ibid.* Pl. 38 *B*.

27. See *ibid.* p. 89 and Pl. 44.

28. *Ibid.* Pl. 49 *B*.

29. Herodotus iii. 97.

11. Duplicated by a second specimen carried by the same delegate; *ibid.* Pl. 32 *B*.

12. Like those of the monsters in certain doorway reliefs (e.g. *ibid.* Pl. 114) and not upcurled in the manner of many other representations of wings in Achaemenid art.

13. Because of the partial destruction of the northern relief of the Medes it is not known whether the same vessels were shown in both versions.

14. *Ibid.* Pl. 39 *B*.

15. *Ibid.* Pls. 31 *B* and 34 *B*.

## POTTERY

Most of those vessels which were found *in situ* on the Terrace<sup>1</sup> occurred in the quarters of the garrison adjacent to the eastern fortification. Others were lying in "Garrison Street," between the soldiers' quarters and the Treasury. In and near the northwestern guardroom of the Throne Hall five pots were found. Several occurred in the southern part of the Apadana. There were only six pots in the entire Treasury, and only two of them—from Rooms 78 and 86 (Pls. 71:1, 72:2–3)—appeared to be in or near their original positions. Fragments of coarse cooking ware occurred in Room 6 of the west wing of the Harem.

Bottle-like vessels were found in the quarters of the garrison, in the northwestern guardroom of the Throne Hall, and in the secondary structure in "Harem Street" (see below). Canteens, in particular, were parts of soldiers' equipment. They occurred in the garrison quarters and near the northwestern guardroom of the Throne Hall. One was found in Storeroom 12 of the Apadana, and one in the secondary rooms mentioned above. These rooms completely blocked traffic around the northern part of the Treasury.<sup>2</sup> After some hesitation we decided to attribute them and their contents to the time of the major occupancy of the site, rather than to some post-Achaemenian period.<sup>3</sup> Nevertheless, we illustrate the vessels from this location on a separate plate (Pl. 73). Except for a unique large storage jar (Pl. 73:7), the resemblance between the pots from this structure and certain specimens shown on Plates 71–72 is so close that they must be assumed to be approximately contemporaneous, that is—considering the fragility of pots—late Achaemenian.

Our list of ceramic types is obviously very limited, because of the character of the site. A settlement of commoners would be more fertile as to pottery. Vessels of clay were too lowly to be used on the royal table or by dignitaries of the court. This is well illustrated by a remark of Athenaeus,<sup>4</sup> quoting Ctesias: "Among the Persians any man who falls under the king's displeasure uses earthenware drinking-cups" (instead of vessels made of more valuable material).

The following types of vessels were found: bowl, small bottle, small jar, pitcher, canteen, storage jar, and tall bottle. Small bowls may have served as cups, but we found not a single receptacle of any material which definitely could be considered a lamp.

The Achaemenian pottery found at Persepolis is purely utilitarian, plain, with surface shades of brown or red,

often slipped or washed, and the paste, with similar color shades, averages medium fineness. Hard fine ware, comparable, for instance, to the later terra sigillata of the west, is absent. All vessels were turned on the wheel. A few specimens show traces of decomposed bluish-green or light green glaze. In Room 6 of the southeastern tower of the Apadana there occurred three sherds of a large-bellied jar bearing on the exterior remnants of iridescent light green glaze applied over a light yellowish-brown slip. The paste, of medium texture, has the same color as the slip. The infrequency and poorness of our glazed pottery, contrasting with the relative frequency of glazed (monochrome, usually blue) vessels in the Achaemenid stratum at Babylon,<sup>5</sup> strongly suggests that the technique of glazing was newly introduced from the west to the Iranian plateau during the Achaemenid period (cf. p. 93).<sup>6</sup>

The upper half of Plate 74 shows many sherds of wide-mouthed vessels, that is, bowls, which are illustrated by more complete specimens on Plates 71:1 and 72:1–3, 5. The base of a footed bowl (Pl. 72:4), resembling the pedestals of certain stone vessels, is unique. The lower half of Plate 74 illustrates mostly sherds of jars and pitchers, represented also on Plates 71:2–7, 72:7–11, 14–15, and 73:1, 3–4. A small glazed bottle (Pl. 72:6) is unique. A fragment of a glazed jar or pitcher is illustrated on Plate 74:35. Altogether we found parts of eight canteens of the general type of those shown on Plates 71:8–9, 72:12–13, 73:2, and 74:45. Lateral grooves at the sides of some canteens served undoubtedly as guide channels for straps—extending through the lug handles—by means of which some of these vessels were carried. Flat-bottomed bottles are represented by five specimens from the garrison quarters (e.g. Pls. 71:11–12, 72:16). Four similar pots (e.g. Pl. 73:5–6) occurred in the secondary building in "Harem Street." Finally, there are some exceptionally tall bottle-like vessels (e.g. Pls. 71:13, 72:17). Two of them (PT4 1157*a–b*), almost identical in form of rim and body with the illustrated example, are provided with two relatively small handles at opposite sides of the shoulder. These fragmentary pots (red-brown surface and medium paste of the same color; one restored specimen measuring 79 cm. in height) lay on the sill at the north jamb of the doorway to the western guardroom (Plot GF 40) of the Throne Hall. The pointed bottoms indicate that these vessels either stood in holes in the floor or were supported by rings, perhaps fitted for tilting. These bottles and bottle-like vessels were undoubtedly receptacles for liquids. A large unique jar with strong walls (Pl. 73:7) may have been a container for the storage of grain.

5. See Reuther, *Die Innenstadt von Babylon*, p. 36.

6. For Achaemenid pottery from Susa see now Roman Ghirshman, *Village perse-achéménide* (MDP XXXVI [1934]) mainly pp. 25–29 and 62.

1. For pottery from the Persepolis Spring Cemetery see pp. 119 f., Table X, and Pl. 89:5–11.

2. See Vol. I 263–64 and Fig. 109.

3. *Ibid.* p. 263 versus OIC No. 21, p. 87.

4. *Deipnosophistae* xi. 464.



## MARTIAL EQUIPMENT

This chapter deals with the remnants of weapons and accouterments of the soldiers and the extant parts of the harnesses of their horses. We uncovered the following categories of equipment:

- Swords, daggers, and scabbard tips (Pl. 75)
- Heads of lances, javelins, and arrows (Pl. 76)
- Armor scales and strap buckles (Pl. 77)
- One battle-ax, strap guards, bridle ornaments, and bridle bits (Pls. 78–79)

Individual specimens of martial equipment were found at many points of the Persepolis Terrace. However, massed supplies of weapons and other military objects occurred solely in certain sections of the Treasury (Fig. 19), and only the garrison quarters, paralleling the eastern fortification, showed a relative abundance of scattered objects of this character.<sup>1</sup>

Subsidiary rooms inclosing Hall 38 of the Treasury were apparently the main armories of the Persepolis garrison; but many objects of military equipment were found in the principal halls (38 and 41) as well—a fact which suggests that parts of these halls too were used for storage of weapons and the like, in the same manner as the rooms (50, 51, 40) close to the northern entrance. Archive Room 33 contained, in addition to hundreds of tablets with Elamite cuneiform inscriptions and many other objects, a considerable number of weapons.<sup>2</sup> Therefore we must consider this room too as a storage room for soldiers' equipment, though there is a bare possibility that the weapons here found had been dragged from the adjoining Room 34. The latter was a typical armory room which once contained stacks of neatly stored arrows. Pieces of their shafts are preserved in the form of carbonized lumps (see Fig. 20 B). The schema of Figure 19 is based on the following contents of the principal armory rooms of the Treasury:

Room 43	About 100 arrowheads of bronze and iron Several hundred armor scales of iron 1 javelin head
Room 44	57 arrowheads of bronze and 11 of iron Some armor scales of iron
Room 47	120 arrowheads of bronze 2 bridle ornaments
Room 48	167 arrowheads of bronze and 5 of iron 11 armor scales of iron and 4 of bronze 3 bridle ornaments
Room 39	About 1000 arrowheads, mostly bronze 1 strap guard (of bow case)
Hall 38	Several hundred arrowheads, mostly bronze Several hundred armor scales of iron and 5 bronze scales 1 gold-plated armor scale of iron 1 sword grip 3 scabbard tips 1 strap buckle 4 bridle ornaments 4 bridle bits

1. See Vol. I 206 ff.

2. *Ibid.* p. 174.

Vestibule 50	428 arrowheads of bronze (plus 26 on Stairway 49) 47 arrowheads of iron (plus 2 on Stairway 49) 8 armor scales of iron 1 lance head 1 bridle bit (1 strap buckle on Stairway 49)
Room 51	155 arrowheads of bronze and 8 of iron 1 sword hilt
Room 40	1 lance head 1 sword blade 1 dagger 5 bridle bits
Room 34	About 800 arrowheads of bronze and 132 of iron, also 8 clusters of stacked arrowheads of bronze and iron
Room 33	About 450 arrowheads of bronze and 22 of iron, also 1 cluster of stacked arrowheads of iron 2 gold-plated iron armor scales and 6 iron armor scales 3 lance heads 3 strap buckles
Hall 41	Several hundred arrowheads, mostly bronze (in NE. section) 193 arrowheads of bronze, some with remains of shafts (scattered) 1 strap buckle 1 strap guard (of bow case) 2 bridle ornaments

In the remaining portions of the Treasury there occurred only small scattered groups of arrowheads and armor scales and individual pieces of other military equipment, as shown on Figure 19. As to the garrison quarters, a sufficient quantity of weapons and remnants of accouterments were scattered about to mark these structures at the foot of the eastern fortification as soldiers' quarters. For instance, the debris of Room 9 and its adjoining Alcoves 8 and 10<sup>3</sup> contained, in addition to a horn-shaped bridle ornament, fifty-two arrowheads of iron and fourteen of bronze. The proportions of specimens of iron and bronze from this locality are unusual, for as a rule bronze heads far outnumbered those of iron.

Swords, daggers, and their scabbards must have been considered valuable booty by the conquerors. There were certainly hundreds of such weapons; but the few objects shown on Plate 75 illustrate nearly all our finds of this group. All these objects are unique, except as follows. Hilt No. 2 presumably belonged to another sword like No. 1; there are two specimens of the type of hilt No. 4, two blades such as No. 6, and three scabbard tips(?) of the type of No. 12 (one straight).

To judge by the weapons shown in the reliefs of Persepolis, blades Nos. 6 and 7 represent the Persian dagger or the Median sword (almost short enough to be called a dagger), while the long sword No. 1 seems to be an alien type of weapon. Most of the swords and daggers are made of iron. There are two hilts made of bronze. One of them (No. 9) is attached to an iron blade, suggesting that the second specimen too (No. 3) may have been combined with an iron

3. See plan *ibid.* Fig. 82.

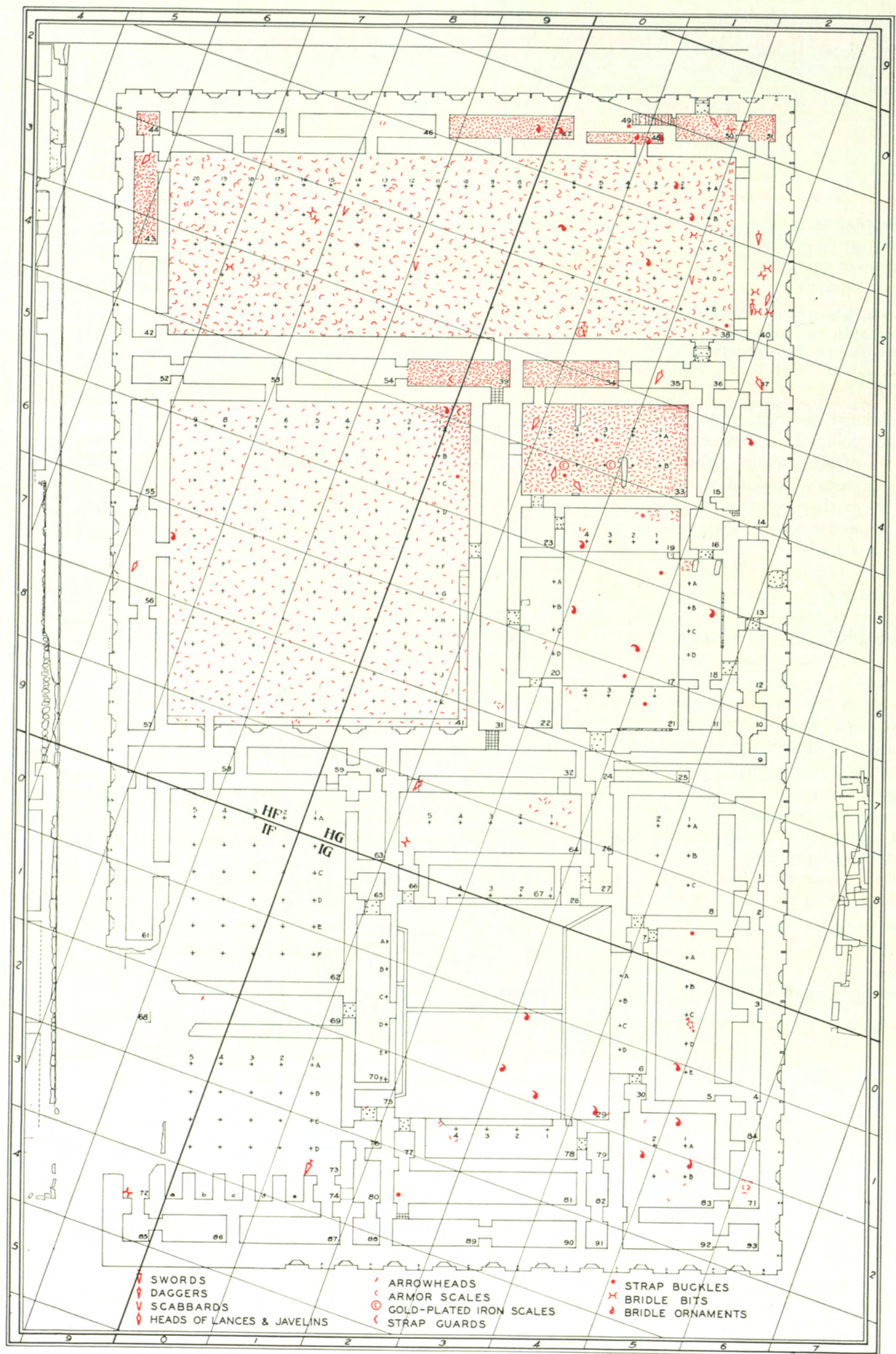


FIG. 19. FIND-SPOTS OF MARTIAL EQUIPMENT IN TREASURY. SCALE OF PLAN, 1: 500 (ALL OBJECTS SHOWN AT EXAGGERATED SCALE)  
 RELATIVE FREQUENCY OF ARROWHEADS AND ARMOR SCALES SUGGESTED BY ALLOVER PATTERNS

blade. Our excavations yielded no embellished scabbards or trefoil scabbard tips like those of certain Median swords shown in the reliefs.<sup>4</sup> A carved tip of ivory or bone (No. 10) may have belonged to a pointed scabbard of Persian type. The Persian dagger appears in reliefs of Persian dignitaries and soldiers who are pictured frontally, for the weapon is always tucked behind the belt in front. The pommel is lunate, and the pointed scabbard has a curiously broad, asymmetrical top with scalloped lower edge.<sup>5</sup> The sword of the Medes is always fastened to the right side of the belt and tied to the right thigh. Our description of the sumptuously embellished sword of the bearer of the royal weapons mentions the distinctive features of the Median sword, namely the trefoil tip and the shield-shaped upper part of the scabbard, its chape, manner of attachment, and the oblong pommel of the hilt.<sup>6</sup>

Table IX records some interesting information. The long, socketed, two-flanged type of lance head (No. 1),

TABLE IX  
FREQUENCY OF HEADS OF LANCES, JAVELINS, AND ARROWS

SERIAL NO. ON PL. 76	TYPE OF HEAD	NUMBER OF SPECIMENS FOUND	
		Iron	Bronze
1	Lance head	8	
2	Javelin head		2
3	Javelin head		2
4	Arrowhead	117	
5-6	Arrowhead	192	22
4 and 5 (mixed)	Arrowhead	ca. 500	
7	Arrowhead		114
8	Arrowhead		66
7 and 8 (mixed)	Arrowhead		ca. 3600
9	Arrowhead		7
10	Arrowhead		5
11	Arrowhead		3
12	Arrowhead		7
13	Arrowhead		3
14	Arrowhead		4
15-16	Arrowhead	9	8
17	Arrowhead		2
18	Arrowhead		2
19	Arrowhead		10
20	Arrowhead		2
21-22	Arrowhead	8	3
	Total*	ca. 834	ca. 3862

\* Several lots of uncounted arrowheads (like Nos. 4-5 and, mainly, 7-8), if added to the table, would not materially affect the relative frequencies.

which appears to be identical with the lance heads of the palace guards in Persepolis reliefs,<sup>7</sup> is represented solely by specimens made of iron. The shorter, socketed, three-flanged javelin heads (Nos. 2-3), which are perhaps not shown in the reliefs, are made of bronze only. The only frequent types of iron arrowheads are tanged, lanceolate and ob lanceolate points (Nos. 4-5). The lanceolate type (No. 4) is not represented by a single specimen in bronze, while the ob lanceolate type (No. 5) has identical counterparts in twenty-two bronze specimens (No. 6). These two types of arrowheads may have been employed for specific targets, since they are about twice as long as most arrowheads of the only other frequent type. The latter, illus-

4. See *ibid.* e.g. Pl. 65.

5. See *ibid.* e.g. Pls. 51-52, also two daggers of Persian type among gifts of Susian delegation (Pl. 28).

6. See *ibid.* pp. 165-66 and Pl. 120; see *ibid.* Pl. 27 for sword offered by Median delegation and Pl. 65 for ornamented scabbard tips. The sword of the Saka Tigraxauda (*ibid.* Pl. 37) is identical with that of the Medes, and the sword offered as a gift by the assumed Sogdians (Pl. 43) differs only in the shape of its pommel, which suggests two horns.

7. See *ibid.* e.g. Pl. 151.

trated by two variants (Nos. 7-8) with socket and three flanges of varying length, is exactly paralleled in form by the larger javelin heads (Nos. 2-3) and represents the by far most frequent form of Achaemenid-Persian weapon head. Plate 76 shows a much greater variety of points of bronze than of iron.<sup>7a</sup> In addition to the two types of iron arrowheads mentioned above there are only two more forms represented in our collection: a tanged, three-flanged arrowhead (No. 15), which has its counterpart in bronze (No. 16); and a small, tanged point with lanceolate blade (No. 21), also paralleled by a few bronze specimens (No. 22). It may well be possible that some of the infrequent types of arrowheads from Persepolis (Nos. 9-22) will be found to be of foreign provenance.<sup>7b</sup>

Finally, four arrowheads (not illustrated) found near the surface or in questionable debris are undoubtedly post-Achaemenid. They are distinguished by unusually long tangs, roughly twice as long as the heads, two of which have triangular and rhomboid cross sections respectively, while the others are flat and lanceolate.

As to the attachment of the socketed points to the arrow shafts, Figure 20 *A* gives an instructive example. The wooden shaft head here shown was preserved by charring,

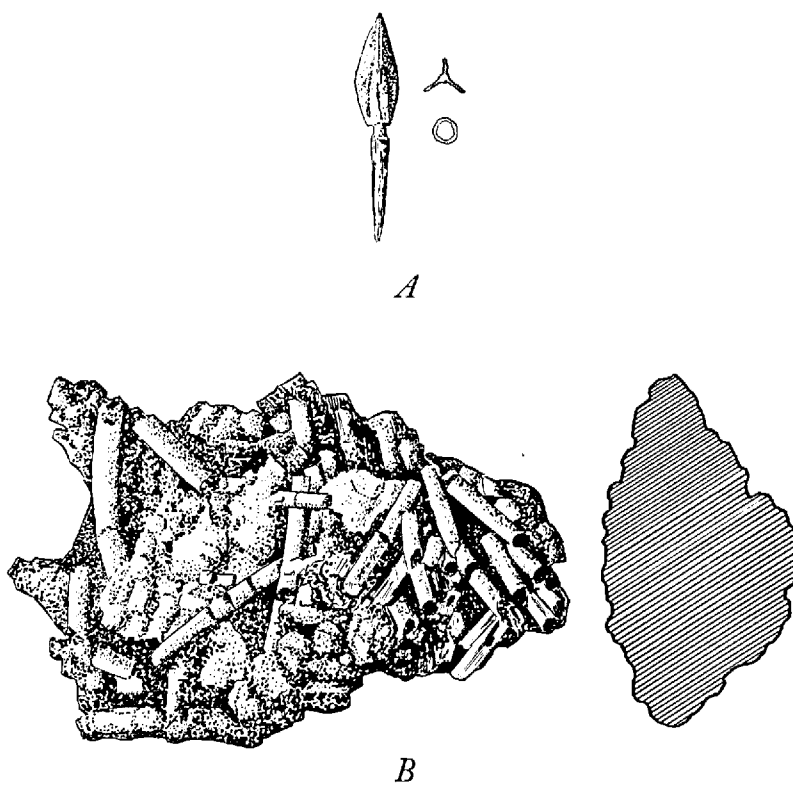


FIG. 20. ARROWS FROM TREASURY. SCALE, 1:2. *A*. BRONZE ARROWHEAD WITH WOODEN SHAFT HEAD (PT6 578c) FROM HALL 41. *B*. CLUSTER OF CHARRED ARROW SHAFTS (PT4 1114a) FROM ROOM 34

and it sticks in the socket of a bronze point. The tapering form of the shaft head suggests that it was made separately and inserted into the shaft proper. After hitting its target, the arrowhead with the shaft head would stay lodged in the wound when the shaft was pulled to remove the missile. Figure 20 *B* illustrates a lump of charred wood or reed fragments of arrow shafts. The two sizes of shafts represented may have bearing on two sizes of arrowheads found near by in the same room (Treasury Room 34). There

7a. For spectrographic analyses of one iron (PT3 434) and one bronze (PT3 440) arrowhead see Table XIV (p. 136).

7b. For arrowheads from Susa see now Ghirshman, *MDP XXXVI* 31 f. and 63.

were four clusters of large iron arrowheads (like Pl. 76:4-5)<sup>7c</sup> together with some smaller bronze heads (like Nos. 7-8).

In spite of the fact that great quantities of armor scales, single and in clusters, were found in the Treasury, and to a lesser extent in the quarters of the garrison, altogether these scales would have protected less than a dozen men. We believe, therefore, that the conquerors considered suits of armor, like swords and similar martial equipment, as valuable booty, worth removing. Obviously this applies above all to gilded mail.<sup>8</sup> Only three small gold-plated iron scales (Pl. 77:1-3) appeared during all our excavations. Bronze scales were almost equally rare. There are only eleven units (e.g. Pl. 77:4-5) in our collection. Two of them have identical oblong knobs in the center. There are hundreds of small and medium-sized iron scales (e.g. Pl. 77:11-16), while large scales (e.g. Nos. 6-10) are less frequent. It is possible that the large scales were parts of the armor of horses.<sup>9</sup>

The objects illustrated by Nos. 17-21 on Plate 77 we identify tentatively as strap buckles. With the exception of No. 21, which is made of iron with gold foil, all these objects are of bronze. The type with roughly square front (Nos. 17-18) is represented by thirteen specimens. There are three oblong buckles (e.g. No. 19), while the two remaining objects (Nos. 20-21)—probably parts of the gear of horses—are unique. The most frequent design is a checkerboard of alternating scrolls and plain fields, as illustrated by Nos. 18 and 19.<sup>10</sup>

The bronze head of a battle-ax (Pls. 78:1, 79:1) is the only specimen of its kind found in the excavations. It resembles closely the head of the royal battle-ax shown in the southern relief of the Treasury<sup>11</sup> and in similar representations of the carrier of the royal battle-ax and bow, that is, in the northern doorways of the Throne Hall and on the royal tombs.<sup>12</sup> The axhead has two spikes: one, extending from the top of an ornamental ram head,<sup>13</sup> has a single point, while the opposite spike is an expanding cylinder with bifurcate projection. In the reliefs the royal weapon has the bifurcate spike, but the opposite spur consists of a blade projecting from the beak of a bird.

We found three strap guards of bronze (e.g. Pl. 79:2), whose purpose is demonstrated in the Treasury relief by an apparently identical object which keeps the strap of the royal bow case from slipping out of the hand of the dignitary carrying it.<sup>14</sup>

Pairs of horn-shaped bridle ornaments such as those illustrated by Plate 79:3-6 are attached to the cheekpieces on many horses in the Persepolis reliefs.<sup>15</sup> Our records list thirty-three slightly curved horns (e.g. Nos. 3-5), presumably meant to represent the tusks of boars, and two

specimens with curled points (e.g. No. 6). The following materials were used:

	Number of Curved Horns	Number of Curled Points
Carnelian	3	
Agate	1	
Limestone	6	1
Chalk	13	
Stone	6	1
Boar's tusk	3	
Bone	1	

Crossing straps of the headgear were guided through two perforations, either cross-shaped or running crosswise, one above the other.

All fifteen bridle bits (e.g. Pls. 78:2-4, 79:7-9) which were found in the Treasury and the quarters of the garrison are made of bronze.<sup>16</sup> The bit proper is always flexible, with two (rarely three) circular links in the center. Nearly all bits are studded with atrocious knobs. In one case (Pls. 78:3, 79:8) the bit is merely roughened. The side bars are either curved or straight. The rein straps were attached to the ring at either side, while two straps of the headgear ran through the perforations above and below the central rein ring. The details of the side bars are plainly marked on certain reliefs.<sup>17</sup> A Persian bridle bit of the same type as our Persepolis specimens but wrongly identified as "die älteste griechische Trense" was found in the "Perserschutt" on the Acropolis of Athens.<sup>18</sup> Another very similar specimen probably contemporaneous with our bridle bits was found in Gori (Georgia, U.S.S.R.).<sup>19</sup> A third specimen of the same type was found in Luristan.<sup>20</sup>

Except for scale armor, the use of which is amply proved by our finds but never indicated in the reliefs, all categories of marital equipment listed on page 97 are represented in the Persepolis sculptures. In addition, the reliefs give us invaluable information concerning those items of military equipment which consisted largely of perishable material, namely, shields, bows, bow cases, quivers, chariots, and the harnesses of horses. A tall, rectangular shield—of wickerwork, as indicated by the pattern of vertical ribs—protects the Persian soldiers who guard the entrances to the palaces.<sup>21</sup> Smaller, elliptical shields, perhaps made of leather, are carried by files of Persians shown on the monumental staircases of public buildings and—presumably representing bodyguards of the king—on doorway reliefs of the Throne Hall.<sup>22</sup> The edges of these shields, the central buckle in the shape of a formée cross, and the edges of openings at either side of the buckle seem to consist of

16. There is half a side bar of one specimen of iron which occurred in the shallow deposit of Room 72 (20 cm. above the floor) in the southwest corner of the Treasury (Plot IF 49). The date of this object (PT6 433) is questionable.

17. See Vol. I, e.g. Pl. 52.

18. Erich Pernice, *Griechisches Pferdegeschirr im Antiquarium der Königlichen Museen* ("Programm zum Winckelmannsfeste der Archaeologischen Gesellschaft zu Berlin" LVI [Berlin, 1896]) pp. 3 and 20; notes and bibliography on p. 34, Nos. 24-25.

19. Illustrated in Sándor Gallus and Tibor Horváth, *Un peuple cavalier préscythique en Hongrie ...* (Budapest, 1939) Pl. LXXXII 9.

20. See André Godard, "Bronzes du Luristan," *Athār-é Irān* III (1938) 242 f. and Fig. 157.

21. Vol. I, e.g. Pl. 151.

22. *Ibid.* e.g. Pls. 100-101.

7c. See *OIC* No. 21, Fig. 28 (PT4 994).

8. For references to Persian scale armor of iron and gold see Herodotus vii. 61 and ix. 22.

9. Cf. Xenophon *Cyropaedia* vii. 1. 2.

10. For the design of No. 17 cf. *IAE*, Fig. 371.

11. Vol. I, Pl. 121.

12. The slender socketed battle-axes offered by the Sogdian(?) delegation are somewhat similar (see *ibid.* Pl. 43), whereas the double-edged hatchets of the Indians (*ibid.* Pl. 44) are quite distinct.

13. The side view of this object in *OIC* No. 21, Fig. 30, was inverted by mistake.

14. Vol. I, Pl. 121.

15. See *ibid.* e.g. Pl. 52.

metal.<sup>23</sup> Unsheathed bows are slung over the left shoulders of many soldiers—Medes, Persians, and Susians—and their complete shape is shown by two specimens offered as gifts by the Susian delegation.<sup>24</sup> Bow cases of stereotyped shape and the manner of their attachment to the left side of the belt are well illustrated in the reliefs of Persian and Median dignitaries in the Apadana processions.<sup>25</sup> This type of bow case seems to be a closed version of the Scythian

23. For good illustrations see *ibid.* Pls. 22 and 25 A; see also the circular shields among the gifts of the Gandarian(?) and Drangianian(?) delegations (*ibid.* Pls. 40 and 47 respectively) and the shields with almost semicircular cross section and ribbed (wickerwork?) pattern offered by the Skudrian(?) delegation (*ibid.* Pl. 45).

24. *Ibid.* Pl. 28.

25. *Ibid.* e.g. Pls. 51–52; for the king's bow case carried on the weapon-bearer's left shoulder see *ibid.* Pl. 121, and for what appears to be an open bow case see Pl. 155.

*gorytus*—that is, a container for both bow and arrows<sup>26</sup>—to judge by the fact that none of the soldiers or dignitaries equipped with a bow case is provided with a separate quiver.<sup>27</sup> Soldiers armed with an unsheathed bow carry on their back a long tapering quiver with closed top and ornamental, arrow-shaped tassels.<sup>28</sup> We have previously dealt with the chariots and the harnesses of the horses shown in the reliefs of the Apadana,<sup>29</sup> and the only identifiable remnants of the horses' gear, horn-shaped ornaments and bridle bits, are described above.

26. See Ellis H. Minns, *Scythians and Greeks* (Cambridge, 1913) pp. 66 ff. and Fig. 94.

27. See Vol. I 166.

28. For good illustrations of quivers, including the manner of fastening the lids, see *ibid.* Pls. 83–84.

29. *Ibid.* p. 84 and Pl. 52; see also Pls. 32 and 48.

## TOOLS AND UTENSILS

## CLASSIFICATION, FREQUENCIES, FIND-CONDITIONS

We have grouped the sample objects shown on Plates 80 and 81 according to their uses, or assumed purposes, as follows:

		Plate 80	Frequency
Digging	Hoe	1	2
	Spade	2	3
	Spade	3	1
	Plowshare?	4	3
Chopping	Adz	5	1
Grinding	Mortar, limestone	6	7
	Mortar, bronze	7	1
	Pestle, bronze	7 B	3
	Pestle, limestone	8	2
	Pestle, limestone	9	1
	Bowl	10	1
Rubbing	Polishers	11-13	9
	Polisher?	14	1
		Plate 81	Frequency
Spinning and weaving	Whorl	1	3
	Whorl	2	3
	Whorl	3	2
	Whorl	4	1
	Whorl	5	1
	Whorl	6	1
	Whorl	7	1
	Toggle pin	8	12
Lifting	Loom weight?	9	1
	Pulley wheel?	10	10
Cutting and sharpening	Hook and chain link	11	3
	Chain	12	1
	Knife	13	10
	Knife	14	2
	Razor?	15	2
Punching	Saw	16	2
	Whetstones	17-18	6
	Chisel	19	1
	Punch	20	4
Sewing and fastening	Needle	21	3
	Needle	22	1
	Needle	23	1
	Spikes	24-26	26
Suspending	Tacks	27-28	6
	"Curtain rings"	29-31	23
Joining	Hinge	32	2
	Clamp	33	2
	Clamp	34	2
	Clamp	35	3
	Clamp (or handle?)	36	2
	Game(?) pieces	37a-b	32
Miscellaneous objects	Game(?) piece	38	1
	Bolt?	39	5
	Bolt or handle?	40	1
	Bone fragment	41	1
	Bone fragment	42	1
	Bone fragment	43	2
	Rod	44	1
	Double tube	45	1
	Cone	46	5
	Buckle	47	2
	Ring	48	1
U-shaped device	49	1	

	Plate 81	Frequency
Disk	50	1
Spouted object	51	1
Harness(?) ornament	52	1
Mirror	53	1

Most of the objects under consideration were found scattered in various parts of the Treasury and the garrison quarters. Some occurred in the streets bordering the Treasury, in the northern part of the Harem, in the southern section of the Apadana and the courtyard north of this structure, and in the portico of the Throne Hall.

The find-conditions of a few of these objects may be of interest. For instance, all seven of the rather crude limestone mortars were found in Treasury Hall 38, where also the majority of green chert mortars occurred (see below). All three plowshares(?) were found in Room 40 of the Treasury. The same room contained seven out of ten pulley wheels(?). One of the remaining wheels was in the adjacent Room 51, one in Room 8 of the northern part of the Harem, and one in the portico of the Throne Hall.

## NOTES TO PLATE 80

The two bronze hoes illustrated by No. 1 have almost identical rectangular blades and off-center sockets for the (decayed) wooden handles. The inner edges of three horse-shoe-shaped objects (e.g. No. 2) are split, suggesting that spatulate ends of wooden handles were here inserted (and held by rivets, presumably). A tool of this kind would qualify as a short spade. A more efficient spade is illustrated by the unique specimen No. 3. Tool No. 4 was once identified tentatively as a halberd.<sup>1</sup> We are now inclined to consider this object a simple form of plowshare, although its point appears to be rather weak for this purpose.

Axes, mattocks, and the like existed, of course,<sup>2</sup> but none were found in our excavations. The adz (No. 5) occurred in a rather shallow deposit. It is doubtful, therefore, whether it should be assigned to the major occupation of the site or to some later period.

A bronze mortar (No. 7) and pestles (see e.g. No. 7 b) of the same material may well have been used for the same ritualistic purposes as the corresponding objects of green chert, many of which are identical in shape (see p. 55 and Pls. 23:1-2 and 4, 24:7-12). On the other hand, the only possible reason for assuming that the seven crude—in some cases lopsided and poorly finished—limestone mortars (e.g. No. 6) were used for the same purposes is the fact that they occurred in Hall 38, where most of the chert mortars were found. In contrast to most of the chert mortars and pestles, none of the limestone mortars and pestles (Nos. 8-9) show traces of inscriptions. The bowl (No. 10)

1. See *OIC* No. 21, Fig. 29 (PT5 276) and p. 49.

2. For well wrought prehistoric ax and mattocks see Schmidt, *Excavations at Tepe Hissar, Damghan*, Figs. 119-20 and Pl. LII (H 2710, H 3247); *Mj* XXIII (1932-33) Pl. CXVIII (H 168).

may have been used in grinding cereals or in extracting juice from fruits.

Specimens Nos. 11–13 represent the ubiquitous polishing stones. Objects of this type could have been used as pounding stones, of course, but we did not notice any battered surfaces, and no hammers of distinctive form were found. The unusually long and carefully wrought stone bar No. 14 must have had a specific purpose, though related to that of the polishing stones.

#### NOTES TO PLATE 81

The spindle whorls (e.g. Nos. 1–7) found at Persepolis are quite characterless and might be encountered in almost any pre-Islamic site. The toggle pins (e.g. No. 8) may have been used in gathering thread or yarn, or as guards at the ends of cords. The object tentatively identified as a loom weight (No. 9) is the only specimen of its kind found at Persepolis. Its find-spot does not exclude the possibility that it belongs to a post-Achaemenian period.

The ten wheel-shaped bronze objects of our collection are all close in size to the example illustrated (No. 10). Their rims are deeply grooved, and in several instances the remnants of an iron pin are preserved in the axial perforation. Our tentative identification of these devices as pulley wheels would be more certain but for the fact that the two ends of the pin are not symmetrical. The sample specimen shows that the right portion of the pin continues without taper beyond the point corresponding to the definitely marked termination of the tapering portion of the left end. One could imagine that our bronze wheels were the hubs of chariot wheels attached to the remnants of iron axles. However, there is no clue for the attachment of the spokes to the hub.<sup>3</sup> Thus, until a better explanation is found we have to assume that our bronze wheels were used for the lifting of weighty objects. The chains illustrated by Nos. 11–12 could have been used, of course, for fastening as well as lifting. For instance, the chains of the censers in the Treasury reliefs (Pl. 69 *F*) have S-shaped links like that of No. 11, and the annular links of No. 12 are close to those of the censer chains in the Throne Hall reliefs.<sup>4</sup>

All the blades of knives (e.g. Nos. 13–14), razors? (e.g. No. 15), and saws (e.g. No. 16) found at Persepolis were made of iron. There are short and long knives, pointed and blunt, and some show traces of rivets for the attachment of the handle of perishable material. Object No. 15 has the characteristic form of a razor. Both saw blades have one serrated edge, parallel to the plain blunt edge. The whet-

stones, all of them fragmentary (e.g. Nos. 17–18), have rectangular or circular cross sections.

It is strange that only one chisel was found (No. 19). However, unidentifiable fragments of rods of iron and bronze may have been parts of chisels, gouges, punches (see No. 20), and the like.

In addition to needles (Nos. 21–23) and spikes and tacks of various sizes (Nos. 24–28), our group of utensils for sewing and fastening actually includes ornamental nails, discussed in the section on applied ornamentation (pp. 74 *f.* and Pl. 42:35–44), as well as clasps and pins, which are described with objects of personal adornment (p. 79 and Pl. 46:5–25).

In our description of the Treasury we mentioned that we are inclined to consider as curtain rings numerous almost identical bronze tubes (e.g. Nos. 29–31) with riveted flanges, often found in rooms whose doorways showed no clues of having been shut by substantial doors.<sup>5</sup> In one of these rooms not less than seven such bronze tubes were found close together;<sup>6</sup> one of them (No. 30) contained definite remnants of wood, and decayed wooden flakes pierced by the ends of a bronze nail or rivet adhered to either side of the flanges.<sup>7</sup> This suggests that the cylinders had been strung on a wooden rod—the assumed curtain rod—and that strips of wood had been fastened to both sides of the flanges. There is no clue as to how exactly the assumed curtains (of cloth or matting?) were fastened to the wooden strips, and the small diameter of the bronze tubes proves that the “curtain rods” were too thin to hold heavy fabrics. Alternatively, our bronze tubes could have been used as hinges for the lids of chests, or the like.

Devices for joining include two small hinges, each with two lugs (e.g. No. 32), and various clamps whose exact purposes are conjectural (e.g. Nos. 33–36).

There is no proof that the small bone cylinders with domed or conoid heads (e.g. Nos. 37–38) were actually used as game pieces, but we can offer no better suggestion as to their purpose.

An assortment of miscellaneous objects—in most cases of problematical or doubtful use—is illustrated by Nos. 39–53. Some bone fragments (Nos. 41–42) may be parts of small receptacles, and others (e.g. No. 43) may represent lids. Bronze disks with two shanks (e.g. No. 47) could have been included in the group of strap buckles (see Pl. 77:17–21), and the embossed disk No. 52 may be tentatively identified as a harness ornament. There is hardly a doubt that a fragment of a bronze disk with a flat handle (No. 53) is the remnant of a mirror.

#### A STAMP

A fragment of an interesting stamp of baked clay is shown on Figure 21. The object (with gray and orange surface and porous orange paste) was presumably not much longer than its preserved portion. It may be that only the curve of one end is missing, corresponding to the extant end. The back of the object is domed and fits the hollow of

the hand. Its stamping surface is flat and bears in low relief a pattern of interlocked meanders. This design was obviously meant to be impressed into soft substances, such as clay, plaster, or the like, or to be imprinted—after inking—on fabric of some kind. As we have found no trace of the

3. Cf. Vol. I, Pl. 52, where royal chariots are depicted.

4. *Ibid.* Fig. 60 *C*.

5. See *ibid.* p. 160.

6. Room 86; see *ibid.* p. 197.

7. Parts of the wood had crumbled before the object was drawn by the field artist. Thus our illustration shows only the remnant preserved on one side of the flanges.

## OBJECTS FROM THE PERSEPOLIS TERRACE



FIG. 21. STAMP OF BAKED CLAY (PT5 33) FROM COURTYARD NORTH OF APADANA (PLOT GE 21). SCALE, 1:2

use of stamps in any of the excavated structures of the site, we must assume that such devices were used to imprint patterns on objects of perishable material. Furthermore, we have to consider that the meander pattern of the stamp does not appear in any Persepolitan relief. Thus, our stamp may be a product of foreign workmanship, or it may actually belong to some post-Achaemenid period. Its find-spot, in courtyard refuse north of the Apadana, is indecisive.



## WEIGHTS

## CLASSIFICATION, FREQUENCIES, FIND-CONDITIONS

Our collection includes pyramidal stone weights, duck weights of stone and bronze, and an assortment of lead and bronze objects whose forms suggest weights, although it is doubtful whether they were actually used for this purpose. All objects concerned were discovered in the Treasury except for two found in a trench outside the northeast corner of that building.

The most important specimens are inscribed well wrought pyramidia with flat rectangular base, slightly curved sides, and domed top. There are four examples of this group, but only two of them are well enough preserved to give useful information. One (Pl. 82:1) was found in the extraordinarily fertile Archive Room 33, and the other (Pl. 82:2) in Room 3 of the earliest section of the Treasury.<sup>1</sup> Two fragments (PT4 494 and PT4 972; not illustrated), whose forms and remnants of inscriptions mark them as parts of pyramidal weights, were found in the neighborhood of Room 33, namely in Rooms 16 and 15 respectively.<sup>2</sup>

The two duck-shaped weights found in the course of the excavations are illustrated on Plate 82:3-4. The stone duck, whose reverted neck and head lie flat on its back, also occurred in the archive room. The object was cracked and chipped by the violent fire which was fed by the combustible contents of the room. The bronze duck was found high above the floor in the northern vestibule (50) of the Treasury.<sup>3</sup> The reverted head of this specimen loops above the back, resulting in an opening for suspension. The offset flat fan at the rear end suggests either tail feathers or the combined stylized feet of a swimming duck.

The objects tentatively classified as weights were scattered in various sections of the Treasury and directly outside the building (Pl. 82:5-10). Five of these specimens are of lead, namely a plano-convex rectangle (No. 5), a flat oblong (No. 6), flat (No. 7) and plano-convex (No. 8) disks, and a pitted oblong lump (No. 9). There is, finally, a rectangular bronze tablet (No. 10) with projections on one face.

## PYRAMIDAL WEIGHTS

## PREVIOUSLY KNOWN EXAMPLES

The shape of the only official Achaemenid stone weights so far known to us, namely the pyramidion, was borrowed by the Persians from Mesopotamia. This is sufficiently proved by the existence of a pyramidal half-mina weight of Shulgi,<sup>4</sup> a king of the 3d dynasty of Ur who ruled toward the end of the 3d millennium,<sup>5</sup> and by a Neo-Babylonian one-mina pyramidion of Nebuchadnezzar II (605-562 B.C.). The inscription on the latter specimen refers to the weight standard established by King Shulgi.<sup>6</sup>

Two Achaemenid pyramidal weights were known prior to the excavation of Persepolis. One—labeled “Dar. Pond. a”<sup>7</sup> and “Wa”<sup>8</sup>—whose provenance is unknown, is now in the British Museum in London (No. 91,117).<sup>9</sup> So far as the

writer could ascertain, no illustration of this object has been published. It has been suggested that this specimen had been a part of a larger weight and was converted to its present size.<sup>10</sup> Its dimensions are as follows: height, 5.1 cm.; breadth, 4.4 cm.; thickness, 4.1 cm. Its material has been defined as black-green basalt. Its weight is 166.724 grams. The stone bears a trilingual inscription in Old Persian, Elamite, and Babylonian, translated as follows:<sup>11</sup>

2 karsha.<sup>12</sup>  
I (am) Darius the Great King,  
son of Hystaspes, an Achaemenian.

The second pyramidal weight, whose original find-spot is likewise unknown, was discovered in a Moslem shrine near Kirman and is now (presumably) deposited in the Asiatic Museum in Leningrad. The story of this stone was narrated by Weissbach,<sup>13</sup> who subsequently labeled it “Dar. Pond. b.”<sup>14</sup> Its latest designation is “Wb.”<sup>15</sup> The dimensions of the weight—apparently determined by means of a plaster copy—are as follows: height, almost 10.5 cm.

10. See Weissbach in *ZDMG* LXV 678, n. 4.

11. See *KA*, p. 105, and *OPG*, pp. 156 f.; while the numbers of lines are known (*OP* 8, El. 7, Bab. 5), the location of the three versions on the stone are nowhere recorded; see original, partly erroneous, publication by Budge, “On a Babylonian weight with a trilingual inscription,” *Proceedings of the Society of Biblical Archaeology* X (London, 1888) 464-66.

12. Bab.:  $\frac{1}{2}$  mina.

13. “Die sogenannte Inschrift von Kerman,” *Bulletin de l'Académie impériale des sciences de St.-Petersbourg*, 6th series, IV (St. Pétersbourg, 1910) 481-86.

14. *KA*, pp. XXII f.

15. *OPG*, p. 114.

1. See Vol. I 174, 193 and Figs. 77 B, 81 A (find-spots).  
2. See *ibid.* p. 175.  
3. See *ibid.* p. 186.  
4. Formerly read “Dungi”; thus referred to by Michel-C. Soutzo, “Étude des monuments pondéraux de Suse,” *MDP* XII 31, 42 (No. 47); Weissbach, “Neue Beiträge zur keilinschriftlichen Gewichtskunde,” *ZDMG* LXX (1916) 58, § 22.  
5. 2010-1963 B.C. according to Ernst Weidner, “Bemerkungen zur Königsliste aus Chorsābād,” *AOF* XV (1945-51) 98; earlier publications assign Shulgi's reign to the 23d century B.C. The exact date is still controversial.  
6. See British Museum, *A Guide to the Babylonian and Assyrian Antiquities* (3d ed.; London, 1922) p. 138, No. 7 (illustration on p. 137); Weissbach, “Zur keilinschriftlichen Gewichtskunde,” *ZDMG* LXV (1911) 639, and in *ZDMG* LXX 53-54, § 11.  
7. *KA*, p. XXII, with bibliography.  
8. *OPG*, p. 114.  
9. British Museum, *A Guide to the Babylonian and Assyrian Antiquities* (3d ed.) p. 144, No. 79.

breadth, about 10.9 cm.; thickness, about 10.7 cm.<sup>16</sup> The object itself consists of a "hard greenish-black stone"<sup>17</sup> weighing 2222.425 grams.<sup>18</sup> The trilingual inscription—without indications of units of weight—is engraved on three of the lateral faces in such a fashion that the Elamite (6 lines) is in the center, the Old Persian (9 lines) at the left, and the Babylonian (4 lines) at the right.<sup>19</sup> The fourth face of the pyramidion, opposite the Elamite version, is blank. The translation reads as follows:<sup>20</sup>

I (am) Darius the Great King,  
King of Kings, King of countries,  
King in this earth, son of Hystaspes,  
an Achaemenian.

#### NEWLY DISCOVERED EXAMPLES

It is possible that all Achaemenid pyramidal weights known so far (except, perhaps, our fragment PT4 494; see below) were made of the hard, fine-grained, gray-green stone which we consider diorite. The larger of the two Persepolis specimens (PT3 283; Pl. 82:2) is exceptionally well finished. It measures 20.3 cm. in height, 17.7 cm. in breadth, and 13 cm. in thickness. In using this stone for metrological studies, one must allow for its chipped base. In its present condition it weighs 9950 grams. A trilingual inscription in Old Persian, Elamite, and Babylonian is engraved in the sequence mentioned in a panel which begins on the domed top and extends down one of the broad faces of the stone. There are only minor differences between the text of this inscription and that of the Kirman weight, except for a significant addition: On the Persepolis specimen (as on the London weight; see p. 105) each of the three versions is headed by an indication of the weight of the stone, namely "120 karsha" (OP and El.) or "20 mina" (Bab.).

The inscription of the second Persepolis weight (PT4 736; Pl. 82:1) is composed in the same manner, but here only the Old Persian and Elamite texts are engraved on one broad face, while the Babylonian version appears on the adjacent narrow face to the right. The weight units marked above the Old Persian and Elamite versions, namely "60 karsha," indicate that the stone had originally half the weight of the preceding specimen. The corresponding weight indication of the Babylonian version, namely "10 mina," is mostly mutilated. Except for the weight units noted, the translations of the texts of the two Persepolis stones and the Kirman weight are identical (see above). The smaller Persepolis specimen measures 14.6 cm. in height, 13.7 cm. in breadth, and 12.4 cm. in thickness. In this case too the weight was originally somewhat greater than it is at present (4930 grams), for parts of one face are badly chipped (see Pl. 82:1*b*).

As to the two Persepolis fragments mentioned above (p. 105), one (PT4 494), made of gray stone, preserves

portions of the right ends of superposed Elamite and Babylonian versions identical with parts of the inscription on weight PT3 283, although the line arrangement on the fragment differs slightly. The size and shape of the fragment, together with the position of the inscription, prove that it belonged to a stone of the same weight (120 karsha or 20 mina) as our PT3 283.<sup>21</sup> The second fragment (PT4 972), made of gray-green diorite, shows a remnant of an Elamite version identical—except for a slight difference in the line arrangement—with the corresponding parts of the inscriptions on the better preserved Persepolis weights. However, the positions of the three versions of the inscription differed from those of the other inscriptions, for the fragment shows the Elamite text below the extant part of the top. This indicates, undoubtedly, that the three versions were engraved on three faces of the stone in the same fashion as the inscription of the Kirman specimen (see above). Again, in contrast to the latter object, the inscription of our fragment was headed by an indication of its weight, for the extant right end of its uppermost line<sup>22</sup> preserves part of the last sign of the Elamite word (*kur-ša-um*) for Old Persian *karšayā*.

#### THE UNITS OF WEIGHT

It is possible that further excavations at Achaemenid sites will result in the discovery of weights bearing the names of later kings, but at present the only extant specimens marked by their inscriptions as official weights are pyramidia inscribed with the name of Darius (I) the son of Hystaspes.

There is no doubt that these carefully wrought and inscribed stones were standard precision weights of the time of Darius I. Whether originals, or replicas of primary models of newly standardized weights,<sup>23</sup> the Persepolis stones employed in the "Treasury of the King,"<sup>24</sup> must have represented accurately the weights stated in their inscriptions. Unfortunately, even our two relatively well preserved specimens show mutilations which have decreased their weight. Thus, in calculating the units defined in the inscriptions, we arrive solely at minimum figures which indicate that the units concerned cannot have weighed less. For instance, one karsha on the basis of the present weight (9950 grams) of the better preserved specimen (PT3 283; 120 karsha or 20 mina) must have weighed more than 82.916 grams and one mina more than 497.5 grams.<sup>25</sup> The London specimen (2 karsha or  $\frac{1}{3}$  mina; see p. 105), weighing 166.724 grams, suggests a weight of 83.362 grams for one karsha and 500.172 grams for one mina. The figures derived from the London stone must be very close to the actual weights of the Achaemenid units, though perhaps slightly below the latter if it is true that the stone concerned has lost some substance through ab-

16. Weissbach in *Bulletin de l'Académie impériale des sciences de St.-Petersbourg*, 6th series, IV 483.

17. *Ibid.*

18. *Ibid.* p. 486.

19. For illustrations and description see A. V. Williams Jackson, "Textual notes on the Old Persian inscriptions," *JAOI* XXVII (1906) 190-94; repeated in the same author's *Persia Past and Present*, pp. 181-84.

20. See *KA*, p. 105, and *OPG*, p. 157.

21. It is possible, however, that the Bab. text on the fragment was not headed by an indication of the weight.

22. Indented after the fashion of the headings of the OP versions on PT4 736 and PT3 283 (see Pl. 82:1*a*, 2*b*).

23. See Olmstead, *History of the Persian Empire*, pp. 185 f.

24. See *OIP* LXV 9.

25. The corresponding figures for the more seriously mutilated specimen (PT4 736; 60 karsha or 10 mina), weighing 4930 grams, are 82.166 grams for 1 karsha and 493 grams for 1 mina.

ration.<sup>26</sup> The inscription of the Kirman stone (see pp. 105–6) does not mention any units of weight, but it has been pointed out<sup>27</sup> that the ratio of the present weights of the

London and Kirman specimens, that is, 166.724:2222.425 (= 1:13.3299), corresponds to the ratio of silver and gold (1:13 $\frac{1}{3}$ ) prevalent during the Achaemenian period.<sup>28</sup>

#### DUCK WEIGHTS AND OBJECTS SUGGESTING WEIGHTS

The excavation of Persepolis yielded no weights in the form of lions, nor ellipsoid stones marked as weights by inscriptions.<sup>29</sup> Duck weights, frequently found in sites of the western lowlands,<sup>30</sup> are represented by two unmarked specimens only, namely a stone duck (Pl. 82:3) weighing 42 grams at present and a bronze duck (Pl. 82:4) weighing 62.22 grams before removal of its patina and 58.65 grams after cleaning. None of these figures correspond exactly to

the original weights of the objects, for the stone specimen was badly spalled by fire and the weight of the bronze duck is too high if its patina is included,<sup>31</sup> too low after cleaning if allowance is made for loss of substance.

The purpose of the remaining specimens (Pl. 82:5–10), whose present weights appear in the table facing Plate 82, is conjectural, but their specifications may prove to be useful in case the find-conditions or weight marks of similar objects, yet to be discovered, should substantiate our suggestion that these specimens were used as weights.

26. See Regling, "Dareikos und Kroiseios," *Klio* XIV (Leipzig, 1915) 98.

27. See e.g. *KA*, pp. LXXIV f.

28. For metrological studies dealing with ancient weights, in addition to those referred to above in nn. 4, 6, and 26, and for further bibliographical references, see Johannes Brandis, *Das Münz-, Mass- und Gewichtswesen in Vorderasien bis auf Alexander den Grossen* (Berlin, 1866); Weissbach, "Über die babylonischen, assyrischen und altpersischen Gewichte," *ZDMG* LXI (1907) 379–402 and 948–50; Regling and Lehmann-Haupt, "Die Sonderformen des 'babylonischen' Gewichtssystems," *ZDMG* LXIII (1909) 701–29. See also *OIP* LXV 37–39.

29. For such weights from other sites see Georges Lampre, "La représentation du lion à Suse," *MDP* VIII 159–76; Soutzo in *MDP* XII 8–12 and 21 f.; Maurice Pézard, "Un nouveau poids de l'époque kassite," *RA* IX (1912) 107–9.

30. Soutzo, *op. cit.* pp. 1–8 and 13–15.

31. Weissbach pointed out that the weight of metal objects is increased by oxidation; see *ZDMG* LXX 61.

## MEASURES OF CAPACITY

A cosmetic bottle (Pl. 83:3) was found in 1932 during Herzfeld's excavations in the Fratadara temple, about 300 meters northwest of the Persepolis Terrace.<sup>1</sup> While the Fratadara complex is definitely post-Achaemenid (assumedly 3d century B.C.), the object concerned is either Achaemenian or earlier, most probably Neo-Babylonian.<sup>2</sup> The vessel, made of dolomitic marble,<sup>3</sup> has the characteristic bulbous shape with rounded bottom and knob handles—features which distinguish the cosmetic bottles which are carried in the Persepolis reliefs by the king's personal attendants.<sup>4</sup> The missing top of the Fratadara specimen can be reconstructed with the aid of almost identical vessels found in the Persepolis Treasury (see p. 90 and Pl. 65:1, 12). The lowest point of the fracture coincides exactly with the slightly offset base of the vessel neck, which at the highest point of the fracture is preserved to a height of half a centimeter. The knob handles are somewhat rhomboid oblongs tapering to a medial lengthwise ridge.

The Fratadara vessel bears a short cuneiform (Bab.) legend of three characters, which are rather superficially engraved in one line at the level of the handles (see Pl. 83:3a). The inscription<sup>5</sup> indicates the capacity of the vessel, namely "8 $\frac{1}{3}$  *akalu*" (or Bab. *šá* = Sumerian *gar* or *ninda*). One *akalu*<sup>6</sup> is one-tenth of the Babylonian unit *qa* (= Sumerian *sila*). According to the latest attempts at establishing the equivalent of the *qa*, this measure is assumed to equal 1.004 liters,<sup>7</sup> also 1.34 liters.<sup>8</sup> Previously, François Thureau-Dangin had suggested various equivalents: 810 milliliters (see p. 109, n. 13), 842 milliliters,<sup>9</sup> (hesitantly) about one-fifth of a liter,<sup>10</sup> and finally—closest to our figures which are to follow—0.97 liter.<sup>11</sup>

Fortunately, the Fratadara vessel was one of the Persepolis antiquities which, after negotiations with the Iranian Ministry of Education, became property of the Oriental Institute (in 1935). In 1952 the writer requested the Department of Chemistry of the University of Chicago to determine the capacity of the bottle remnant and to com-

pute the capacity of the reconstructed vessel. The problems were solved through the kind efforts of Professor James B. Parsons and Mr. Grant Urry, with the following results.

## VOLUMETRIC MEASUREMENTS OF COSMETIC BOTTLE PF 11

I. Capacity of Extant Portion			
A. Determined by weighing			
Weight of empty vessel		2236	grams
Weight of water (at 22° C.) filling the vessel		766.2	grams
Density of water at 22° C.		0.9978	gram per ml.
Capacity of vessel	$\frac{766.2}{0.9978}$	= 767.9	ml.
B. Determined by direct measurement			
Capacity of vessel		766.1	ml.
} 767 ± 0.9 ml.			
II. Capacity of Reconstructed Vessel			
$767 \pm 0.9 \text{ ml.} + (3\frac{1}{3} \times (1.8)^2 \times 2)$			
= 767 ± 0.9 ml. + 20.4 ml. (cc.) = 787.4 ± 0.9 ml.			
III. Equivalent in Milliliters of one <i>akalu</i>			
A. Based on extant portion $\frac{767 \pm 0.9 \text{ ml.}}{8\frac{1}{3}} = 92.04 \pm 0.1 \text{ ml.}$			
B. Based on reconstructed vessel $\frac{787.4 \pm 0.9 \text{ ml.}}{8\frac{1}{3}} = 94.49 \pm 0.1 \text{ ml.}$			
IV. Equivalent in Milliliters of one <i>qa</i>			
A. Based on extant portion $92.04 \pm 0.1 \text{ ml.} \times 10 = 920.4 \pm 1 \text{ ml.}$			
B. Based on reconstructed vessel $94.49 \pm 0.1 \text{ ml.} \times 10 = 944.9 \pm 1 \text{ ml.}$			

We cannot disregard the possibility that the upper part of the neck of the receptacle concerned was a plain cylinder (cf. Pl. 47:8a-b) and that it was capped with a hollow cylindrical lid (undoubtedly lids secured the contents of all cosmetic bottles or jars) of the type shown on Plate 65:6. In this case the vessel could have been filled to the brim (see below) with cosmetic oil or the like. However, it is more plausible to assume that the neck had a projecting rim as reconstructed in our illustration (Pl. 83:3c<sup>12</sup>) and that the lid (cf. e.g. Pl. 65:5) was inserted in the orifice. If so, the vessel most probably was filled to the neck base only—or to a level slightly above—and the minimum capacity (i.e., exactly the capacity of the extant portion; see above), namely 767 (± 0.9) milliliters, corresponds closely to the measure mentioned in the inscription, namely 8 $\frac{1}{3}$  *akalu*.

In calculating the maximum capacity of the vessel, we applied the following data: The remnant of the neck (with inner diameter of 3.6 cm.) suggests that the inner wall surface of the neck was cylindrical. Using one of our cosmetic bottles from the Treasury (Pl. 65:1) as a model, we estimated that the neck of the Fratadara bottle was 2 cm. high. Consequently, the volume of a column of water 2 cm. high and 3.6 cm. in diameter was computed (20.4 ml.) and added to the capacity of the extant portion of the vessel. The maximal capacity thus calculated, namely 787.4 (± 0.9) milliliters, is the equivalent of 8 $\frac{1}{3}$  *akalu* if the

12. Drawn by Mrs. Sue Allen.

1. See Vol. I 56.

2. Herzfeld's field catalogue—mentioning simply the Fratadara temple as find-area—lists many Achaemenid objects which were apparently salvaged from the Terrace and reused in the later structure.

3. As determined by Mrs. Hans Ramberg.

4. See Vol. I, e.g. Pl. 149.

5. Read by Professor Landsberger, who kindly aided the writer in questions of pertinent literature and pointed out the synonymous Babylonian and Sumerian expressions.

6. See Henri Pognon, "Notes lexicographiques et textes assyriens inédits," *Journal asiatique*, 11th series, IX (1917) 378 f.

7. Angelo Segrè, "Babylonian, Assyrian and Persian measures," *JAOI* LXIV (1944) 76.

8. Hildegard Lewy, "Assyro-Babylonian and Israelite measures of capacity and rates of seeding," *JAOI* LXIV 72.

9. "Numération et métrologie sumériennes," *RA* XVIII (1921) 135.

10. "La mesure du 'qa,'" *RA* XXIX (1932) 192.

11. Thureau-Dangin considers this equivalent quite certain for the 1st Babylonian dynasty and possibly still valid during the Neo-Babylonian period; see "La mesure du 'qa,'" *RA* XXXIV (1937) 86.

original contents filled the vessel to the very orifice. One of Thureau-Dangin's attempts at defining the equivalent of the *qa* was also based on a restored bottle *including the neck*,<sup>13</sup> which was preserved intact. According to our calculations, based on the reconstructed Fratadara bottle, the maximal capacity of one *qa* (= 10 *akalu*) corresponds to 944.9 ( $\pm 1$ ) milliliters. We may mention parenthetically that this figure is surprisingly close to the equivalent (946.3 ml.) of one U.S. liquid quart.

In accordance with the reasons expressed above, the minimum equivalents of 92.04 ( $\pm 0.1$ ) milliliters for one *akalu* and 920.4 ( $\pm 1$ ) milliliters for one *qa* are probably closer to the original measures than the maximum figures, 94.49 ( $\pm 0.1$ ) and 944.9 ( $\pm 1$ ) for these units. In any event, the difference between the minimal and maximal figures is relatively small. We believe that it will hardly be possible to determine the equivalents of the ancient measures concerned more accurately unless by some fortunate chance an inscribed graduated receptacle should be found.

In weighing the reliability of our calculations we have to consider, further, that the vessel concerned was not an official measure. The cursory appearance of the inscription and the lack of a royal endorsement suggest that the legend is simply a label indicating the volume of the contents of the vessel and written after the vessel had been filled with

13. The vessel, marked "3½ *gar*" (*akalu*), is one of the specimens with a royal Neo-Babylonian inscription found at Susa (No. 12042). Approximately the lower third of the bottle was missing, and Thureau-Dangin's estimate of the *qa* equivalent (slightly more than 0.81 liter) based on the restored bottle is too low, to judge by the results of our study. See Thureau-Dangin, "La mesure du 'qa,'" *RA* IX 24 f., with illustration of vessel after restoration; for a drawing of the vessel before restoration, see Scheil, "Vase au nom de Amil-Marduk (556-555)," *MDP* XIV (1913) 60.

a measured liquid, undoubtedly a highly valued cosmetic substance—worthy of use by the king (see p. 108)—which was presumably transported in vessels of the form of our cosmetic bottles. As the receptacles themselves, prepared with much labor and care, represent objects of value, they were obviously filled as close to capacity as possible, that is, at least to the neck base (see above) or even to a level somewhat above it. Thus, our calculations of the minimum equivalents may be slightly too low. Official standard measures must have existed. They may have been receptacles bearing in addition to their labels of capacity royal inscriptions similar to those found on certain Neo-Babylonian vessels.<sup>14</sup>

There are only two examples of Treasury vessels bearing inscriptions which indicate their capacity. Both are small alabaster fragments found in rooms of the earliest section of the building. One sherd (Pl. 83:1) preserves three rather crudely scratched signs reading "*qa 3 akalu*." The form of the fragment suggests a vessel which was not smaller than the Fratadara bottle. We may assume, therefore, that the complete inscription read "*1 qa 3 akalu*," corresponding to a capacity between 1196.52 ( $\pm 1.3$ ) and 1228.37 ( $\pm 1.3$ ) milliliters. The second fragment (Pl. 83:2) is marked by two neatly engraved signs reading "*9 akalu*" and indicating a vessel of slightly greater capacity (between 828.36 [ $\pm 0.9$ ] and 850.41 [ $\pm 0.9$ ] ml.) than the Fratadara bottle.<sup>15</sup>

14. See e.g. Essad Nassouhi, "Deux vases royaux néobabyloniens," *AOF* III (1926) 65 f.; Thureau-Dangin in *RA* IX 24 f.; see also inscribed fragments in Scheil, *Textes élamites-sémitiques* (*MDP* X [1908]) p. 96.

15. The inscriptions of the two sherds were first read by Cameron, who used the term *šá* instead of *akalu* and stated that these legends could be either Elamite or Babylonian.

## COINS

## INTRODUCTORY NOTES, FIND-CONDITIONS

The numismatic finds (Pl. 84) with which we are here concerned include coins of Alexandrian type and coins struck during and before the Achaemenid era. Mr. Sydney P. Noe, assisted by members of the staff of the Museum of the American Numismatic Society in New York, has kindly identified and catalogued this material (see below). Mr. Colin M. Kraay of the Ashmolean Museum in Oxford added valuable suggestions in regard to coin No. 27. The identification of coin No. 39 we owe to Mr. E. S. G. Robinson. The later coins from the Persepolis area are being studied by Dr. George C. Miles, who, we hope, will publish them in the form of a monograph.

The first division of the catalogue (Nos. 1–26) deals with coins discovered after Herzfeld's resignation, that is, during the excavation seasons 1935–39. There are twenty-six identifiable specimens, ranging in time from the era preceding the Achaemenid Empire to the period immediately following its destruction, but to our astonishment there is not a single example of Achaemenid imperial darics or sigloi.<sup>1</sup> Appropriately, most of the coins (23) occurred in the debris of the Treasury, where they had been lost or overlooked in the confusion of the pillage. Their distribution suggests that stores of coins were kept in all three sections of the building.<sup>2</sup> The fact that pre-Achaemenid specimens as well as coins struck toward the end of the Achaemenid era were found in both the latest and the earliest parts of the building teaches us to be cautious in using numismatic (and other) finds for the dating of objects associated in a structure such as the royal storehouse, which was a depository for contemporary tribute as well as for spoil from the treasuries of earlier conquerors.

Three coins of Alexandrian type (Nos. 22, 25, 26),<sup>3</sup> struck after the fall of Persepolis, were cached or lost high above the floor of the eastern entrance room (13). The find-level, 1.40 m. above the floor,<sup>4</sup> may indicate roughly the height of the debris a few decades after the burning of the Treasury. A fourth specimen of Alexandrian type (No.

24) occurred in the refuse of "Garrison Street," about 12 meters north of the eastern entrance, suggesting that the street was still passable after the collapse of the storehouse. We include a fifth coin (No. 23) of this type, although it was not discovered in the excavations. It was found accidentally by a workman in a near-by field. Our excavation of a section of the garrison quarters yielded only one specimen—a small silver coin of 5th-century Cyzicus (No. 2).

The second division of the catalogue (Nos. 27–39) deals with coins discovered in 1933 (except No. 39; see below) in the northeastern and southeastern corners of the main hall of the Apadana.<sup>5</sup> According to reports of Friedrich Krefter, these coins were beneath the stone boxes which contained the pairs of silver and gold tablets bearing identical trilingual inscriptions of Darius I.<sup>6</sup> We are certain, therefore, that the coins had been struck prior to the time when the foundation tablets were deposited. We have pointed out that the inscriptions antedate Darius' campaign against the European Scythians.<sup>7</sup> If the historians are right in stating that this campaign cannot have been later than 511 B.C.,<sup>8</sup> that year establishes a definite *terminus ante quem* for the dating of the coins concerned.

Each coin hoard included four Croesus staters of gold, namely Nos. 28–31 (northeast deposit) and Nos. 32–35 (southeast deposit). In addition there were two silver coins in the northeast deposit, both (Nos. 27 and 36) of the 6th century B.C. The two silver coins (Nos. 37–38) originally found with the southeast deposit can now be dated somewhat more accurately than similar specimens of their type which had been assigned to about 500 B.C. According to our data (see above) the two coins concerned are earlier than 511 B.C. We found a third silver coin (No. 39) when we re-examined the test pit in which the southeast deposit had been brought to light. We discount the faint possibility that this specimen was intrusive and that it reached, in some freak manner, the bottom soil of the test pit, which is inclosed by undisturbed mud bricks of the wall. We consider this coin, therefore, to be a part of the foundation deposit. It has been identified as a coin of an uncertain Cypriote city. Messrs. Robinson and Kraay are inclined to assign this coin to the early 5th century and Miss Margaret Thompson of the American Numismatic Society shares their opinion, but the find-circumstances suggest a date prior to 511 B.C.

1. For Persian Empire coinage and bibliography see George Francis Hill, *Catalogue of the Greek Coins of Arabia, Mesopotamia, and Persia* (London, 1922) pp. cxx ff. and 149–75, Pls. XXIV–XXVII. See also the same author's "The coinage of the ancient Persians" in Pope, *Survey* I 397–405 and IV, Pl. 125, and Olmstead, *History of the Persian Empire*, pp. 188 f. For coin hoards of the Achaemenid period see Sydney P. Noe, *A Bibliography of Greek Coin Hoards* (The American Numismatic Society, "Numismatic Notes and Monographs," No. 78 [New York, 1937]), and E. S. G. Robinson, "A 'silversmith's hoard' from Mesopotamia," *Iraq* XII (1950) 49–51.

2. See Vol. I 200.

3. First identified by the late Mr. Edward T. Newell; see *OIC* No. 21, p. 78.

4. See Vol. I 170.

5. See *ibid.* p. 79 and Fig. 43.

6. *Ibid.* p. 70 and Figs. 42 A–B.

7. *Ibid.* p. 70.

8. See *ibid.* p. 39.

## COINS

## CATALOGUE

By Sydney P. Noe *et al.*

## COINS FROM THE TREASURY AND OTHER POINTS

No.	Field No.	Find-Spot	Mint	Description	Notes
MYSIA					
1	PT4 1098	Treasury, Room 35, floor, Plot HG 32	Cyzicus	Electrum hecte. Early 6th century B.C. To l., two fish heads, each with spike, one above the other; to r., tunny upward; pellets in l. and r. field. <i>Reverse</i> : Incuse. 2.67 grams, 10 mm.	Hans von Fritze, "Die Elektronprägung von Kyzikos," <i>Nomisma</i> VII (Berlin, 1912) 3, No. 10, and Pl. I 9; W. Greenwell, "The electrum coinage of Cyzicus," <i>Numismatic Chronicle, and Journal of the Numismatic Society</i> , 3d series, VII (London, 1887) 124, No. 168, and Pl. VI 32.
2	PT3 270	Garrison quarters, Room 19, floor, Plot HG 96	Cyzicus	Silver obol. <i>Ca.</i> 480–400 B.C. Forepart of running boar l.; to r., tunny upward. <i>Reverse</i> : Head of lion l., mouth open, in incuse square. 1.29 grams, 11 mm. (maximum).	Warwick Wroth, <i>Catalogue of the Greek Coins of Mysia</i> (London, 1892) p. 34, No. 108.
LYDIA					
TIME OF CROESUS, 561–546 B.C.					
3	PT3 411*	Treasury, Portico 6, at doorway to Vestibule 7, Plot HG 94		Silver stater Foreparts of lion r. and bull l., face to face. <i>Reverse</i> : Two incuse squares, side by side. 10.27 grams, 17–21 mm.	Barclay V. Head, <i>Catalogue of the Greek Coins of Lydia</i> (London, 1901) p. 7, Nos. 37 ff.
4	PT4 309	Treasury, Ramp 25, Plot HG 73, SE. corner		Silver half-stater (double struck?) Foreparts of lion r. and bull l., face to face. <i>Reverse</i> : Two incuse squares, side by side. 4.67 grams, 12–15 mm.	<i>Ibid.</i> p. 7, Nos. 41 ff.
5	PT4 475	Treasury, Courtyard 29, .80 above floor, Plot IG 13, NE. corner		Gold stater Foreparts of lion r. and bull l., face to face. <i>Reverse</i> : Two incuse squares, side by side. 8.10 grams, 13–16 mm.	<i>Ibid.</i> p. 6, Nos. 31 ff.
6	PT5 319	Treasury, Room 40, Plot HG 22, N.		Silver half-stater Foreparts of lion r. and bull l., face to face. <i>Reverse</i> : Two incuse squares of different sizes, side by side. Weight not recorded, 11–14 mm.	<i>Ibid.</i> p. 7, Nos. 41 ff.
7	PT5 769	Treasury, Hall 38, Plot HF 36		Silver stater Foreparts of lion r. and bull l., face to face. <i>Reverse</i> : Two incuse squares of different sizes, side by side. Weight not recorded, 15.5–18 mm.	<i>Ibid.</i> p. 7, Nos. 37 ff.
8	PT6 55	Treasury, Room 48, floor, Plot HG 11		Silver stater Foreparts of lion r. and bull l., face to face. <i>Reverse</i> : Two incuse squares, side by side. 10.34 grams, 16–20 mm.	<i>Ibid.</i>
9	PT6 610	Treasury, Room 83, SW. corner		Silver half-stater Foreparts of lion r. and bull l., face to face. <i>Reverse</i> : Two incuse squares, side by side. 5.40 grams, 14–15.5 mm.	<i>Ibid.</i> p. 7, Nos. 41 ff.
IONIA					
10	PT4 285	Treasury, Ramp 25, Plot HG 73, SE. corner	Miletus	Electrum one-third stater. 6th century B.C. Head of lion r. and r. foreleg, radiate globe on head. <i>Reverse</i> : Two incuse squares (not illustrated). 4.33 grams, 14 mm.	Jean Babelon, <i>Catalogue de la collection de Luynes: Monnaies grecques. III. Asie Mineure et Phénicie</i> (Paris, 1930) p. 46, No. 2624.
11	PT4 310	Treasury, Ramp 25, Plot HG 73, SE. corner	Miletus	Silver diobol. 478–390 B.C. Forepart of lion r., with head turned back and open jaws. <i>Reverse</i> : Incuse square containing stellar design. 0.905 gram, 8–9 mm.	Head, <i>Catalogue of the Greek Coins of Ionia</i> (London, 1892) pp. 185 f., Nos. 14 ff.
12	PT4 290	Treasury, Ramp 25, Plot HG 73, SE. corner	Ephesus	Silver drachm. Before <i>ca.</i> 480 B.C. Bee crawling l. <i>Reverse</i> : Incuse square roughly quartered. 2.82 grams, 14 mm.	<i>Ibid.</i> p. 48, No. 5.

\* [In *OIC* No. 21, p. 76 and Fig. 56, this coin is erroneously numbered PT4 411.—E. F. SCHMIDT.]

## OBJECTS FROM THE PERSEPOLIS TERRACE

No.	Field No.	Find-Spot	Mint	Description	Notes
CYPRUS					
13	PT5 278	Treasury, Hall 38, .10 above floor, Plot HF 28	Salamis	Silver stater. Reign of Euelthon. 560–525 B.C. Ram lying l.; above, $\Gamma M \star$ ; below, $\dots F$ . <i>Reverse</i> : Blank. Weight not recorded, 16.5–19 mm.	Hill, <i>Catalogue of the Greek Coins of Cyprus</i> (London, 1904) p. 46, Nos. 1 ff.
BITHYNIA					
14	PT5 192	Treasury, Hall 38, Plot HG 20, W. center	Calchedon	Silver, probably a Persic drachm. 5th(?) and 4th century B.C. Bull standing l. on ear of corn (to r.); above bull, $\kappa \Lambda \rho$ . <i>Reverse</i> : Incuse square (mill- sail type) quartered and slightly granu- lated. Weight not recorded, 17–19 mm.	Ernest Babelon and Théodore Reinach, <i>Recueil général des monnaies grecques d'Asie Mineure I 2</i> (Paris, 1908) p. 291, No. 8, and Pl. XLV 16–18; Wroth, <i>Catalogue of Greek Coins: Pontus, Paphlagonia, Bithynia, and the Kingdom of Bosphorus</i> (London, 1889) p. 124, Nos. 4 ff.
PAMPHYLIA					
15	PT4 561	Treasury, Room 33, refuse, Plot HG 41	Aspendus	Silver stater. 400–300 B.C. and later Two wrestlers: the one on the r. holds with his l. the r. hand of his opponent, and with his r. the belt(?) around opponent's waist; border of dots. <i>Reverse</i> : Slinger wearing short chiton discharging sling to r., triske- lion in field—the whole in dotted square within incuse square; inscription off flan; chisel cut and oblong countermark in which lion r. (or bull standing r.). 10.37 grams, 20–23 mm.	Hill, <i>Catalogue of Greek Coins of Lycia, Pamphylia, and Pisidia</i> (London, 1897) p. 95, No. 16.
ATTICA					
16	PT5 798	Treasury, Hall 38, .12 above floor, Plot HF 28	Athens	Silver tetradrachm. Middle 4th century B.C.* Head of Athena. <i>Reverse</i> : Owl r.; in l. field, olive branch and sickle moon; in r. field, reading downward and inward, $A \odot E$ ; large chisel cut across field and two small cuts. Weight not recorded, 20–22 mm.	Cf. Jean N. Svoronos, <i>Les monnaies d'Athènes</i> (Munich, 1923–1926) Pl. 26:2–16.
PAPHLAGONIA					
17	PT4 257	Treasury, Room 8, floor, Plot HG 83	Sinope	Silver drachm. Abd-Sasan (probably Sysi- nas, son of Datames). Ca. 340–330 B.C. Head of Sinope l., wearing sphenone; dot- ted border. <i>Reverse</i> : Sea-eagle on dolphin, both l. Traces of satrap's name beneath dolphin; chisel cut. 5.60 grams, 19 mm.	Cf. W. H. Waddington, E. Babelon, and Th. Reinach, <i>Recueil général des monnaies grecques d'Asie Mineure I 1</i> (2d ed.; Paris, 1925) pp. 197** f., No. 33; J. P. Six, "Sinope," <i>Numis- matic Chronicle</i> , 3d series, V (1885) Pl. II 9.
18	PT4 268	Treasury, Room 24, Plot HG 82	Sinope	Silver drachm. 4th century B.C. Head of Sinope l. <i>Reverse</i> : Sea-eagle on dol- phin, both l.; chisel cut. 5.22 grams, 17– 18 mm.	See Waddington, Babelon, and Rei- nach, <i>op. cit.</i> Pls. XXIV 13–37 and XXV 1–21.
19	PT6 224	Treasury, Hall 41, .30 above floor, Plot HF 88	Sinope	Silver drachm. 4th century B.C. Head of Sinope l., with single-pendant ear- ring and necklace, the hair contained in a sphenone behind and curling over the ties in front. <i>Reverse</i> : Sea-eagle on dol- phin, both l.; beneath dolphin, $\Sigma \text{IN}[\Omega]$ ; beneath wing, $\Gamma \text{O}[\text{?}]$ . 5.30 grams (5.20 grams after cleaning), 18–19 mm.	See E. S. G. Robinson, "Sinope," <i>Nu- ismatic Chronicle</i> , 5th series, X (1930) 5, No. 17, for the magistrate.
20	PT5 328	Treasury, Hall 41, Plot HG 70		Silver stater. Ancient imitation of Sinopean type. 4th century B.C.(?) Head of Sinope l. <i>Reverse</i> : Sea-eagle on dol- phin, both l.; chisel cut. Weight not re- corded, 16–19 mm.	Waddington, Babelon, and Reinach, <i>op. cit.</i> pp. 194** f., No. 24, Pls. XXV 18–19 and Suppl. O 7–8.
21	PT6 185	Treasury, Hall 41, Plot HF 68		Silver stater. Ancient imitation of Sinopean type. 4th century B.C.(?) Head of Sinope l.; border of dots. <i>Reverse</i> : Sea-eagle on dolphin, both l.; chisel cut. 5.1 grams, 18–20 mm.	See <i>ibid.</i>

\* [Newell definitely attributed this coin to the period just preceding Alexander; information by letter to Schmidt.]



No.	Field No.	Find-Spot	Mint	Description	Notes
MACEDONIA					
22	PT4 44b	Treasury, Vestibule 13, NE. corner, 1.40 above floor, Plot HG 53	Babylon	Silver drachm. Alexander III. <i>Ca.</i> 325 B.C.* Head of young Heracles r., wearing lion's skin; dotted border. <i>Reverse:</i> Zeus Aetophorus, seated l.; in l. field, $\Lambda$ ; beneath throne, $\Sigma$ ; in r. field, reading downward and inward, [A]AEEANΔPOY; dotted border. 4.20 grams, 16 mm.	Cf. tetradrachm in Newell, <i>Alexander Hoards</i> . II. <i>Demanhur, 1905</i> (The American Numismatic Society, "Numismatic Notes and Monographs," No. 19 [New York, 1923]) p. 60, No. 4331; cf. also L. Müller, <i>Numismatique d'Alexandre le Grand</i> (Copenhagen, 1855) Table X, No. 671.
23	PT7 371	Field W. of Persepolis Terrace	Persian	Silver triobol. Type of Alexander III. <i>Ca.</i> 312 B.C. Head of Heracles r., wearing lion's skin; dotted border. <i>Reverse:</i> Zeus Aetophorus seated on throne l.; in l. field, wreath; beneath throne, $\frac{\Lambda}{\Pi}$ (?); in r. field, reading downward and inward, AΛEΞAN[ΔPOY]. Weight not recorded, 12-13 mm.	Cf. tetradrachm in Newell, <i>Alexander Hoards</i> . IV. <i>Olympia</i> ("Numismatic Notes and Monographs," No. 39 [1929]) p. 9, No. 66.
24	PT4 240	Debris above "Garrison Street," Plot HG 34	Eastern?	Bronze. Alexander III. 336-323 B.C. Head of young Heracles r., wearing lion's skin; dotted border. <i>Reverse:</i> AΛEΞAN-ΔPOY between club, above r., and bow with quiver, below l. 4.95 grams, 17-19 mm.	Cf. Leonard Forrer, <i>The Weber Collection</i> . II. <i>Greek Coins</i> (London, 1923-24) p. 74, No. 2140; Fitzwilliam Museum, <i>Catalogue of the McClean Collection of Greek Coins</i> . II. <i>The Greek Mainland, the Aegean Islands, Crete</i> by S. W. Grose (Cambridge, 1926) pp. 62-63, Nos. 3517 ff.
25	PT4 44a	Same as No. 22	Persian	Silver drachm. Type of Alexander III. <i>Ca.</i> 312 B.C. Head of young Heracles r., wearing lion's skin. <i>Reverse:</i> Zeus Aetophorus seated l.; in l. field, wreath; beneath throne, $\frac{\Lambda}{\Pi}$ and BAΞIAEΩΞ; in r. field, reading downward and inward, AΛEΞANΔPOY; dotted border. 3.95 grams, 07-18 mm.	Cf. tetradrachm in Newell, <i>Olympia</i> , p. 9, No. 66.
26	PT4 44c	Same as No. 22	Persian	Silver drachm. Type of Alexander III. <i>Ca.</i> 312 B.C. Head of young Heracles r., wearing lion's skin; dotted border. <i>Reverse:</i> Zeus Aetophorus seated l.; in l. field, "crab-like object"; † beneath throne, $\frac{\Lambda}{\Pi}$ and BΔΓAEO (sic); in r. field, reading downward and inward, AΛEΞANΔPOY; dotted border. 4.085 grams, 15 mm.	Heretofore unpublished; "of peculiar style." †

## COINS FROM THE FOUNDATION DEPOSITS OF THE APADANA †

No.	Field No.	Find-Spot	Mint	Description	Notes
AEGINA					
27	HC 5	NE. deposit		Silver stater. Period II. 6th century B.C. Sea turtle with smooth carapace and spinal row of dots. <i>Reverse:</i> Incuse square divided by lines into eight triangular compartments, one of which is partly, another wholly, filled.	W. L. Brown, "Pheidon's alleged Aeginetan coinage," <i>Numismatic Chronicle</i> , 6th series, X (1950) 186 and Pl. XI 2c.
LYDIA					
28-35	HC 1-4, HC 9-12	NE. deposit (Nos. 28-31); SE. deposit (Nos. 32-35)		Gold staters. Time of Croesus. 561-546 B.C. Foreparts of lion r. and bull l., face to face. <i>Reverse:</i> Two incuse squares, side by side.	Head, <i>Catalogue of the Greek Coins of Lydia</i> , p. 6, Nos. 31 ff.
THRACE					
36	HC 6	NE. deposit	Abdera?	Silver octodrachm. <i>Ca.</i> 545-512 B.C. Griffin with rounded wing sitting l., r. foreleg raised. <i>Reverse:</i> Quadripartite incuse square.	Cf. Friedrich Münzer and Max L. Strack, <i>Die antiken Münzen von Thrakien</i> , 1. Teil, Heft 1 . . . bearbeitet von Max L. Strack (Preussische Akademie der Wissenschaften, <i>Die antiken Münzen Nord-Griechenlands</i> II [Berlin, 1912]) pp. 43 ff.

\* [According to letter of Newell to Schmidt.]

† [Quoting from letter of Newell to Schmidt.]

‡ [Discovered by Krefter during Herzfeld's directorship (except No. 39; see p. 110 above). So far as we know, the weights of the silver coins (Nos. 27, 36-39) of this group have not been recorded. As to the gold coins (Nos. 28-35), Herzfeld's statement that all eight specimens "weigh exactly 8.08 grammes, four coins together always 32.310 gr." ("Notes on the Achaemenid coinage and some Sasanian mint-names," *Transactions of the International Numismatic Congress*, June 30-July 3, 1936 [London, 1938] p. 414) ought to be verified. The diameters are indicated approximately by the sizes of the photographs. The coins are now in the custody of the Iranian Antiquity Service in Tehran.—SCHMIDT.]

## OBJECTS FROM THE PERSEPOLIS TERRACE

No.	Field No.	Find-Spot	Mint	Description	Notes
CYPRUS					
37	HC 8	SE. deposit		Silver stater. End of 6th century B.C.* Lion's head r. <i>Reverse</i> : bull charging r. in incuse square.	This type appears to be earlier than those described in P. M. Dikaios, "A hoard of silver Cypriot staters from Larnaca," <i>Numismatic Chronicle</i> , 5th series, XV (1935) 174-75 and Pl. XVI; see also E. S. G. Robinson, "Notes on the Larnaca hoard," <i>Numismatic Chronicle</i> , 5th series, XV 186-88.
38	HC 7	SE. deposit	Paphos	Silver stater. End of 6th century B.C.* Ram or bull(?) l., head turned back. <i>Reverse</i> : Ram's head l.; in upper left-hand corner, joined spirals; below, guilloche pattern—the whole in dotted incuse square.	Cf. Robinson in <i>Numismatic Chronicle</i> , 5th series, XV 184-85, 189; Dikaios, <i>op. cit.</i> p. 173, No. 525.
39	PT7 364	SE. deposit†		Silver stater. Prior to 511 B.C.(?)† Wounded giant in kneeling position. <i>Reverse</i> : Heracles in kneeling-running attitude r., holding bow in outstretched l. hand and brandishing club in raised r. Square dotted frame within square incuse.	Cf. Dikaios, <i>op. cit.</i> pp. 173, 178 and Pl. XV 6-7; Robinson in <i>Numismatic Chronicle</i> , 5th series, XV 185 f.

\* [Prior to 511 B.C.; see p. 110.—SCHMIDT.]

† [See p. 110.—SCHMIDT.]

II

*THE CEMETERY OF PERSEPOLIS SPRING*





TABLE X  
THE BURIALS OF PERSEPOLIS SPRING

No.	SEE PLATE	MANNER OF DISPOSAL	SEX	AGE*	ORIENTATION†	POSITION OF SKELETON				MORTUARY GIFTS
						Body	Head	Arms	Legs	
X 1		Coffin	?	Juvenile?	19° W. of N.	Dorsal	?	?	Extended	W. of coffin, ca. .20 above upper edge: sherds of bowl (PS 1) with red-brown and gray shades (cf. almost identical bowl PS 5; Pl. 89:8). Jar PS 13 may belong to this burial (see X 21). On right clavicle: small piece of iron rod (PS 2).
X 2	87 A-B	Pit covered by rocks; remnants of mud bricks on head and chest	Probably female	Adult (young)	5° W. of N.	Dorsal	Dorsal	Extended at sides, l. hand on pelvis	Extended	
X 3	87 C-D	Coffin covered by rocks	?	Grown-up person	5° W. of N.	?	?	?	?	None.
X 4		Pit covered by rocks	Male	Grown-up person	24° W. of N.	Dorsal‡	?	?	Extended	On pelvis: yellowish-brown rim sherd (PS 4) of bowl like PS 11 (see Pl. 89:10).
X 5	88 A-B	Coffin	Male	Adult	12° W. of N.	Dorsal	Originally dorsal, as indicated by position of mandible	Extended at sides	Extended	Beside l. tibia: bottom sherd of vessel with traces of light green glaze, yellowish-brown paste.
X 6		Coffin partly covered by rocks	Male?	Grown-up person	19° W. of N.	‡§	?	?	Extended	Among fragments of coffin lid: bowl sherds (PS 5; Pl. 89:8). On top of stone which had fallen into coffin: fragment of simple iron bracelet (PS 6).
X 7		Coffin partly covered by rocks	?	Grown-up person	13° W. of N.	‡§	?	?	Extended	None.
X 8	87 E	Coffin	Male	Adult	13° W. of N.	Dorsal	On l. side	Extended at sides	Extended	On l. wrist: simple iron bracelet (PS 22; Pl. 89:4).
X 9	87 F	Coffin, head end covered by rocks	Male	Adult	N.	Dorsal	On r. side	R. hand on pelvis; l. lower arm missing	Extended	None.
X 10	88 C	Coffin, head end covered by rocks	Probably female	Grown-up person	18° W. of N.	?	?	?	Extended	None.
X 11	88 C	Coffin, some rocks on head end	Female	Adult (young)	8° W. of N.	‡	?	?	Extended	None.
X 12		Coffin, some rocks above center and leg end	?	Grown-up person	13° W. of N.	?	?	?	?	Touching outside of coffin at foot end: sherds of red-brown bowl (PS 7) like PS 11 (see Pl. 89:10). On big boulder at foot end: neck sherd of red-brown jar (PS 8).
X 13		Coffin, rocks over center portion	?	Grown-up person	5° E. of N.	?	?	?	Extended	None.
X 14	87 G-H	Coffin, leg end only	?	Probably infant I	6° E. of N.	?	?	?	?	Outside coffin: small pitcher (PS 9; Pl. 89:5). Inside coffin, opposite PS 9: toy horse of baked clay (PS 10; Pl. 89:1).
X 15		Reused coffin (see p. 117, n. 4)	?	Child	15° W. of N.	?	?	?	Extended	None.
X 16		Pit lined and covered with rocks	?	Infant I	Ca. 14° W. of N.	Dorsal	On r. side	Extended, r. hand on pelvis	Extended	In vicinity of skeleton: jar sherd with brown exterior and buff interior.
X 17		Coffin	?	Grown-up person	14° W. of N.	Dorsal	On r. side	Extended at sides	Extended	In soil above burial: some indeterminate sherds in shades of brown, red (1 sherd), and yellowish brown (1 sherd).
X 18		Coffin	?	Grown-up person	6° W. of N.	Dorsal	?	R. bent at side, l. missing	Extended	At r. side of pelvis: rim sherds of bowl (PS 11; Pl. 89:10).
X 19		Pit	?	Infant II? (pit)	2° E. of N.	?	?	?	?	None.
X 20		Pit	?	Infant II? (pit)	Ca. 6° E. of N.	?	?	?	?	None.
X 21	88 D	Coffin	Probably female	Juvenile	32° W. of N.	Dorsal	Dorsal	Extended at sides	Extended	Beside r. humerus: partly corroded alabaster vessel (PS 12; Pl. 89:12). One meter SE. of foot end and 1.10 above level of grave: small jar (PS 13; Pl. 89:6) which may belong to X 1.
X 22	88 F-G	Coffin, some rocks scattered above lid	Male	Adult	N.	Dorsal	On r. side	Extended at sides, hands on pelvis	Extended	Outside coffin, N. of head end: red-brown rim sherd (PS 14) of bowl like PS 15 (see Pl. 89:7). W. of head end: some sherds of jar body with red-brown exterior wash over light grayish-brown paste.
X 23	88 E	Pit (actually on top of coffin lid of X 24)	Male	Mature	17° E. of S.	On l. side	On l. side	Humeri (only) parallel to chest	Flexed	At elbows: fragmentary bowl (PS 15; Pl. 89:7); may belong to X 24. According to restorer, sherds from area of near-by burials X 21 and X 30 were parts of this vessel.
X 24	88 E	Coffin	Female	Adult (advanced)	24° W. of N.	Dorsal	Dorsal, according to position of mandible	Extended at sides	Extended	Perhaps bowl PS 15, found with X 23.
X 25	88 H	Coffin (gap closed by 2 mud bricks)	Male	Adult (advanced)	8° W. of N.	Dorsal	Dorsal	Extended at sides, hands on pelvis	Extended, feet in curiously distorted position	None.
X 26		Pit lined with rocks, 2 slabs roof head end	?	Grown-up person	Ca. 31° W. of N.	?	?	R. extended at side, l. missing	?	On top of stone slab covering head end: corrugated sherd (PS 16‡; Pl. 89:9). Ca. .50 above foot end of grave: fragment of bowl (PS 17‡; Pl. 89:11).
X 27		Coffin consisting of 2 head sections	Female?	Grown-up person	27° W. of N.	?	On l. side	?	?	None.
X 28	88 F-G	Coffin, on top of X 29	Male	Adult	5° W. of N.	Dorsal	On l. side	Flexed on chest	Extended	On l. wrist: bronze bracelet (PS 18; Pl. 89:2).
X 29	88 F-G	Coffin, below X 28	Female	Mature	14° W. of N.	Dorsal	On l. side	Bent at sides, hands on pelvis	Extended	Beside r. lower leg: sherd with light greenish-gray and grayish-brown surface (PS 19‡)
X 30		Coffin	Female	Mature	17° W. of N.	Dorsal	Dorsal	Bent at sides, hands on pelvis	Extended	In soil above coffin: light brown rim sherd (PS 20) of bowl like PS 11 (see Pl. 89:10).
X 31		Coffin	?	Grown-up person	28° W. of N.	Dorsal‡	?	?	Extended	Below pile of disturbed bones in pelvic region: iron finger ring (PS 21; Pl. 89:3).

\* "Infant I": from birth until ca. age 7; "infant II": from ca. 7 until ca. 14; "juvenile": from ca. 14 until ca. 21; "adult": from ca. 21 until ca. 45; "mature": from ca. 45 until ca. 65; "senile": after ca. 65. Where the age class was not recognizable, general terms such as "grown-up person" and "child" are used.

† Of coffin or (where absent) of skeleton or burial pit.  
‡ Upper body disturbed; bone fragments pushed toward pelvic region.

§ Bone fragments of entire upper body pushed into lower (leg) section.  
|| According to position of tibiae.  
‡ Doubtful whether mortuary gift.

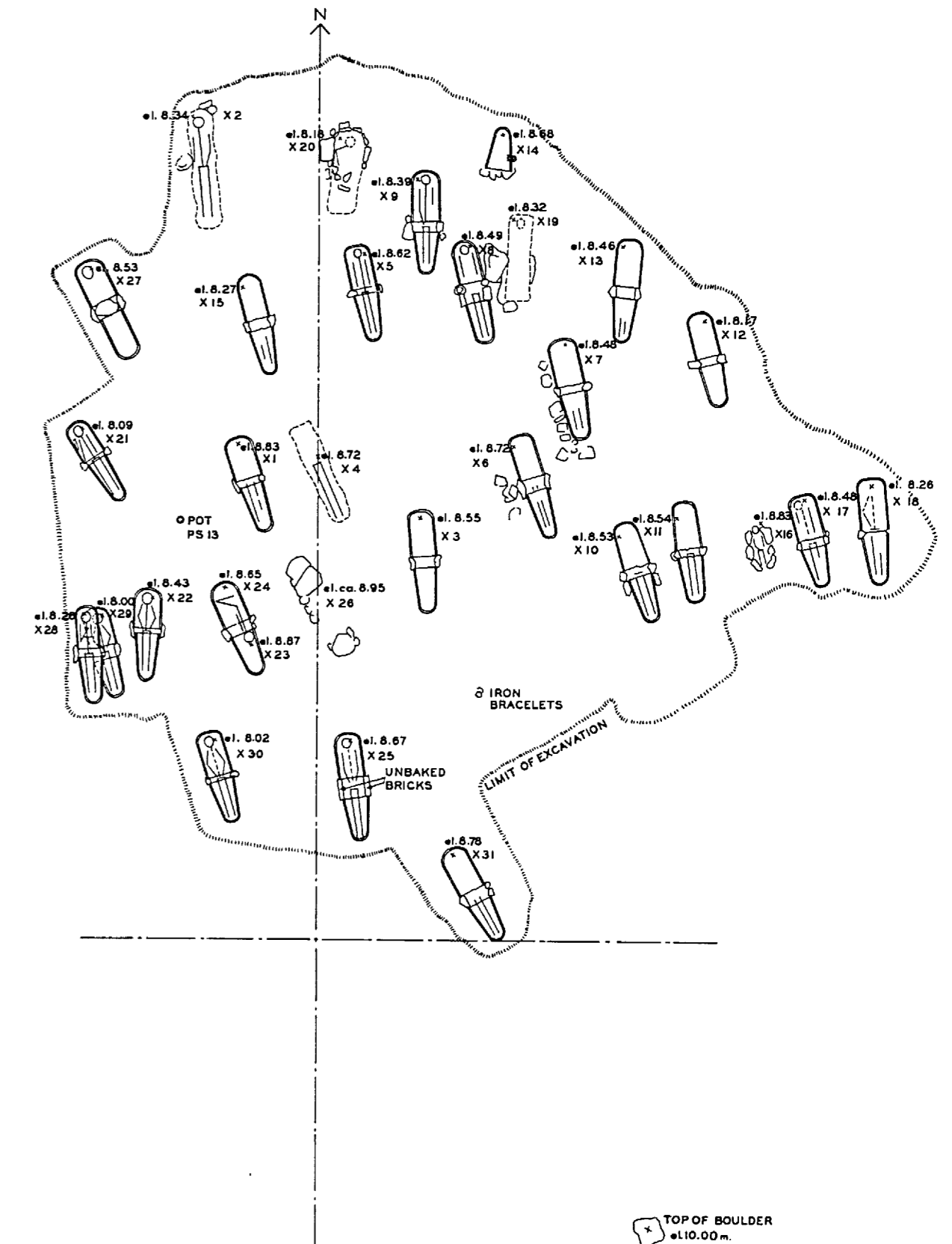


FIG. 22. PERSEPOLIS SPRING CEMETERY. PLAN OF BURIALS. SCALE, 1:100

## THE CEMETERY OF PERSEPOLIS SPRING

### THE SITE

IN JUNE, 1939, a crew of Iranian road workers accidentally discovered a grave when digging for rubble in a recess of the Mountain of Mercy. We investigated the gently sloping area and uncovered altogether thirty-one burials (Fig. 22 and Pls. 85-88). Undoubtedly there are more graves beyond the limits of the excavated area. The views on Plates 85 and 86 *A* and *C* show its location in relation to the near-by Shiraz-Isfahan highway. The cemetery is about a kilometer north-northwest of the Persepolis Terrace<sup>1</sup> and about 200 meters southeast of the spring which provides the drinking water for the neighborhood.

Other sites in the environs of the burial ground have been listed elsewhere.<sup>2</sup>

The skeletal material was so badly decomposed or damaged by the burrowing of rodents and the action of the inclosing rubble, combined with the annual floods of the rainy season, that in most cases anthropometric studies were out of the question.<sup>3</sup> What information could be gained in the field from the skeletal remains and from the objects found in the cemetery is presented in Table X and interpreted on the following pages.

### THE BURIALS

#### MANNER OF DISPOSAL OF THE DEAD

Twenty-four of the thirty-one bodies whose remains we found had been buried in adjustable earthenware coffins which consist of two distinct sections, each section averaging 80 cm. in length and 18 to 20 cm. in height (Fig. 23). The section prepared to accommodate the upper body has a broadly curved end, roughly parallel sides, and measures about 55 cm. in width. The other half tapers toward the curved foot end, which is considerably narrower than the head end. As a rule, the sides of these two flat-bottomed sections are vertical, but their squared-off rims project somewhat. All coffins were covered with slightly domed lids made of the same coarse and brittle earthenware in shades of light gray and red-brown that was used for the coffins. All lids were crushed by the weight of rubble-filled earth and boulders, which in many instances no doubt had been deposited intentionally on top of the burials. It was often impossible to determine whether the lids originally consisted of one piece or of two sections. In some instances smooth edges of lid fragments suggested that the covers also were made in two parts, corresponding to the two sections of the coffins. However, since the coffin halves did not touch one another (except X 18; see below), whereas lid fragments usually covered the entire grave, apparently either the central gap between the two sections of the lid was covered by a large fragment (see Fig. 23) or by several pieces, or, if the lid halves abutted in the center, the resulting gaps at the ends of the coffin were covered in this manner.

The gap between the two sections of the coffin was from 10 to 35 cm. long, dependent on the stature of the person disposed of.<sup>4</sup> This means that the pelvic region extended

across a strip of plain earth. The sides of the gap were always closed, either by single slabs or by several boulders. In one instance (X 25) two mud bricks flanked the opening. Only in one case (X 18) did we find that the two coffin halves adjoined without a gap. The body of a small child was buried in the leg section of a coffin (X 14). One coffin, finally, consisted of two head sections (X 27).

The remains of seven persons were found in simple pits without coffins. Two of these graves (X 16 and X 26) were

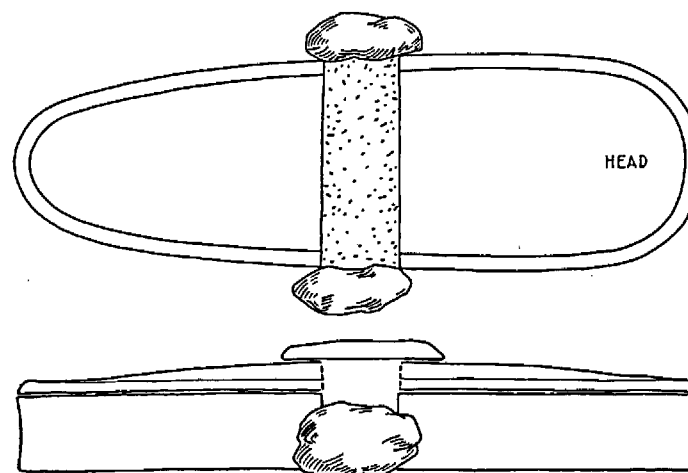


FIG. 23. PERSEPOLIS SPRING CEMETERY. EXAMPLE OF ADJUSTABLE EARTHENWARE COFFIN. PLAN WITHOUT LID AND ELEVATION WITH LID. SCALE, 1:20

lined with unwrought boulders. The head end of X 26 was further protected by a partial roof of two stone slabs. Rock piles were found above some of the other pits. The remains of the grown-up persons buried without the protection of earthenware coffins include one young adult, probably female (X 2), two males (X 4, X 23), and one skeleton of

4. Remains of a child's skeleton (X 15) were found in the leg section of a coffin consisting of two parts and adjusted for a tall person. However, the fact that parts of the lid were piled up beyond the foot end indicate that the grave had been disturbed and that the child's body was buried in a coffin which previously had contained the remains of another, certainly grown-up, person, whose remains must have been removed when the child was interred.

1. See Vol. I, Fig. 13.

2. See *ibid.* pp. 55-57.

3. Some specimens worth saving for further studies were lost by submarine action en route to the United States, and a few skulls were retained by the Iranian Antiquity Service.

unknown sex (X 26). Three of the five children's bodies buried in the cemetery had also been disposed of in this manner.<sup>5</sup> Probably the corpse of the fourth child (X 15) was to have been interred in a pit, as suggested by the find-conditions (see n. 4). The coffin in which we found the skeleton no doubt had been uncovered accidentally during the digging of the grave. Only one of the children (X 14) had been intentionally buried in a coffin, namely in the leg section of a coffin for a grown-up person.

We are at a loss to explain the puzzling position of one of the skeletons (mature male X 23; see Fig. 22 and Pl. 88 *E*). It lay on the coffin lid of X 24 (adult female); its skull was oriented southward, whereas the skulls of all the other skeletons of the cemetery pointed in a roughly northerly direction (see below). Its position—on the left side—

siderably lower than that of a group of modern occidental Caucasians.<sup>8</sup>

Age Group*	Male	Female	Sex Unknown
Infant I			2
Infant II			2
Child			1
Juvenile		1	1
Adult	6	3	
Mature	1	2	
Senile			
Grown-up person	2	2	8

\* See Table X, n. \*

#### ORIENTATION

The dead of Persepolis Spring (except X 23; see above) were oriented in accordance with a strict, undoubtedly

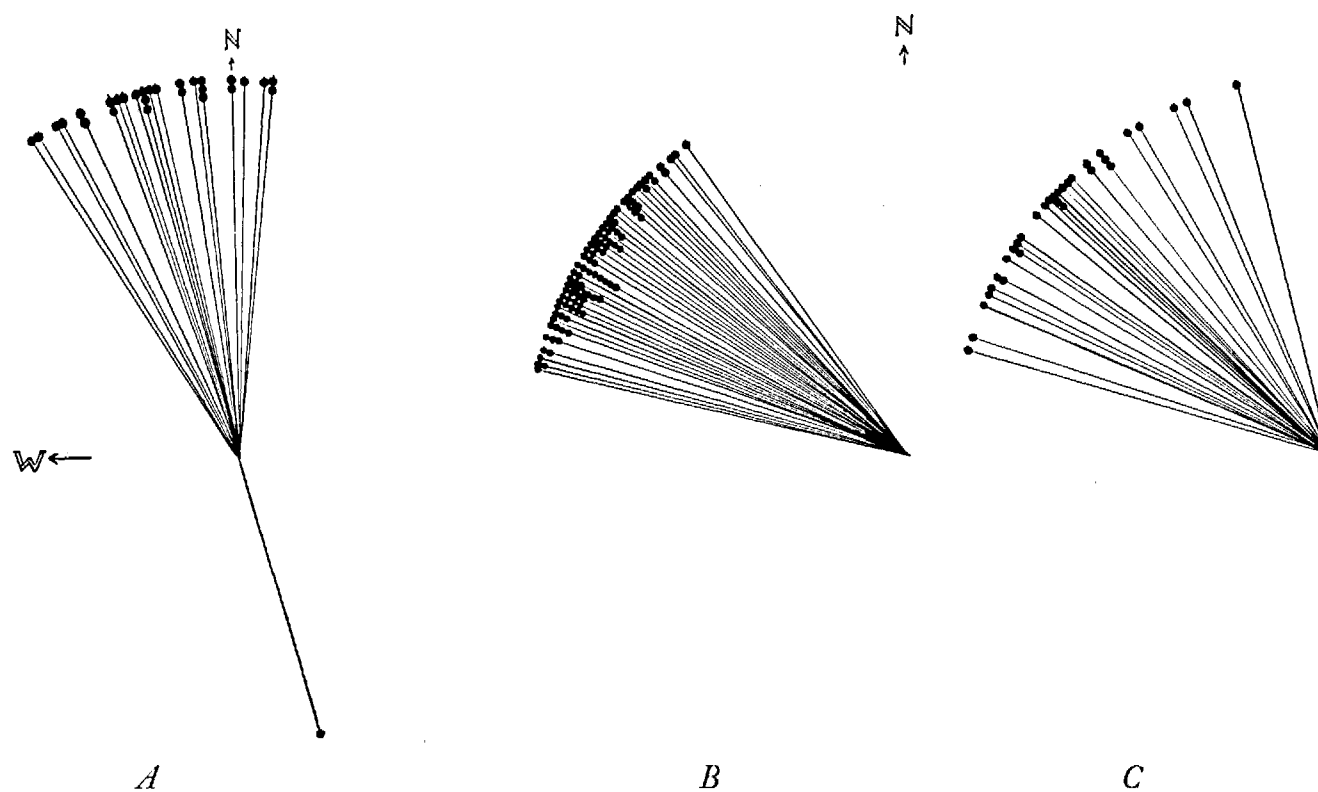


FIG. 24. ORIENTATIONS OF BURIALS (head ends marked by circles). A. PERSEPOLIS SPRING: 32° W. OF N. TO 6° E. OF N. (ATYPICAL X 23 ORIENTED 17° E. OF S). B. MOSLEM BURIALS AT TALL-I-BAKUN B: 35° TO 77° W. OF N. C. MOSLEM BURIALS AT TALL-I-BAKUN A: 14° TO 74° W. OF N.

was also unique in this cemetery, and it was the only skeleton with legs flexed instead of extended.

#### SEX AND AGE OF THE SKELETONS

On account of the destructive agents referred to (see p. 117) our series of skeletal specimens is too small for reliable statistics based on sex and age. Nevertheless, the following table, which includes questionable specimens,<sup>6</sup> may suggest an approximately normal proportion of sexes. There are possible totals of nine males and eight females.<sup>7</sup> To judge by the absence of definable senile skeletons, we may assume that the life expectancy of the group concerned was similar to that of prehistoric Iran, that is, con-

5. There is hardly a doubt that the bodies of both children and adults buried without earthenware coffins (except for X 23?) were protected in some other manner, at least by a roof of branches and reed mats, although we could find no traces of such covers.

6. Indicated on Table X.

7. For unusual predominance of males over females in at least one area of prehistoric Iran see Schmidt, *Excavations at Tepe Hissar, Damghan*, pp. 313-14.

religious, rule. The directions of thirty graves cover an arc of only 38 degrees of the compass, ranging from 6° east of north to 32° west of north (Fig. 24 *A*).<sup>9</sup> All heads (X 23 excepted) pointed northward. The plan of the cemetery (Fig. 22) shows a burial pattern which closely resembles that of the Moslem graveyards uncovered by us in the top layers of the prehistoric mounds Tall-i-Bakun A and B.<sup>10</sup> However, a comparison of the orientation of the Moslem burials with those of the graves under consideration shows that the directions of the Bakun B graves (Fig. 24 *B*) cover an arc of the compass which—though almost continuous (35° to 77° west of north)—is entirely apart from the arc formed by the Persepolis Spring orientations. The directions of five Bakun A burials (all together covering an arc from 14° to 74° west of north; see Fig. 24 *C*) coincide with the arc of orientation of the Persepolis Spring burials, but the majority of the Moslem graves of Tall-i-Bakun A

8. Cf. *ibid.* pp. 313-15.

9. One grave (X 23) was oriented 17° east of south, skull on the south.

10. For location see Vol. I, Fig. 13, and for preliminary notes on the results of our work in the prehistoric strata see *OIC* No. 21, pp. 121-29.



and B fall within the adjacent westerly sector of the compass.

Wherever we uncovered (against our intentions) Mohammedan graves in the course of our excavations in Iran, we found that the body, always with extended legs, lay in a roughly northwest-southeast direction, the head pointing northwestward. So that it would face Mecca, in death as in prayer, the head was turned toward the right side, that is, toward the southwest. It appears that the northwesterly direction of the head and the facial position on the right side were (and, as far as we know, still are) obligatory. Otherwise, with the body in dorsal position (see below), in order to face southwest, the head—if turned left—could just as well point southeastward.<sup>11</sup> In any event, the body of the deceased must form an angle of 90° with the sacred direction. Since the direction from the Persepolis area toward Mecca is 58° west of south,<sup>12</sup> the body orientation of a correctly buried Mohammedan should be 32° west of north, the head pointing northwestward and facing roughly southwest. Figure 24 A shows that the directions of the Persepolis Spring burials (X 23 excepted) fan northward from this line of the compass. Ironically, the directions of all Moslem burials of Bakun B and of most graves of Bakun A fall westward of the ideal orientation, which is straddled, however, by the orientation arc of the latter site.

#### SKELETAL POSITIONS

Excepting again the atypical X 23 (see p. 118), all skeletons uncovered at Persepolis Spring—and sufficiently preserved to indicate the original positions—lay on their backs. The positions of fifteen skulls could be determined. Four were turned toward the right side, facing a generally western or southwestern direction; four (omitting X 23) were turned left, facing east or northeast; and six skulls had the same dorsal position as the bodies. In determinable cases the arms were usually either extended at the sides or slightly bent and the legs were extended, except for the flexed position of X 23.

The positions of the skeletons in the two Moslem burial sites were as follows:<sup>13</sup>

	Bakun A	Bakun B
Position of body	Dorsal	3
	Right side	15
	Ventral	14
Head facing southwest	30*	All (90)
Position of arms	Various	Various
Legs extended	All (32)	All (85)

\* Also one resting on its base and one lying on its face, both probably displaced by accident.

The table shows that most of the Moslems here buried lay on the right side and some in ventral position, in contrast to the dorsal position of all but one (X 23) of the Persepolis Spring skeletons. Furthermore, the heads of all but two

11. We have never encountered Moslem burials in Iran oriented in the manner of four skeletons uncovered by J. de Morgan in Russian Lenkoran. According to his sketch the heads of the four assumed Moslems point east and face north; see J. de Morgan, *Mission scientifique en Perse*. IV. *Recherches archéologiques* (Paris, 1896-97) Fig. 35. Nevertheless, the orientation of Moslem graves may vary considerably even within the same burial area; see T. J. Arne, *Excavations at Shah Tepé, Iran* (Stockholm, 1945) Figs. 22, 32, 39, 51, 59, 68.

12. According to British General Staff, Geographical Section, *Map of Asia*, Sheet 32 (Persian Gulf); scale, 1:4,000,000 (London, 1928).

13. As far as determinable in each case.

(doubtful; see note to preceding table) Bakun skeletons—regardless of the position of the body—were turned so that they faced southwest, that is, the general direction of Mecca. In contrast thereto, in the Persepolis Spring Cemetery equal numbers of skeletons faced eastward and westward. The position of the arms apparently was not dictated by any rules. However, the extended position of the legs of all skeletons<sup>14</sup> uncovered in the three burial sites is distinct from the contracted position of most prehistoric burials in Iran and elsewhere.<sup>15</sup>

#### MORTUARY GIFTS

Plate 89 illustrates all objects of any importance which accompanied the dead buried in the Persepolis Spring Cemetery. The positions of most objects marked them definitely as mortuary gifts. Others were found in the soil beside or above the burials to which we attribute them. All undoubtedly belong to the period during which the cemetery was in use, since there is no trace of any habitation in the immediate vicinity.

There are only three categories of burial finds (see Table X): personal ornaments, vessels, and a toy figurine. The ornaments include a bracelet of twisted bronze wire ending in two ram's heads (Pl. 89:2) and a simple iron bracelet (Pl. 89:4), both worn by male adults (X 28 and X 8) on their left wrists. An iron finger ring (Pl. 89:3) occurred in the grave of a grownup of unknown sex (X 31), and two pieces of iron, namely a rod (PS 2) and a fragment of a bracelet (PS 6), were found with X 2 and X 6 respectively.

As to vessels, there is one badly corroded remnant of a slender alabaster receptacle (Pl. 89:12) evidently resembling the neckless body of a cosmetic bottle of a type found in the Persepolis Treasury (see p. 90 and Pl. 65:1, 12). The object lay beside the upper arm of an apparently female juvenile (X 21). All other vessels were made of baked clay and turned on the wheel. Red-brown shades of surface and paste prevail, but other shades of brown occur. In one case (X 22) we noticed a fragmentary jar with red-brown wash over light grayish-brown paste. A single sherd with remnants of light green glaze over yellowish-brown paste was in the coffin of X 5. There are no embellishments, such as painted, applied, incised, or molded designs, on any vessels or sherds.

The vessel forms include a small pitcher with pinched spout (Pl. 89:5); a small jar (Pl. 89:6); somewhat larger, narrow-mouthed, vessels, represented by a few sherds only; and bowls, representing the most frequent and, for purposes of chronology, the most important type of vessel found at the burial site. The form of bowl PS 15 (Pl. 89:7) is partly duplicated by rim sherd PS 14 (with X 22). The shape of bowl PS 5 (Pl. 89:8) too is paralleled by that of another vessel (PS 1; with X 1). There is, furthermore, a rather striking resemblance between PS 5 and a bowl (Pl. 72:1) found in "Garrison Street" at Persepolis. The shape of PS 15 is similar to that of a bowl (Pl. 72:2) uncovered in a room of the Treasury, and the profile of bowl PS 11 (Pl. 89:10) is related to that of another bowl (Pl. 72:3) found in the Treasury. The upper profile of PS 11 is repeated by three additional bowl fragments: PS 4 (with

14. Except for X 23 in Persepolis Spring Cemetery.

15. At Babylon the contracted position of the bodies prevailed to the end of the Achaemenian period (see p. 122).

X 4), PS 7 (with X 12), and PS 20 (with X 30). The type of bowl PS 17 (Pl. 89:11) seems to be represented by one fragment only. A single corrugated slab of earthenware (Pl. 89:9) may be a piece of a large storage vessel.

A unique little horse figurine of baked clay (Pl. 89:1) was a toy of the small child (X 14) with whose remains it was found. The wooden wheels have disintegrated, but they are illustrated by the clay wheels of a Neo-Babylonian toy cow (restored?) found at Babylon.<sup>16</sup>

These finds from Persepolis Spring differ greatly from

the following objects found in the Moslem burial layers of Tall-i-Bakun A and B: bracelets of iridescent glass, bronze coins,<sup>17</sup> beads of glass or turquoise-colored frit, a fragment of a 16th-century Persian inscription on stone,<sup>18</sup> bronze rings set with glass or frit, a jar decorated with a glazed polychrome pattern, and so forth. One of the few specimens resembling an object from Persepolis Spring (Pl. 89:4) is an iron bracelet (thick wire with squared ends) found on the left wrist of an adult female skeleton in Bakun B.

#### THE PERIOD OF THE CEMETERY

At the present state of our knowledge we cannot point out any object of mortuary equipment or any feature of the burials which alone would determine beyond doubt the exact period of the cemetery. However, in the Persepolis area a combination of such features as the occurrence of iron objects, the almost exclusive use of plain wheelmade

As to the most recent period to which the cemetery could be assigned, the orientation of the burials is so close to the traditional direction of Moslem burials (see Fig. 24)—a direction which has no decisively documented parallel during pre-Moslem times—that other features had to persuade us to attribute the cemetery to a pre-Moslem period. Such features are the orientation of a number of heads facing upward or even away from Mecca<sup>19</sup> and the use of earthenware coffins, which we never encountered in the numerous graves of the Moslem period uncovered at Rayy and in the area of Persepolis.

For instance, the Moslem graves of Tall-i-Bakun A and B were rectangular pits oriented as indicated on Figure 24 B-C (see p. 118). At the bottom of each pit there was an additional narrow and shallow trench (30–40 cm. deep), either in the center (Fig. 25 A) or at the edge (Fig. 25 B), or at times partly below one wall of the pit (Fig. 25 C). The corpse was placed in this trench, which was then covered with a row of stone slabs (Fig. 25 A-B) or in a few cases with baked bricks (Fig. 25 C) before the burial pit was filled with earth. The bricks roofing those trenches which were partly below the pit wall stood on edge.

Finally, the absence in the Persepolis Spring Cemetery of any objects of the types from the burial grounds of Tall-i-Bakun A and B and characteristic of the Islamic era is an additional reason for not attributing the cemetery to this period—except, in theory, to its very beginning. As to the last-mentioned possibility, in order to determine whether the pottery found with the Persepolis Spring burials is related in any way to the local ceramics used at the start of the Moslem era, the writer closely examined the collection of vessels from the early Islamic stratum of near-by Istakhr. It was found that there is no resemblance whatever between the Istakhr bowls from early Islamic or mixed Sasanian-Islamic deposits and the characteristic bowls of Persepolis Spring illustrated on Plate 89:7, 8, 10.

Little is known about the disposal of the dead on the Iranian plateau during the historical periods preceding Islam, but there is some information from the adjacent areas on the west and east. Sasanian burial vaults, provided with sarcophagi, glazed and unglazed pottery, lamps, figurines, and so forth, are reported at Susa by De Mecquenem, who suggests that the vaults are probably ossuaries of the Zoroastrians.<sup>20</sup> To the same period, appar-

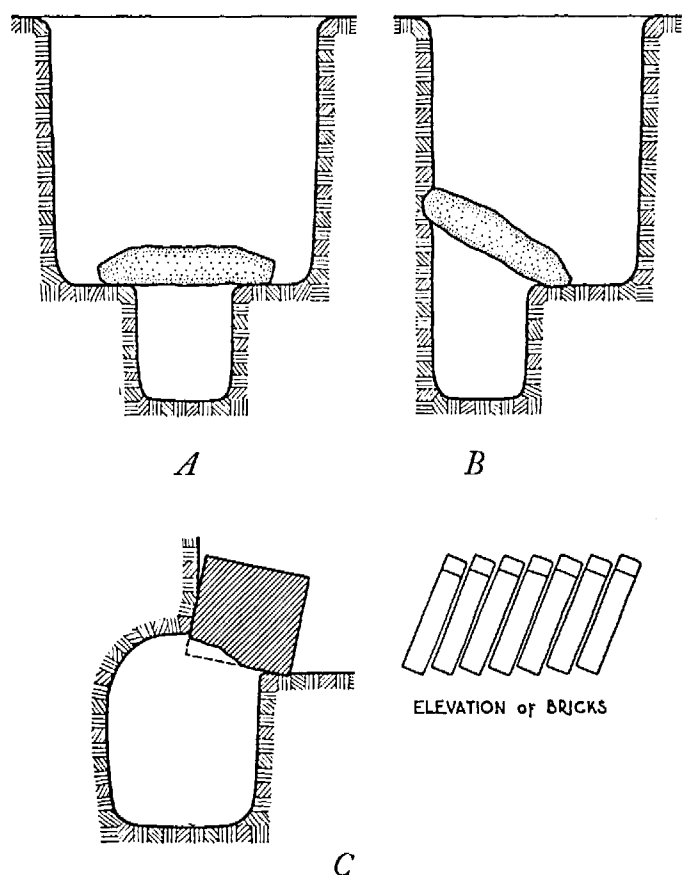


FIG. 25. CROSS SECTIONS OF TYPICAL MOSLEM GRAVES. SCALE, 1:20  
A-B. TALL-I-BAKUN B (X 21 AND X 22, PLOT CE 03). C. TALL-I-BAKUN A (X 1, PLOT BB 62)

pottery in various shades of brown and red, the presence of a green-glazed sherd, the disposal of the dead in earthenware coffins, and the extended position of the bodies eliminates, we believe, all periods prior to the Achaemenid era.

16. Reuther, *Die Innenstadt von Babylon*, Fig. 39 and p. 32. Objects which are similar to the Babylon specimen, i.e., theriomorphic vessels provided with wheels, are considered ritual vessels by Pinhas Delougas; see *Pottery from the Diyala Region* (OIP LXIII [1952]) Pl. 94 b and f, pp. 93 f. Theriomorphic spouts (cf. e.g. *ibid.* Pl. 94 d), however, may have belonged to vessels of various purposes. We refer for instance to a ram-shaped vessel (with perforated muzzle and dorsal aperture) which we found near the face of a small child in a grave of Hissar IIC. In our opinion the find-location leaves no doubt that the object was used as a "nursing bottle" and, incidentally, as a toy; see Schmidt, *Excavations at Tepe Hissar, Damghan*, Fig. 113.

17. According to information given by Dr. George C. Miles, eight coins from Bakun A range in time from about A.D. 1300 to about 1500; an 8th-century Abbasid coin and a 14th-century clay disk—according to Miles a talisman with a Qur'anic quotation—occurred at Bakun B.

18. Dated by Drs. Mehmet Aga-Oglu and Florence E. Day (information by letter); the stone was one of the cover slabs of a Bakun A grave.

19. However, at Rayy the occupants of a few undoubtedly Moslem graves faced the wrong direction.

20. See Pope, *Survey* I 328.

ently, belong many baked-clay figurines found near Samarqand. It has been assumed that they were ornaments of ossuaries of the same material; the ossuaries, however, are not illustrated in the publication of the figurines,<sup>21</sup> which deals briefly with Zoroastrian funeral customs.<sup>22</sup>

During the Sasanian period<sup>23</sup> exposure of the corpses to birds and beasts—and presumably in many cases subsequent disposal of the bones in ossuaries—was the general rule.<sup>24</sup> Inhumation of the bodies was prohibited.<sup>25</sup> Vertical cliffs, single rocks, and rocky slopes in the Persepolis area show rectangular man-made cavities, many of which certainly had served as ossuaries of the Zoroastrians.<sup>26</sup> Certain long shallow depressions may have been places of exposure, from which the bones were gathered into receptacles to be deposited in smaller cavities. We are inclined to attribute most of these rock cists to the Sasanian period; but in theory they could belong to any time from the beginning of the Achaemenid period to the end of the Sasanian. Some of the more spacious cavities, for instance those of Akhur-i-Rustam, are considered burial cists of persons normally entombed during the Achaemenian era.<sup>27</sup>

At any event, in trying to date the cemetery of Persepolis Spring, we have to exclude the Sasanian period, when the religious rules concerning the exposure of the dead were followed very strictly, most rigorously no doubt in the area with which we are concerned, namely the very heartland of the Sasanian Empire.

Burial jars of children found by Loftus at Susa and attributed by him to the Parthian or the Sasanian period<sup>28</sup> are presumably of the same types as the tall slender funerary vessels described by Dieulafoy, who considers them Parthian.<sup>29</sup> Since the cranium of the deceased was often larger than the orifice of the vessel, both authors assume that the corpse ("more or less desiccated"<sup>30</sup>) had been put into an unfinished vessel (its "shroud of clay"<sup>31</sup>), which was then baked(!). We reject this theory. Close re-examination would certainly show evidence that such narrow-mouthed burial jars had been fractured in antiquity; and we agree with the excavators of Seleucia that the tops of such vessels had been broken off and replaced again after the insertion of the corpses.<sup>32</sup> As a matter of fact, in 1929 Unvala found at Susa burial jars of the Sasanian period

broken near the neck—to permit insertion of an infant corpse—and covered with a large bowl.<sup>33</sup>

Many examples of coffin burials are known from the Parthian strata of Mesopotamian sites.<sup>34</sup> Slipper coffins, first noticed at Warka and described by Loftus,<sup>35</sup> occurred at Seleucia in Level III (ca. 140 B.C.—A.D. 43)<sup>36</sup> but not later than this Hellenistic-Parthian subperiod. On the other hand, the excavators of Babylon previously believed they had found reason to attribute the slipper coffins ("Pantoffelsärge") to the Sasanian stratum of their site.<sup>37</sup> So far, the closest parallels to the coffins of the Persepolis Spring Cemetery have occurred in the Seleucid-Parthian stratum of Babylon. They are narrow earthenware troughs with rounded ends, long enough to accommodate a corpse with extended legs. The lids consist of two sections, whereas, in contrast to the Persepolis specimens, the coffins are made in one piece and are sometimes coated with a greenish-blue glaze.<sup>38</sup> The graves of Babylon differ also in another respect: they are not oriented according to a definite rule.<sup>39</sup> Lack of a rule of burial orientation was noticed also in the Hellenistic and Parthian strata of Seleucia.<sup>40</sup>

At Susa too some coffins occurred which were similar in shape to those of Persepolis Spring. The Susa coffins, also attributed to the Parthian period,<sup>41</sup> are made in one piece, but their lids again consist of two sections. The excavator reports that these coffins, as well as others of anthropoid shape found near by, were oriented 15° east of north, whereas certain pairs of funerary urns were oriented 10° west of north.<sup>42</sup> He does not state whether the skulls, or, if the skulls were missing, the head ends of the receptacles, pointed northward. The scarcity of bones is the only (and insufficient) reason given for considering both coffins and urns as ossuaries of Zoroastrian Parthians.<sup>43</sup>

As to the disposal of the dead during the Achaemenid period, we know the monumental tombs of the kings at Pasargadae, Naqsh-i-Rustam, and Persepolis. Members of noble families may have been buried in more modest rock tombs, such as the cists of Akhur-i-Rustam (see above). The bodies of the Magi, that is, members of the priestly class, were disposed of by exposure to beasts and birds.<sup>44</sup>

33. "Fouilles à Suse en 1929," *RA* XXVI (1929) 141.

34. Listed with bibliographies by Neilson C. Debevoise, *Parthian Pottery from Seleucia on the Tigris* (Ann Arbor, 1934) pp. 1–5, and by Richard Ettinghausen in Pope, *Survey* I 651–54.

35. *Op. cit.* pp. 203 ff.; see also slipper coffins from Nippur illustrated in Pope, *Survey* IV, Pl. 180 D.

36. Yeivin, *op. cit.* pp. 56–57, and Debevoise, *op. cit.* pp. 16–17.

37. Reuther, *op. cit.* p. 249.

38. *Ibid.* pp. 249–50 and 252–53, Pls. 86–87 (Nos. 199–200); also Koldewey, *Das wieder erstehende Babylon* (4th ed.) pp. 268–69 and Figs. 196–97. Much older (Late Assyrian) coffins consisting of two sections were found at Assur; see Julius Jordan, "Die assyrische Gruftanlage," *MDOG* No. 40 (May, 1909) pp. 29 ff., Figs. 11–12, and Pl. I; also Andrae in *MDOG* No. 25 (Nov., 1904) Fig. 7. "Drab pottery coffins" (ca. 180 × 40 × 18 cm.) are reported to have made their appearance in Level II (ca. A.D. 43–118) of Seleucia; see Yeivin, *op. cit.* p. 48 and Pl. XVI, Fig. 2. For Assur burials, see now Haller, *Die Gräber und Gräfte von Assur*.

39. Reuther, *op. cit.* p. 161.

40. Yeivin, *op. cit.* p. 37.

41. At the beginning of the Christian Era; see Unvala in *RA* XXVI 133 ff. and Fig. 1 A.

42. *Ibid.* p. 134; these data have to be amplified and confirmed to be useful for a study of burial methods.

43. *Ibid.* pp. 138–39. The lengths of the coffins (1.50–2.00 m.; *ibid.* p. 134) definitely suggest that they had contained normally interred bodies. The effect of the destructive action of rodents is shown on our Pls. 87 D, H and 88 C.

44. Herodotus i. 140 says: "That this is the way of the Magians I know for a certainty."

21. Camilla Trever, *Terracottas from Afrasiab* (Moscow-Leningrad, 1934).

22. For a fuller discussion see K. A. Inostrantsev, "On the ancient Iranian burial customs and buildings," trans. L. Bogdanov (*Journal of the K. R. Cama Oriental Institute*, No. 3 [Bombay, 1923] pp. 1–28); see also J. M. Unvala, "Some old Zoroastrian customs," *Acta Orientalia* IV (Lugduni Batavorum, 1926) 316–19. Fragments of ossuaries of baked clay are illustrated in Pope, *Survey* IV, Pls. 145 B, D, G and 195 B; cf. *ibid.* Vol. I 449–58, the article by Strelkoff, "Iran and the pre-Islamic art of West Turkistān."

23. Or, in Herzfeld's opinion, starting even as early as the 1st century of our era; see his *Archaeological History of Iran* (London, 1935) pp. 38–39.

24. In certain eastern parts of the empire the bones of the dead were not even gathered; see Rapp in *ZDMG* XX 55.

25. *Ibid.* pp. 54 f.

26. See Vol. I 57.

27. See Herzfeld, *op. cit.* pp. 37 f. and Pl. V.

28. *Travels and Researches in Chaldaea and Susiana . . . in 1849–52*, pp. 405–6.

29. *L'Acropole de Suse*, pp. 426–28 and Figs. 274–77.

30. *Ibid.* p. 428.

31. *Ibid.*

32. See Samuel Yeivin, *The Tombs Found at Seleucia (Seasons 1929–30 and 1931–32): Second Preliminary Report upon the Excavations at Tel Umar, Iraq . . .* (Ann Arbor, 1933) p. 45.

Their bones were perhaps gathered and deposited in such ossuaries as were found near Persepolis<sup>45</sup> and in other areas. Nothing is definitely known about the disposal of Persian commoners during the Achaemenid period. Herodotus' remark that a corpse is covered with wax before interment<sup>46</sup> cannot refer to a burial custom of poor villagers; but it does indicate that inhumation was practiced. Cremation, on the other hand, was considered sacrilege.<sup>47</sup>

Graves of the Achaemenid period have been found at Susa. However, except for the statement that the adult dead had been interred in simple pits and that children's corpses had been disposed of in jars,<sup>48</sup> no specific information is available concerning skeletal remains, position of the body, orientation, and so forth. One rich burial of Achaemenid Susa was discovered and described by De Morgan.<sup>49</sup> A tublike bronze sarcophagus<sup>50</sup> contained the skeleton of a woman in dorsal position, legs extended, arms crossed on the chest, head raised<sup>51</sup> and resting on the base. The orientation of the coffin was north-south,<sup>52</sup> but the direction of the head end is not reported. Great numbers of ornaments of gold and semiprecious stones covered and surrounded the upper part of the skeleton (cf. p. 76); two alabaster vessels lay beside the legs; and a silver bowl leaned against the wall of the coffin. Two silver coins, struck between 350 and 332 B.C., were also found inside the coffin. Their date, combined with the absence of objects of Hellenistic type, attributes the burial to the end of the Achaemenid period.

The graves of Achaemenid Babylon are characterized by the use of reversed earthenware coffins,<sup>53</sup> that is, boxes placed in the fashion of lids over corpses. These coffins—one end squared, the other rounded—were obviously derived from the earlier short type of coffin,<sup>54</sup> which was only long enough to accommodate a body with closely flexed legs. However, even the coffins of the Achaemenid graves were not long enough (1.30–1.50 m.<sup>55</sup>) to fit extended bodies of adults. Their legs were always somewhat contracted. According to the excavators of Babylon, the method of burying the dead with extended legs started here after the end of the Achaemenid period; but the reversed coffin of Achaemenid type persisted, in addition to other means of disposal, until the beginning of our era.<sup>56</sup>

In recapitulating the funerary data gathered on the preceding pages, we find that the combination of several features, namely, the positions of a number of heads, the use of earthenware coffins, the absence of typical Islamic pottery and other objects, and the lack of transitional

Sasanian-Islamic vessels, excludes the attribution of the Persepolis Spring Cemetery to the Moslem period, beginning in Iran with the decisive battle of Nihavand (A.D. 642)—this, in spite of the fact that, according to the present state of our knowledge, only Moslem cemeteries show a pattern of orientation close to that of our burial ground (see p. 120).<sup>57</sup>

The Sasanian period (A.D. 224–642) and, presumably, the two last centuries of the Parthian era are eliminated if the Zoroastrian method of disposal of the dead, namely exposure to birds and beasts,<sup>58</sup> was as common during that time as we are told by historians.<sup>59</sup> There is a radical difference between this manner of disposal and the burial method applied at Persepolis Spring. Here the survivors tried to protect their dead against animals by coffins whose lids were weighted by boulders and whose central gaps were blocked by stones or bricks.<sup>60</sup>

It is conjectural, at present, to what extent Zoroastrian exposure or what other methods of disposal of the dead prevailed in the western parts of the Sasanian Empire. If certain Susa burials are correctly dated, we must assume that the bodies of children at least were buried in jars (see p. 121).

In Persis, that is, the region which concerns us here, the era between the fall of the Achaemenids and the beginning of the Sasanian period has been subdivided as follows:<sup>61</sup> rule of Alexander the Great from the destruction of Persepolis in 330 until his death in 323 B.C.; Seleucid rule from 323 until about 300 B.C.; rule of the Fratadara kings of Persis from about 300 until about 150 B.C.; Arsacid-Parthian rule from about 150 B.C. (conquest of Persis) until A.D. 224. In the Persepolis area remains of this era include a Fratadara temple of the 3d century B.C.,<sup>62</sup> a building with a reused Achaemenid doorway<sup>63</sup> situated about 500 meters north of the Persepolis Terrace, and a stratum of the city mound of Istakhr.<sup>64</sup> Presumably during an early phase of this era Palace H was erected on the Persepolis Terrace from parts of earlier structures.<sup>65</sup>

Funerary data pertaining to the early post-Achaemenid centuries and reported from localities outside Persis agree in part, or at least do not conflict, with the burial methods observed at Persepolis Spring. The dead of Babylonian towns and of Susa were also disposed of by interment (see p. 121). Earthenware coffins, at times similar in shape to those of our site and covered by lids made in two halves, protected the dead in Elam and Babylonia, as at Persepolis Spring. Furthermore, the reported uniform orientation of some Parthian burials at Susa—if confirmed by the discovery of further graves (see p. 121, n. 42)—would provide an important additional clue for the dating of the Persepolis Spring Cemetery. As to the extended position of the corpse, we have mentioned that at Babylon this burial cus-

45. Herzfeld claims that pre-Arsacid ossuaries are known only in Media proper, implying thereby that he considers all ossuaries (*ostothekai*) of the Persepolis area post-Achaemenid; see *IAE*, pp. 217–18.

46. Herodotus i. 140.

47. *Ibid.* iii. 16.

48. De Mecquenem in Pope, *Survey* I 326.

49. *MDP* VIII 29–58.

50. Considered by De Mecquenem, for reasons not specified, to be probably a reused Elamite coffin (*loc. cit.*). The find-location, in pre-Achaemenid, Elamite debris (see *MDP* VIII 36), does not date the object.

51. Apparently on account of the shortness of the coffin; see colored illustration in *MDP* VIII, Pl. II.

52. *Ibid.* p. 36 and Fig. 66.

53. "Stülpräber"; see Reuther, *op. cit.* pp. 34 and 234–45, Pls. 79–84.

54. "Hockersarg"; *ibid.* pp. 212 ff.

55. *Ibid.* p. 236.

56. *Ibid.* p. 235; at times these earthenware boxes were used in the fashion of ordinary coffins and provided with covers of wood or clay (*ibid.* p. 245).

57. As to the reported orientation of Parthian burials at Susa, see p. 121, n. 42.

58. Originally practiced by the Magians only? Cf. Herzfeld, *Archaeological History of Iran*, p. 39.

59. Cf. e.g. Procopius *De bello Persico* i. 11. 35: "... it was forbidden by the laws of the Persians ever to hide in the earth the bodies of the dead."

60. Rodents, however, found their way into many coffins; see p. 121, n. 43.

61. See chronological table in Erdmann, *Die Kunst Irans zur Zeit der Sasaniden* (Berlin, 1943) pp. 134–35.

62. See Vol. I 56.

63. *Ibid.* pp. 56 f.

64. See *OIC* No. 21, pp. 105 f.

65. See Vol. I 279–82.

tom was apparently unknown prior to Alexander's conquest of the city. The reversed coffins used to cover the dead during the Achaemenid period were too short to accommodate fully extended bodies (see p. 122). From Susa, on the other hand, we know of at least one (late) Achaemenid coffin burial in extended position (see p. 122).

These data suggest in a general way the period during which the Persepolis Spring Cemetery might have been in use—approximately from the 4th century B.C. to the beginning of our era. However, our only satisfactory chronological criterion—convincing, since combined with other funerary data—namely the pottery from the burial ground, reduces the possible span of time. The similarity between Achaemenian bowls found on the Terrace of Persepolis and certain bowls which occurred in the Persepolis Spring Cemetery is so close (see p. 119) that the two sets of vessels cannot be far apart in time. We know that the Persepolis bowl types with which we are concerned persisted for some time, for in the refuse of the near-by Fratadara temple occurred red-ware bowls with very similar although somewhat more elaborate profiles. At least one bowl type of Persepolis Spring (Pl. 89:8) was duplicated by a vessel fragment from the post-Achaemenid building north of the Persepolis Terrace.

There are additional minor similarities between the ceramics of Persepolis and Persepolis Spring;<sup>66</sup> but canteens (e.g. Pls. 71:8-9, 72:12-13, 73:2) and tall bottles (e.g. Pls. 71:11-13, 72:16-17, 73:5-6) were missing in the cemetery. The alabaster jar (Pl. 89:12)—possibly Achaemenid (see p. 119)—may have been a discard picked up from refuse while Persepolis flourished, or it may have been found in the debris after the destruction of the royal

66. Such as the spouts of pitcher PS 9 (Pl. 89:5) and jar PT3 261 (Pls. 71:4, 72:11); the shapes of small jars (cf. Pl. 89:6 with Pls. 71:2 and 72:7-8). Glazed ware was rudimentary and infrequent at both localities (see pp. 96 and 119).

site. The forms of the few modest ornaments from the cemetery, while not characteristic of any particular period, do at least not conflict with our dating of the cemetery; but the absence of beads and pendants of stone, metal, shell, and so forth, in the graves is puzzling. The two complete iron objects, a finger ring and a bracelet (Pl. 89:3-4), could belong to any time after the use of iron became common. Torsioned bracelets ending in animal heads, similar to those of bracelet PS 18 (Pl. 89:2), were known in pre-Achaemenian Luristan.<sup>67</sup> Achaemenid torques and bracelets of similar form but more elaborate occurred in the Oxus Treasure.<sup>68</sup> Fragments of a torsioned bronze bracelet were found on the Persepolis Terrace also (Pl. 46:3); but similar ornaments were undoubtedly used during subsequent periods.

After weighing all the evidence presented on the preceding pages, we conclude that the cemetery of Persepolis Spring belongs either to the end of the Achaemenid period or to the early part of the post-Achaemenid era. The principal criterion for dating the site is provided by the pottery, in particular by eight fragmentary bowls of Achaemenid and early post-Achaemenid types. Our main doubt in assigning such an early date to the cemetery is based on the burial orientation, which is suspiciously close to that of Moslem graves. A verification of the existence of a similar orientation rule in regard to coffin burials at pre-Sasanian Susa would dispel our doubt and confirm our dating.

The fall of Persepolis probably had no effect on the burial customs of the common people. Thus, whether we date Persepolis Spring before or after that event, the information derived from its graves throws light on the problem of the disposal of the dead in Achaemenid Iran.

67. See e.g. Pope, *Survey IV*, Pl. 57 E.

68. Dalton, *The Treasure of the Oxus* (2d ed.) e.g. Pls. XVII 138, XVIII 122 and 131 (twisted hoop of No. 131 is modern restoration).



*APPENDIX*





## ANALYSES OF VARIOUS SUBSTANCES FROM PERSEPOLIS

## A STUDY OF GLASS

By Frederick R. Matson

## COLORLESS GLASS

TWO glass fragments from the Persepolis Treasury were submitted for study with the query, "Can analysis determine whether they show sufficient differences so that one vessel may be considered Egyptian and the other Persian (Achaemenid)?" As the two pieces are identical in their physical properties and appearance, they would seem to have come from the same source. A spectrographic analysis of one piece suggests an Egyptian origin and helps explain the exceptional lack of a pale green tint in this colorless glass. In the following report the two pieces will first be described in terms of their appearance and probable method of manufacture, following which a technological analysis of the glass composition and the conclusions it suggests will be presented.

## DESCRIPTION OF THE SAMPLES

An elaborately worked convex fragment of colorless glass (PT5 961, from Room 42; Fig. 26), which may have been part of an ornament, is roughly  $3 \times 3$  cm. in area with a maximum thickness of 0.4 cm.; it is only 0.05 cm. thick in places along the edge. This variation together with a greater curvature on the exterior than on the interior sug-

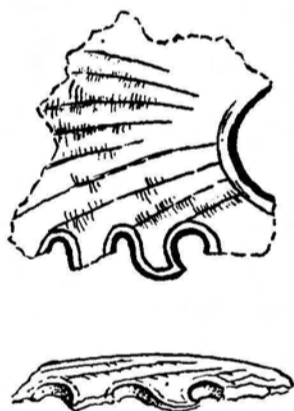


FIG. 26. COLORLESS GLASS FRAGMENT (PT5 961). ACTUAL SIZE  
DRAWINGS BY LEWIS ROSCOE

gests that the object was formed by pressing hot malleable glass into a mold. A ribbed pattern radiating from a deeply concave edge was thus formed on the outer surface. The remaining border area is cut in a wave design. Both edges in their final form were wheel-cut, for they meet the surfaces sharply at right angles, whereas this jointure would be rounded if formed in a mold when the glass was still plastic. The outline is emphasized by an engraved line that follows it at a distance of 0.1 cm. from the edge.

The exterior of the piece was less altered through weathering than the inner surface, which has a much thicker white incrustation. This suggests that both surfaces were not equally exposed to the action of moisture while

buried, but it may also reflect a difference in the original condition of the two surfaces resulting from the process of manufacture or from use. The inner surface is smooth, yet any evidence of surface irregularities that might give a clue as to the manner in which the object was formed has disappeared. It has flaked badly to a depth of at least 0.05 cm. during the process of weathering, judging from the small unaltered islands of glass that protrude above the surface. Like much ancient glass this piece has a beautifully iridescent but finely pitted surface in the areas where the crust has been removed.

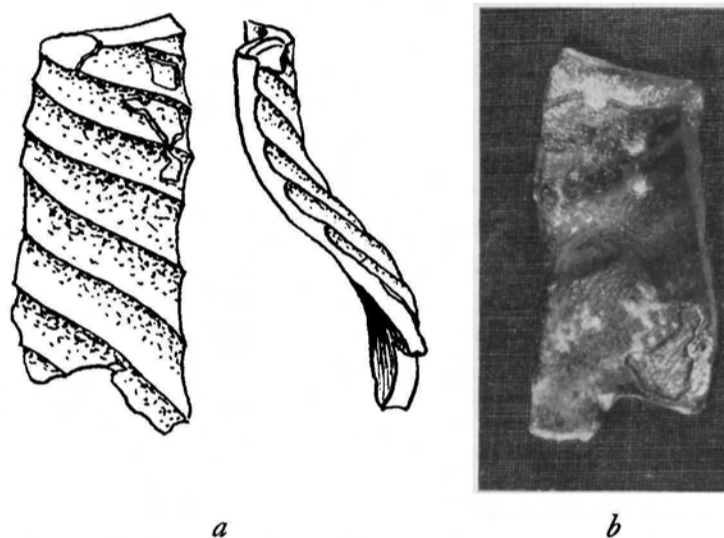


FIG. 27. SHERD OF COLORLESS GLASS VESSEL (PT5 962). ACTUAL SIZE  
DRAWINGS BY LEWIS ROSCOE. PHOTOGRAPH OF INTERIOR  
SURFACE BY H. BRUCE SCHROEDER

A rectangular sherd (PT5 962, from Hall 41) from the neck and shoulder area of a jar or bottle embellished with diagonal fluting constitutes the second piece of colorless glass studied (Fig. 27). The fragment is about  $2.3 \times 4.7$  cm. in area and varies in thickness from 0.14 to 0.5 cm. In the neck region the vessel was about 4 cm. in external diameter; below this it swelled to a diameter of 8–10 cm. at the shoulder. The diagonal wheel-cut fluting is fashioned in a counterclockwise direction with sharp ridges about 0.5 cm. apart limiting the flutes, which are deeper in the thick neck region than in the shoulder area, where one spot, slightly misshapen, is only 0.14 cm. thick.

Both surfaces had been freed of almost all of their opalescent weathered crust before the sherd was received for study, but it is apparent that a skin of at least 0.05 cm. in thickness was attacked and decomposed while the fragment was buried, for on both faces a few small islands of clear glass rise above the finely pitted and beautifully iridescent surfaces. The weathering process must have altered the surface uniformly, for the fluting pattern remains quite clear.

Evidence on the interior surface (Fig. 27 *b*) suggests that the vessel was formed about a textile-wrapped core. An island of unattacked glass about 0.5 cm. in diameter in the shoulder region bears upon its surface a fine textile impression such as would have been formed had a shaped sand core inclosed in a textile been dipped in a crucible of molten glass to form the vessel.

#### PHYSICAL PROPERTIES

The almost complete lack of color is an unusual property in this glass. When held up to the light and viewed through the sherd wall it is colorless, but through the edge it has a faint yellow shade in the same way that colorless plate or window glass has a green tint when seen on edge.

Lucas cites examples of colorless glass from the 18th dynasty,<sup>1</sup> and Partington states in addition: "There is colourless glass as beads, bottles and vases of the Saite Period."<sup>2</sup> It is possible that very pale green glass to which no colorants were intentionally added has been termed colorless by some writers, particularly in very thin specimens, for the iron present as an impurity in most early glass will produce such a tint. Schmidt recognized the difference, saying: "At times the glass body appears faintly green; but as a rule the Achaemenian<sup>3</sup> glass vessels, as defined by the fragments found at Persepolis, are not tinted."<sup>4</sup> To settle this question, precise observations of the color could best be made in museums where large collections of dated fragments exist.

The index of refraction and the specific gravity of a glass are two properties that can be accurately measured; and these help to define a glass, for they vary with changes in chemical composition. Both pieces of glass tested had an index of refraction of 1.518, and their specific gravities were almost identical—2.515 and 2.512. These values are within the range for typical soda-lime-silica glasses.

Examination for imperfections such as entrapped bubbles and unmelted sand grains was made by immersing the pieces in ethylene bromide, which has an index of refraction not much greater than that of the glass. In such a liquid the outline of the sherds disappears and only inclusions that have a different index stand out sharply. The fragments were studied under a binocular microscope with a bright light shining up through the glass. A hairline-thin network of cracks seen on both surfaces of the immersed pieces was caused by the weathering and subsequent scaling of the glass. There were surprisingly few very fine bubbles in the glass, which attests its good quality. The presence of antimony (which is discussed in the next section) may in part be responsible for this, since antimony is a fining agent used at times in modern glass manufacture to help remove entrapped bubbles of gas from the molten glass.

#### COMPOSITION

The general pattern of the chemical constitution of the colorless Persepolis glass was established by a semiquantitative spectrographic analysis of a powdered sample of sherd PT5 961. The chemical elements present were determined and their relative amounts were estimated as falling within one of the following percentile groups: 1–10, 0.1–0.9, 0.01–0.09, and 0.001–0.009 per cent. These are in-

1. Lucas, *Ancient Egyptian Materials & Industries* (3d ed.) p. 219.
2. Partington, *Origins and Development of Applied Chemistry*, pp. 127–28.
3. [Or pre-Achaemenian.—E. F. SCHMIDT.]
4. *OIC* No. 21, p. 85.

dicated as X.0, 0.X, 0.0X, and 0.00X per cent. Such an analysis establishes the proportional composition of the glass and is obtained far more rapidly than a precise quantitative analysis. It has the added advantage of showing the presence of elements which occur in such small amounts that they would not be determined in the usual chemical analysis. These trace elements may serve as clues to the place of origin of the glass.

The spectrographic analysis was made by Dr. Harold L. Lovell, Assistant Professor of Mineral Science in the School of Mineral Industries of the Pennsylvania State University. Dr. Lovell is perfecting a technique by which the quantitative spectrographic analysis of inorganic compounds can be made accurately. The analysis here presented is but the first step in the process, and the accuracy is greatest at this stage for the elements present in 0.X per cent and less. On the basis of these data, it is possible to make a second spectrographic analysis that is accurate within 10 per cent of the individual values. Such an analysis has been made of the Egyptian blue compound reported on pages 133–35. Dr. Lovell expects to complete a

TABLE XI  
CHEMICAL COMPOSITION OF COLORLESS GLASS

	PT5 961	10*	11*	22†
SiO <sub>2</sub>	Major	63.86	63.22	65.95
Al <sub>2</sub> O <sub>3</sub>	X.0	0.65	1.04	2.49
Fe <sub>2</sub> O <sub>3</sub>	0.X	0.67	0.54	0.28
CaO	X.0	7.86	9.13	6.89
MgO	0.X	4.18	5.20	1.37
BaO	0.0X			
SrO	0.0X			
Na <sub>2</sub> O	X.0	22.66	20.63	20.30
K <sub>2</sub> O	X.0	0.80	0.41	0.96
Li <sub>2</sub> O	0.X			
Sb <sub>2</sub> O <sub>3</sub>	0.X			
SO <sub>3</sub>	—	—	—	1.08
MnO	0.0X	Trace	—	0.97
TiO <sub>2</sub>	0.0X			
CuO	0.00X			—

\* From Tell el-Amarnah; see Bernhard Neumann, "Antike Gläser," *Zeitschrift für angewandte Chemie* XXXVIII (1925) 858.  
† From the island of Elephantine, Ptolemaic period; see *ibid.*

similar time-consuming study of the Persepolis glass, which will be reported elsewhere along with a description of the technique used.

The preliminary analysis of the Persepolis glass is given in Table XI, where the elements are reported in their most common oxide form. For comparison, three colorless Egyptian glasses that were analyzed by Gertrud Kotyga are included in the table (Nos. 10, 11, and 22).

The spectrographic analysis shows that the Persepolis glass is of the normal soda-lime-silica composition which is still basically that of window and plate glass today. Because there is a limited compositional range in which good glass that will not weather too rapidly can be made of these three ingredients at a fairly low melting temperature, the similarity in composition is understandable.

Silica is the major ingredient in most glasses, and the raw material generally used to supply it is quartz river sand. The sand brings with it impurities as coatings on the individual grains, as inclusions in the quartz, or as foreign mineral particles. The iron, manganese, and titanium (reported in their oxide form as Fe<sub>2</sub>O<sub>3</sub>, MnO, and TiO<sub>2</sub>) and possibly some of the aluminum (Al<sub>2</sub>O<sub>3</sub>) present in PT5 961 may be attributed to impurities in the sand. The major part of the aluminum probably comes from the corrosive attack of the glass upon the walls of the clay cru-

cible in which it was melted. Some of the iron might be attributed to this source also. The minute amount of copper (CuO) present might be due to slight contamination of either raw materials, glass, crucibles, or tools, for copper was used as a coloring agent to produce the blue glass which was so popular in ancient Egypt.

Since sulphur cannot be determined spectrographically, its presence would have to be established by direct chemical analysis.

Limestone is an important raw material in glass manufacture, for it supplies the alkaline earths which, among other things, increase the resistance of glass to weathering. Calcium (CaO) may be the dominant or only alkaline earth in the limestone, but many limestones also contain magnesium (MgO) as a major constituent. If CaO and MgO are present in equal molecular amounts the rock is termed a dolomite. The relative proportion of these two alkaline earths present in a glass can sometimes indicate its place of manufacture or, more accurately, the source of the limestone. For example, glass made at Tell el-Amarnah contains considerable MgO, while that from the Delta region has little or no MgO. This can be seen by comparing analyses 10 and 11 in Table XI with analysis 22. Lucas analyzed 132 specimens of limestone from the neighborhood of Cairo and found that all except two specimens contained very little MgO, while at Saqqarah a series of broken 3d dynasty stone vases were made of dolomite and others of dolomitic limestone.<sup>5</sup> The blue glass from Thebes and Tell el-Amarnah that was analyzed spectrographically by Farnsworth and Ritchie<sup>6</sup> contained an appreciable amount of MgO, as did the glasses from the same sites that were analyzed chemically by Kotyga and M. Rupprecht.<sup>7</sup> Rupprecht and Neumann analyzed glasses from Samarra<sup>3</sup> and Nippur also and found that they too contained considerable MgO.<sup>8</sup>

On the basis of the information now available it would appear that the Persepolis glass analyzed by us was made in Egypt in the vicinity of Cairo or in the Delta, since its MgO content is very low.

Spectrographic analysis revealed minute amounts of barium and strontium (BaO and SrO) in the Persepolis glass. These no doubt were introduced with the lime, for both occur in varying amounts in many limestones. Farnsworth and Ritchie's spectrographic analyses of 18th dynasty glass from Thebes and Tell el-Amarnah showed a trace of barium in only 9 of the 69 glasses analyzed. Strontium was not reported for any of the glasses, and therefore it may not have been sought in the spectrographic record or there may be a significant regional difference in its trace occurrence. Seligman and Beck found strontium as a trace element in a few pieces of Egyptian glass of Islamic times; barium appeared possibly in a bead from Qau, and that piece contained no strontium.<sup>9</sup> These elements may per-

haps be of diagnostic value in tracing the place of manufacture of some types of ancient glass.

Both sodium and potassium (Na<sub>2</sub>O and K<sub>2</sub>O) are present in the alkaline group of glass constituents. A third alkali, lithium (Li<sub>2</sub>O), occurs in PT5 961. It also appears as a trace element in all of the spectrographic analyses of Egyptian glass by Farnsworth and Ritchie and by Seligman and Beck and perhaps has no diagnostic significance.

Antimony (Sb<sub>2</sub>O<sub>3</sub>) is the only element to be accounted for in the analysis of the Persepolis specimen. The amount present is of the order 0.X per cent, which is unusually high, too large to be attributed to chance inclusion as an impurity in a glass batch ingredient. Farnsworth and Ritchie report at least a trace of antimony in all except 10 or possibly 11 of the 73 Egyptian glasses they analyzed, most of which were blue in color and contained traces of copper and lead. Two red glasses in their series contained a moderate amount of copper and also a trace to moderate quantity of antimony. Seligman and Beck did not find any antimony except for a trace in one of the Egyptian Islamic glasses they tested but did find it in three glass beads from Qau, which also contained copper. It is probable that in the cases cited antimony is an impurity in the copper. Antimony appears as at least a trace element in 7 out of the 16 analyses of Egyptian copper objects that were summarized by Lucas from several published sources.<sup>10</sup> Otto has shown spectrographically that antimony is present in many European copper ores.<sup>11</sup>

Antimony is an intentional ingredient in the Persepolis glass, for there is only the smallest trace of copper present with which it might be associated. This is significant, for antimony acts as an oxidizing agent in glass. It changes the state of oxidation of the iron from the ferrous state, in which it produces a pale green tint in colorless glass, to the ferric state, in which iron causes a pale yellow shade to develop, sometimes making the glass appear almost completely color-free. The Persepolis glass is in the latter group and owes its unusual clarity to the oxidizing effect of the antimony upon the iron in the glass.

The occurrence of metallic antimony or even of compounds in Egypt is unknown, according to Lucas,<sup>12</sup> but it is plentiful in Anatolia and Iran. This might make one question whether the Persepolis glass originated in Egypt were it not for the fact that yellow glass containing antimony and lead is known in Egypt in the 18th and 19th dynasties.<sup>13</sup> Lead antimonates can produce yellow glasses, but the role of iron impurities and the effect of the ever present sulphur must also be considered in a discussion of the development of yellow colors in glass. In Assyrian recipes for glass manufacture antimony was one of the ingredients used.<sup>14</sup> Further analyses of dated glass from both Egypt and other parts of the Near East are badly needed so that such technological developments as the use of antimony can better be traced. Spectrographic analyses on a quantitative basis may make such studies economically possible.

10. Lucas, *op. cit.* p. 543.

11. Helmut Otto, "Über die um 2000 v. Chr. in Europa benutzten Kupferlegierungen," *Forschungen und Fortschritte* XXIV (1948) 152-55.

12. Lucas, *op. cit.* p. 222.

13. See *ibid.* p. 219 and Farnsworth and Ritchie, *op. cit.* Table IV.

14. See R. Campbell Thompson, *On the Chemistry of the Ancient Assyrians* (London, 1925).

5. Lucas, *op. cit.* p. 468.

6. Marie Farnsworth and Patrick D. Ritchie, "Spectrographic studies on ancient glass: Egyptian glass, mainly of the Eighteenth Dynasty, with special reference to its cobalt content," *Technical Studies in the Field of Fine Arts* VI (1937/38) 155-73.

7. See Neumann, "Antike Gläser," *Zeitschrift für angewandte Chemie* XXXVIII 858 and XL (1927) 963.

8. See *ibid.* Vol. XL 965 and Neumann, "Der babylonisch-assyrische künstliche Lasurstein," *Chemiker-Zeitung* LI (Cöthen, 1927) 1014.

9. C. G. Seligman and H. C. Beck, "Far Eastern glass: Some Western origins," *The Museum of Far Eastern Antiquities, Stockholm, Bulletin* No. 10 (1938) pp. 1-64.

## CONCLUSION

The two pieces of glass tested are alike in their physical properties. The chemical composition as evidenced by the spectrographic analysis of one piece is similar to that of Egyptian glass made in the vicinity of Cairo and in the Delta. The distinctive lack of a pale green tint in this colorless glass is due to the intentional addition of antimony, a fact which may serve as a diagnostic trait of value in tracing the temporal and spatial distribution of glass from its place of manufacture when more analyses are available.

OPAQUE RED GLASS<sup>15</sup>

Three specimens from Persepolis were sent for identification—a bead, a slab, and a lump. They were opaque red glasses of the type generally described as sealing-wax red, liver red, or hematinone. Such glass has been made since at least the time of the 18th dynasty and was popular at Pompeii. The chemical composition of this material and the problems relating to an explanation of the red color will be briefly discussed on the basis of the physical properties of the three samples, a qualitative spectrographic analysis of the slab, and the data in the literature.

## DESCRIPTION OF THE SAMPLES

The cylindrical dull red bead (PT4 108, from "Garrison Street," Plot HG 54, near E. entrance of Treasury), with concave walls that give it the appearance of a small pulley, is slightly irregular in shape and has a straight-walled perforation (Fig. 28; cf. bead PT6 363 on Pl. 44:1). On the



FIG. 28. BEAD OF OPAQUE RED GLASS (PT4 108). ACTUAL SIZE

surface a few flakes remain of what appears to have been a weathered yellow surface layer. On the wall of the perforation and in some of the surface pores there is a thin layer of green glass. The bead appears to have been made from a flat strip of glass that was rolled around a rod. Where chipping has occurred, the glassy nature of the material is evident.

The flat slab (PT7 379, from the west wing of Xerxes' Harem, Corridor 12, Plot IE 88) is 1.3 cm. thick and approximately 4 × 5 cm. in area. A semicircular hole 3.5 cm. in diameter is the fragmentary evidence that this slab had a specific use. One surface is ground smooth and contains small round pits, the remnants of spherical holes in the glass that were cut open during the grinding. The other surface, irregular and green, has the appearance of a viscous glass after casting. A thin flaking yellow layer of weathering products covers parts of all surfaces, including the fractured edges, thus indicating that the object was broken in antiquity.

The oval lump (PT7 380, from dump soil, exact find-spot unknown), about 3.5 × 5 cm. on its upper concave surface, curves toward a base at a depth of 2 cm. The piece appears to have been broken out of a crucible.<sup>16</sup> On the surface is a green vitreous layer about 0.5 cm. thick, which chips off readily and is separated from the red glass by a

15. [This term replaces our designation "red (or red and green) composition" used throughout Volume I. In Volume II Matson's term has been adopted for all objects concerned.—SCHMIDT.]

very thin white film. Small pore marks up to 0.2 cm. in diameter are much in evidence on the surface.

## PHYSICAL PROPERTIES

The three pieces of glass differ somewhat in color. The bead is orange-red, while the other two are sealing-wax red with the slab being a little more orange in color than the lump.

The index of refraction and the specific gravity of the samples are shown in the following table.

Sample	Color	Index of Refraction	Specific Gravity
Bead PT4 108	Orange-red	1.565	3.085
Slab PT7 379	Sealing-wax red	1.565	2.88
	Green surface glass	1.56	
	Yellow surface flakes	1.76	
Lump PT7 380	Deeper sealing-wax red	1.56	3.07
	White surface	1.45	

The presence of lead, copper, and iron can account for the increase in the index of refraction and the specific gravity above those of soda-lime-silica glass such as sherd PT5 691 (see Table XI). The specific gravity of the red glass is slightly less than that of copper slags from the Sinai Peninsula that were studied by Lucas.<sup>17</sup>

The green surface layer on the slab is of the same composition as the red glass. The difference in color is caused by the fact that in the green glass the copper is all in solution, imparting a green color. Also fine bubbles are absent in the green surface layer.

A microscopic study of the red glass shows that it is full of very minute bubbles, a fact which explains its opacity, for the mass of bubbles renders the glass opaque by reflecting the light rays in many directions, in the same way that egg white changes in appearance when it is beaten into a froth. The bubbles, 1 micron to 2 microns in diameter, are in the colloidal size range. They are more densely packed and smaller in the bead than in the slab. When the microscope is focused sharply on individual bubbles they are red in color, showing that they contain the precipitated copper. When slightly out of focus the bubbles appear green, probably at the interface where some cupric ions may be in solution. No evidence of the presence of metallic particles of copper could be found at the highest magnifications. An X-ray pattern of the glass failed to show the presence of any crystalline particles of copper. Weyl explains this phenomenon in the following manner: "Hematinone represents a red opaque glass containing copper particles of the same order of magnitude as the wave length of light. Crystals of this size produce opacity, but are not large enough to produce metal gloss."<sup>18</sup> The glass itself is colorless when viewed as a powder under the microscope, for cuprous ions in solution are not colorants. The red color is due to the reflection of the minute copper particles.

The yellow surface flakes on the bead and the slab are products of weathering. They contain a large amount of lead and are probably a lead silicate composed of approxi-

16. [If it is true that the piece is a reject or waster, we have to assume that objects of opaque red glass were manufactured at Persepolis, though the paucity of specimens made of this substance speaks against this assumption. Again, Professor Matson has pointed out to us that broken objects of opaque red glass could have been remelted locally and formed into other objects, such as beads, with very little equipment. See also p. 133, n. 4.—SCHMIDT.]

17. Lucas, *op. cit.* pp. 238-39.

18. Woldemar A. Weyl, *Coloured Glasses* (Sheffield, 1951) p. 421.

mately 67 per cent lead oxide, the balance being silica with a trace of alkali and of iron present. This estimate is obtained from the work of Merwin and Andersen on the optical properties of glasses in the system PbO-SiO<sub>2</sub> that is cited by Morey.<sup>19</sup> Flow lines in the glass of the slab, and the parallel cutting marks where the disk was removed from it, are emphasized by the concentration of the yellow lead silicate along them. A study of the weathering process and the relationship of the red and the green glass would make an interesting problem.

The green surface area on the red lump PT7 380 has an unusual microscopic structure. The glass itself is very pale green and contains irregular wormlike inclusions about 5 microns in length that have the same red color as the bubbles in the red glass. Some copper is in solution in this glass in the cupric form, which produces the green color. The inclusions are evidently not of the right size or abundance to assert their color in the over-all effect. The thin white layer beneath the green surface has a low index and is probably a form of hydrated silica.

## COMPOSITION

Chemical spot tests showed that all three glasses contained copper, lead, and iron.

A qualitative spectrographic analysis of glass from slab PT7 379 was made by Dr. Harold L. Lovell in the same manner as that described in the discussion of the colorless glass. A quantitative spectrographic analysis of this glass will be made later. The results of Lovell's analysis, together with those of three Ptolemaic glasses from the island of Elephantine that were analyzed by Kotyga (Nos. 18-20), are shown in Table XII.

Many of the points made in discussing the spectrographic analysis of the Persepolis colorless glass also apply to the elements present in the red glass, and so only where there is a difference between the two will specific comment be made.

A dolomitic limestone was used for the lime in the glass batch, for the CaO and MgO are of the same general order in amount present. It would not be well to estimate the relative proportions of the alkalis Na<sub>2</sub>O and K<sub>2</sub>O present, but it should be noted that in the Elephantine red glasses potassium is a much more important part of the total alkali present than it is in the colorless glass (see Table XI). This suggests the use of plant ash as the raw material for at least part of the alkali and might indicate a different place of manufacture, although many formulas were certainly in use in one glasshouse. The important ingredients that established the character of this red glass were the copper, lead, and antimony (expressed in their oxide form—Cu<sub>2</sub>O, PbO, and Sb<sub>2</sub>O<sub>3</sub>). These will be discussed in detail. Sulphur was probably present, judging from the three Elephantine analyses. Among the trace elements, manganese and titanium (MnO and Ti) probably were impurities in the sand, and silver (Ag) often occurs as a trace element in lead. Chromium cannot be specifically accounted for, but it frequently occurs in serpentine rocks, which are widespread in Egypt and elsewhere in the Near East and were frequently used to form stone vessels and other artifacts. The minute traces of bismuth, cobalt, nickel, and tin that were identified spectrographically were probably introduced with the copper, lead, and an-

timony and may eventually serve as trace elements that will help indicate the sources of these metals. All of them occur in copper reamers from the 'Amuq in Northwest Syria.<sup>20</sup> The gallium was probably introduced as a trace element with the aluminum.

Copper can effectively produce a red-colored glass, but the conditions under which this is possible are limited and the manufacturing process has to be carefully controlled. A lead glass dissolves metals such as copper much more readily than does a soda-lime-silica glass, and therefore the presence of some lead is essential. Probably a copper-lead glass frit was prepared as an intermediate step in a manner somewhat like Assyrian processes for glassmaking reported by Thompson.<sup>21</sup> This frit would then be used as one of the ingredients in the final glass composition, and such a formulation could help to account for the relatively small amounts of copper and lead present in the Persepolis glass.

TABLE XII  
CHEMICAL COMPOSITION OF OPAQUE RED GLASS

	PT7 379	18*	19*	20*
SiO <sub>2</sub>	Major	58.45	59.10	55.63
Al <sub>2</sub> O <sub>3</sub>	X.0	5.00	3.55	3.50
Fe <sub>2</sub> O <sub>3</sub>	X.0	0.86	1.57	1.30
CaO	X.0	10.69	9.80	8.39
MgO	X.0	3.42	3.10	2.69
BaO	0.0X			
SrO	0.0X			
Na <sub>2</sub> O	X.0	9.02	10.29	12.21
K <sub>2</sub> O	X.0	7.55	6.44	2.82
Li <sub>2</sub> O	0.X			
Cu <sub>2</sub> O	0.X	2.09	2.52	4.40
PbO	0.X	1.28	3.02	6.28
Sb <sub>2</sub> O <sub>3</sub>	X-0.X			
MnO	0.0X	0.53	0.74	0.31
SO <sub>2</sub>	—	1.37	0.45	1.80
Oxides of Ag, Cr, Ti	Each 0.0X			
Oxides of Bi, Co, Ga, Ni, Sn	Each 0.00X			

\* From the island of Elephantine, Ptolemaic period; see Neumann in *Zeitschrift für angewandte Chemie* XXXVIII 858.

Lucas reports the composition of a copper slag from the Sinai Peninsula that had been analyzed by Sebelien as containing 21.7 per cent copper and 38.0 per cent lead, a most unusual composition.<sup>22</sup> It is possible that this material was one of the prepared frits used in glassmaking.

In order to produce a copper-red glass, it is necessary to "strike" it once the glass has been formed. This is done by reheating the colorless copper glass to a temperature above 500° C. and maintaining the heat for some while, at least an hour. Copper precipitates with the resultant formation of a red glass due to the reflection of light from the particles. This is a difficult process to control precisely, and the copper-lead fraction of the Persepolis glass may have been only one of the factors contributing to its red color.

The approximately 1 per cent or more of iron in the glass, judging from the Elephantine analyses, would tend to give a yellow-brown color to a lead glass or to one in which there is a strong oxidizing agent such as antimony present, providing the antimony is free to act in this manner. It is probably the iron that gives the brownish cast to the red glass.

The most striking and unexpected information obtained from the spectrographic analysis is the evidence that there

20. See Robert J. Braidwood, Joseph E. Burke, and Norman H. Nachtrieb, "Ancient Syrian coppers and bronzes," *Journal of Chemical Education* XXVIII (1951) 89, Table 3.

21. *Op. cit.*

22. Lucas, *op. cit.* p. 541.

19. George W. Morey, *The Properties of Glass* (New York, 1938) p. 374.

is considerable antimony present. Antimony can oxidize the iron, as already indicated, but it is also an opacifying agent when present in sufficient amounts. It causes multitudes of very fine bubbles to develop in a glass, with resultant opacity, and has been used for this purpose in many commercial enamels. Undoubtedly the bubbles that abound in the red glass are due to the antimony. When combined with sulphur in the proportion  $Sb_2S_3$ , antimony may be a reducing agent, but, more importantly, it can produce an antimony ruby red glass. Red glass colored by antimony sulfide can be developed by "striking" in the same manner as the copper reds.

The exact nature of the red color in the Persepolis glass is an interesting problem which would merit further laboratory work after several quantitative analyses of such glasses are available and their distribution in time and space is better known.

#### CONCLUSION

The opaque red glass from Persepolis has a complex composition in which several ingredients contribute to the development of the color. The presence of antimony is of particular interest. The glass may well have been made in Egypt, but red glasses were also produced in Assyria.

EGYPTIAN BLUE<sup>1</sup>

By Fredrick R. Matson

Two fragmentary blue objects and a sherd incrustated on its inner surface with a blue pigment were submitted for identification and study. All three consist of the artificial compound now known as "Egyptian blue" or "Vestorian blue," a calcium-copper-tetrasilicate with the formula  $\text{CaO} \cdot \text{CuO} \cdot 4\text{SiO}_2$ . It was used as a pigment in Egyptian 4th dynasty tombs and was still popular in the Mediterranean world in Roman times. The mineral nature of the compound was identified, studied, and synthesized during the 19th century. Partington has summarized the available information concerning it in classical sources and has traced in detail the scientific study of the material.<sup>2</sup> Lucas also treats the subject well and gives specific instances of the occurrence of the blue compound.<sup>3</sup>

## DESCRIPTION OF THE SAMPLES

A fragment (PT2 651) of a domelike blue object, whose base was apparently oval in shape, is  $9 \times 4$  cm. in basal dimensions and 4 cm. high. The surface, a slightly paler blue than the body, has a smooth semiglossy finish which suggests that the object was formed in a mold. Very fine round holes, up to 0.1 cm. in diameter, can be seen on the fractured faces. A hard calcareous brown clay crust adheres to portions of the surface.

A blue fragment (PT1 5) that necks out from a basal platform might have formed a leg or pedestal of an object, or, as Dr. Schmidt suggests, it may have been a projecting wall peg. The surface is a light blue, but the core is the same deep blue as the preceding piece. The light area, probably caused by weathering, penetrates to a depth of 0.3 cm. The smooth semiglossy surface indicates contact with a mold. The base of this artifact is  $6.5 \times 4.5$  cm. in area; it rises to a height of 5.5 cm., and the necked region is 4 cm. in diameter. A hard calcareous brown clay crust adheres to portions of the surface.

A buff-colored wheelmade sherd (PT7 381) 0.5 cm. thick, found in Room 21 of the Apadana (Plot HE 41), has a blue pigment incrustated on part of its interior surface to a maximum thickness of 0.05 cm.<sup>4</sup>

## MICROSCOPIC EXAMINATION

A thin section, 0.003 cm. in thickness, prepared from a chip of each of the two molded objects (PT1 5 and PT2

651), was studied under a petrographic microscope. Powdered samples of all three pieces were also examined microscopically, and their indices of refraction were determined. This work confirmed the provisional identification of the material as the synthetic mineral  $\text{CaO} \cdot \text{CuO} \cdot 4\text{SiO}_2$ .

The thin sections show that the body is almost entirely crystalline, the largest crystals measured being 0.009 cm. in length, most of them much smaller. The crystals are pleochroic and therefore have a very attractive appearance in thin section. There is a very small amount of residual glass in the structure. Calcite ( $\text{CaCO}_3$ ) appears as minute crystals throughout the porous body, particularly as a lining of bubbles. The calcite was probably introduced into the pieces by ground-water action after they were buried in the debris of the site. A little lime may have been used as a binder for the powdered pigment when it was pressed in a mold. A similar study of Egyptian tomb objects that had not been exposed to ground water would better show the origin of the calcite. The round pores seen in the thin sections were frequently 0.03 cm. in diameter; a few were 0.06 cm. On the objects themselves, some bubbles up to 0.1 cm. in diameter can be seen. A few angular grains of unmelted quartz up to 0.003 cm. in size appeared in the sections.

The surface crust is 0.004 cm. thick and is somewhat isotropic, indicating that it has a higher content of glass and fewer crystals than the main body of the pieces. This is not surprising. There is considerable calcite in this crust.

An X-ray pattern made of some of the powdered material gave a series of peaks, and these data will be useful in comparing similar materials in the future.

## METHOD OF MANUFACTURE

The crystalline nature of the body and the presence of fine bubbles throughout the mass suggest that this compound is a devitrified glass. Since most ancient glasses were made in several stages, not in one melting as today, it is probable that a copper-blue glass was prepared by melting the batch ingredients in a clay crucible. When cool, the clearest pieces of glass would be broken out of the crucible and would be powdered. These would then be used, perhaps with other powdered material and a binder, in the form of a paste that was pressed in a mold so as to obtain the desired shape of the object. When the piece had hardened, it was removed from the mold and allowed to dry and then was fired at a lower temperature than that at which the glass was originally melted. The heat would cause the glassy particles to sinter together and form one solid mass. Most glasses when reheated to a temperature below that at which they soften will tend to devitrify, that is, to become crystalline. Probably the formation of the crystals of  $\text{CaO} \cdot \text{CuO} \cdot 4\text{SiO}_2$  was effected in some such manner as that just described, but they were not intentionally desired. The artisans probably thought they had formed

1. [Corresponding—with reservation (see p. 135, n. 9)—to our term "blue (also bluish-green and greenish-blue) composition," which we have used throughout Vols. I and II in designating this substance.—SCHMIDT.]

2. Partington, *Origins and Development of Applied Chemistry*, pp. 117-19.

3. Lucas, *Ancient Egyptian Materials & Industries* (3d ed.) pp. 393-94.

4. [The occurrence of a deposit of our blue compound on the inner surface of a potsherd (i.e., originally inside a vessel) from a storeroom of the Apadana suggests that objects consisting of this substance were manufactured at Persepolis (see inscription of wall peg, p. 50, and cf. p. 130, n. 16). If so, we have to assume that the ingredients of the compound were imported and that the artisans who made the objects were foreign experts from either Egypt or the Two River Land. On the other hand, Matson suggests that lumps or powder of Egyptian blue could have been imported for use as pigments, to be mixed locally with a carrying agent—water, egg white, etc.—SCHMIDT.]

an object of glass. Some confusion exists in the literature, for this synthetic blue compound is at times termed a frit, and copper-blue glasses are at times described as artificial lapis lazuli ("Lasurstein").<sup>5</sup> A detailed study of objects made of blue glass and of Egyptian blue in terms of mineralogical composition could easily be made microscopically, as has been demonstrated in pigment studies cited by Partington and Lucas. Were this done at museums where large collections of fragments exist, a better knowledge of the origin and distribution of the synthetic blue compound and a differentiation of it from opaque blue glass could be obtained.

The Assyrians and their predecessors possessed many formulas for the production of copper glasses, as has been ably shown by Thompson.<sup>6</sup> His translations of the cuneiform tablets of glassmaking formulas and directions have been discussed by many authors and will not be reviewed here. Only one formula will be mentioned, for it is similar to the suggested method for the manufacture of the blue compound that is outlined above. W. Ganzenmuller<sup>7</sup> cites a publication (without giving a reference to the source) in which the directions for the preparation of "Egyptian blue" are translated.<sup>8</sup> In terms of modern proportions these are about as follows:

- 1 part of blue-green copper glass
- 1/3 part of very alkaline (low-melting) glass
- 1/3 part of sand
- 1/200 part (or less, at least a very small amount) of chalk

It is directed that these materials be ground together, placed in a vessel, and heated until glowing (probably about 600° C.).

In the formula just given, the very small amount of chalk (lime) mixed with water would help serve as a binder. When fired the alkaline glass and the lime would attack the sand, forming a low-melting glass (containing bubbles) that would fuse the particles of copper glass together. If this batch was held at a low red heat for some while, the copper glass could devitrify and a crystalline body could be formed. It would not be wise to press this interpretation of the method of manufacture of the blue compound too far, but it at least outlines the approximate manner in which the compound was formed. A study of an extensive series of objects together with laboratory tests of them and of synthetic melts would be necessary before a more definite statement could be made as to the method of production.

#### COMPOSITION

A quantitative spectrographic analysis of PT1 5 was made by Dr. Harold L. Lovell in the manner described in the technological discussion of the Persepolis colorless glass. In the present case Dr. Lovell made further measurements based upon the evidence of the first analysis of PT1 5 and compared the spectrographic lines of the Egyptian blue sample with those of synthetically compounded material of approximately the same composition. The results are certainly accurate to within 10 per cent for the

5. See Neumann, "Der babylonisch-assyrische künstliche Lasurstein," *Chemiker-Zeitung* LI 1013-15.

6. See his *On the Chemistry of the Ancient Assyrians*.

7. "Glass batches 3,000 years ago," *Glass* XVI (1939) 63.

8. [Obviously the formula for *uqnū merku* translated by Thompson, *op. cit.* pp. 51 and 60 ("The making of moulded blue glass").—SCHMIDT.]

minor ingredients present. For the elements that occur in larger amounts, in this case the CaO and the CuO, they may not be quite so accurate, but further study of them is being made.

The available information about the chemical composition of Egyptian blue is summarized in Table XIII. In the first column are the results of the spectrographic analysis of PT1 5. In the second column the theoretical composition of CaO.CuO.4SiO<sub>2</sub> is given. Next appear three analyses published by Lucas, followed by two given by Partington.

A study of the data in Table XIII shows that only analysis No. 3, that of a synthetically prepared compound, approximates the theoretical composition. The small amount of alkali present was included to serve as a flux, aiding in the melting of the ingredients. Analyses 4 and 5, of materials found in Egypt, are in the same general com-

TABLE XIII  
CHEMICAL COMPOSITION OF EGYPTIAN BLUE

	PT1 5	2*	3†	4‡	5§	6	7
SiO <sub>2</sub>	Major	64.0	63.4	57.2	70.0	70	70.5
Al <sub>2</sub> O <sub>3</sub>	0.76	—	—	0.8	0.3	—	—
Fe <sub>2</sub> O <sub>3</sub>	2.1	—	—	—	—	1	3.71
CaO	11.4	14.8	14.4	13.8	9.4	9	8.53
MgO	0.89	—	—	0.5	—	—	4.18
Na <sub>2</sub> O	0.0X	—	0.9	7.6	—	4	—
K <sub>2</sub> O	X.0	—	1.2	nil.	2.0	—	—
CuO	10.1	21.2	19.5	18.5	18.3	15	13.00
TiO <sub>2</sub>	0.51	—	—	—	—	—	—
PbO	0.009	—	—	—	—	—	—
Co <sub>2</sub> O <sub>3</sub>	0.008	—	—	—	—	—	—
NiO	0.006	—	—	—	—	—	—
Sb <sub>2</sub> O <sub>3</sub>	0.005	—	—	—	—	—	—
SnO <sub>2</sub>	0.004	—	—	—	—	—	—
Cr <sub>2</sub> O <sub>3</sub>	0.004	—	—	—	—	—	—
Ag <sub>2</sub> O	0.003	—	—	—	—	—	—
MnO	0.0X	—	—	—	—	—	—
BaO	0.0X	—	—	—	—	—	—
SrO	0.0X	—	—	—	—	—	—
Ga <sub>2</sub> O <sub>3</sub>	0.00X	—	—	—	—	—	—
Loss on Ign.	—	—	—	1.6	—	—	—
		100.0	99.4	100.0	100.0	99	99.92

\* Theoretical composition.

† Synthetic melt prepared by Laurie; from Lucas, *op. cit.* p. 550.

‡ Nineteenth dynasty; analysis by Lucas (*ibid.*)

§ Pigment from Egyptian monument; from Lucas (*ibid.*)

|| Reputed to be Egyptian; analysis by Hofmann; from Partington, *op. cit.* p. 119.

positional range with more alkali present. The Al<sub>2</sub>O<sub>3</sub> and Fe<sub>2</sub>O<sub>3</sub> are impurities probably due to the slight solution of the clay crucible wall at the level of the surface of the melting glass. Analyses 6 and 7 were made in the Berlin Museum in Hofmann's laboratory, according to Partington. The results as reported are not too satisfactory, but at least give an idea of the composition. In No. 6 the values were either approximated or the figures were rounded off. Were Al<sub>2</sub>O<sub>3</sub>, MgO, and K<sub>2</sub>O sought for? In No. 7 it is surprising that no alkali is reported. The smaller amounts of copper present suggest that these samples probably did not consist entirely of the crystalline compound, but that free quartz and a glassy matrix were probably present. A microscopic examination of all of these samples would have been desirable.

Lovell's spectrographic analysis of PT1 5 shows less copper and lime than would have been expected, because microscopically the body appears to be almost entirely crystalline. However, as already indicated, quantitative results for elements present in larger amounts are difficult to obtain, and further work may require a revision of these two figures. It is the analysis of the elements present in



smaller amounts that makes this work important and supplies data for a better understanding of the compounding of the substance.

Pure limestone was used in the Persepolis object (PT1 5) tested, for the MgO content is very low. (The interpretation of this point is discussed, as are others that will be mentioned only briefly here, in the section on the Persepolis colorless glass; pp. 127 ff.) In the light of the information at present available, this would indicate Cairo or the Delta region as a possible place of manufacture of the compound. The iron content is sufficiently high to suggest that it was an intentional ingredient; however, the use of iron tools that were rusty and scaling could supply this amount of iron. In the thin sections a few spots of iron oxide were seen. The small amount of alkali needed as a flux was introduced either as plant ash or as potassium nitrate, for the sodium content of the sample is extremely low. Two glasses from Elephantine that are reported in Table XII contain far more potassium than do most ancient glasses that have been analyzed. Therefore the alkali ratio is suggestive of a Deltaic place of manufacture.

Of the trace elements shown in our spectrographic analysis, the MnO and TiO<sub>2</sub> are attributable to the sand, and the BaO and the SrO to the limestone. All the others except Ga<sub>2</sub>O<sub>3</sub> probably were introduced with the copper. It may be significant that the Egyptian blue contains the same suite of trace elements as does the opaque red glass from Persepolis. This might indicate that the copper used in both came from the same source, and from the standpoint of manufacturing processes, this can suggest that the same copper-containing base glass was used in the formulation of both of these products. The place of origin of the copper itself may eventually be determined from a knowledge of the trace elements in it.

## CONCLUSION

The Persepolis objects of Egyptian blue which we have studied are crystalline compounds that were probably molded from powdered copper-bearing glass and reheated. The spectrographic analysis of the material indicates that it was made in the same region as the opaque red glass found at Persepolis, to judge by the trace elements associated with the copper present.<sup>9</sup>

9. [Matson's studies have proved that the three Persepolis specimens examined by him consist of an artificial compound, a calcium-copper-tetrasilicate, which is called "Egyptian blue" (see p. 133). This term suggests, correctly we believe, that the manufacture of the compound originated in Egypt, where it was used as a pigment as early as the 4th dynasty. Matson explains that Egyptian blue is probably crushed copper-bearing glass devitrified by reheating to a temperature below that required for the original melting. However, he emphasizes that the results based on a study of three specimens are not necessarily applicable to other objects which are made of artificial compounds of similar appearance. As to those specimens which consist of what we term bluish-green or greenish-blue composition, Matson points out that the material may not have been held at the correct temperature or in the required temperature range after firing. The result could have been copper-green glass (cf. p. 87) instead of a crystalline compound (information by letter). Matson adds that the presence of other ingredients will largely determine whether copper will color glass green or blue. Ingredients such as lead or magnesia tend to result in green shades, alkaline silicates in blue shades.

We have to conclude that in addition to "Egyptian blue" variously compounded substances may have been used in the manufacture of our sculptured objects, ornaments, vessels, and so forth, consisting of the material or materials which we designate by the general term "composition."

As to the provenance of the composition objects described or referred to in the present volume, the Egyptian origin of at least two specimens is determined by their hieroglyphic inscriptions (see p. 68); composition cylinders were excavated at Babylon (see p. 57); the Assyrians undoubtedly knew the method for the manufacture of "Egyptian blue" (see p. 134); finally, wall pegs bearing the names of Darius and Xerxes (see p. 50) suggest that composition objects were made at Persepolis (see also p. 133, n. 4).

It follows that our Persepolis objects consisting of synthetically compounded blue, greenish-blue, or bluish-green substance could have originated in various lands during or prior to the Achaemenid era unless inscriptions or distinctive forms (see e.g. p. 64) assign them to specific periods and locations.

An important study which has direct bearing on the problems discussed in this chapter appeared after the present volume was in press: W. E. S. Turner, "Glass fragments from Nimrud of the eighth to the sixth century B.C.," *Iraq* XVII (1955) 57-68.—SCHMIDT.]

NOTES ON SPECTROGRAPHIC ANALYSES<sup>1</sup> OF METAL OBJECTS

By Lawrence J. Howell

Qualitative spectrographic analyses were performed with a Jarrell-Ash 21-foot grating spectrograph. Excitation was by means of a 10-ampere D-C arc. National Carbon Company special graphite spectrographic electrodes were used. The lower electrode, with a drilled crater containing the sample, was of  $\frac{1}{4}$ -inch diameter. The counter electrode was of  $\frac{1}{8}$ -inch rod. Electrode separation was maintained at 4 mm. A single sample of each specimen weighing approximately 2 mg. was totally burned. The plates (Eastman SA-1) were developed for two minutes at 20° C. in D-19 developer, fixed for two minutes in acid fix, and washed for 15–20 minutes.

The estimates of amounts present were made with the aid of an eyepiece. By comparison with standard samples this technique has been found to give most concentrations accurately to within a factor of three, with an estimate rarely missing the quantitative estimate by as much as a factor of ten.

Approximate concentrations of the elements<sup>2</sup> are given within the following ranges in Table XIV:

M = major	>10%
s = strong	1–10%
m = minor	0.1–1%
w = weak	<0.1%

TABLE XIV  
ANALYSES OF METAL OBJECTS

FIELD NO.	OBJECT	CONCENTRATION OF ELEMENTS*																							
		Ag	Al	As	Au	B	Ba	Bi	Ca	Co	Cr	Cu	Fe	Hg	Mg	Mn	Na	Ni	Pb	Sb	Si	Sn	Ti	V	Zn
PT3 440†	Arrowhead	m	s	m	m	w		w	M	m	w	M	m	w	m	w		m	w	w	M	M	w		
PT4 1033‡	Pin shaft	M	w	w	w			m	w		M	w	w	w	w			w	w	w	w	m	w		
PT7 382§	Slag	w	M	w		w	w	w	M	w	w	M	m		m	w	M	w	m	w	M	M	w	w	w
PT3 434	Arrowhead		w					w	m		w	w	M	w	w		m			m	w	w			

\* [Howell states that in all cases 43 elements were sought: Ag, Al, As, Au, B, Ba, Be, Bi, Ca, Cb, Cd, Co, Cr, Cu, Fe, Ga, Ge, Hg, In, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Pd, Pt, Ru, Sb, Si, Sn, Sr, Ta, Te, Ti, Tl, V, W, Zn, and Zr. However, 19 of these elements were not detected in any specimens concerned and are therefore omitted from this table. These elements are Be, Cb, Cd, Ga, Ge, In, K, Li, Mo, P, Pd, Pt, Ru, Sr, Ta, Te, Tl, W, and Zr.—SCHMIDT.]

† [One of nine triflanged bronze arrowheads of common types (Nos. 7–8 on Table IX and Pl. 76) from Yard 20 (Plot HG 97) in the quarters of the garrison. The analyzed specimen is definitely bronze, as proved by the presence of more than 10% of tin (Sn).

Considering the relatively late era with which we are dealing and its advanced knowledge of metallurgy, we are using the term bronze rather than copper throughout the Persepolis volumes in designating metal objects with green or green and blue patina, although analyses might show that some objects consist of unalloyed copper.—SCHMIDT.]

‡ See Pl. 46:17.

§ From main hall (1; Plot HE 12) of Apadana.

|| [One of eight biflanged, lanceolate arrowheads of iron (No. 4 on Table IX and Pl. 76) from Courtyard 21 (Plot HG 77) in the quarters of the garrison.—SCHMIDT.]

1. Performed under the direction of Professor Norman H. Nachtrieb.
2. [In the table originally prepared by Howell major concentrations were indicated by "M." Strong, minor, and weak concentrations were expressed by

numerals. Following his suggestion we omit the numerals in order to avoid the impression of greater accuracy than is warranted by the spectrographic analyses.—SCHMIDT.]

CHARRED TEXTILES FROM THE TREASURY<sup>1</sup>

By Louisa Bellinger

PT6 721; from Courtyard 29, Plot IG 13.

Fabric made by twisting wefts around free warps (Fig. 29).<sup>2</sup> Warp and weft very fine wool, probably goat.

Warp spun \, plied /, and again \; 2 yarns to 1 cm.

Weft spun \, 3 singles plied /; 12 shots to 1 cm.

PT6 723; from Hall 41.

Cloth weave; warp and weft very fine wool, probably goat.

Warp slightly spun /, plied \.

Weft slightly spun /, plied \.

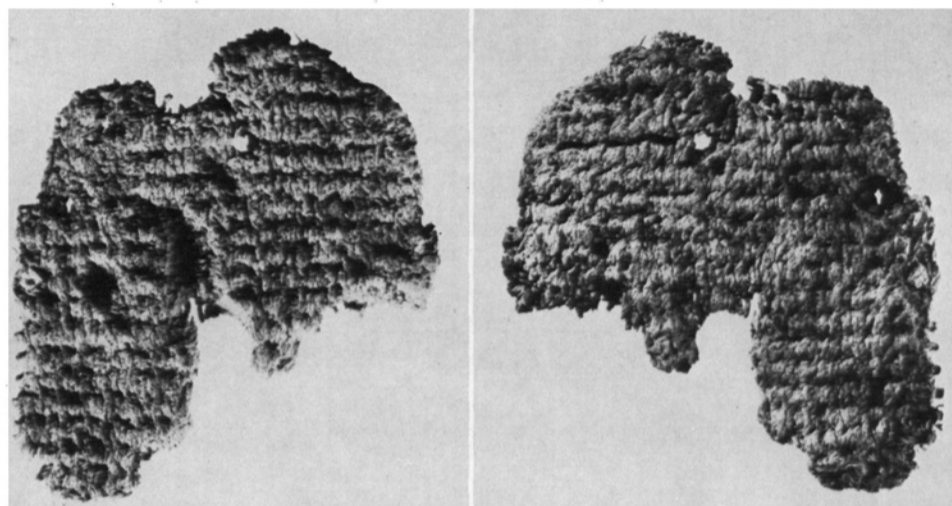


FIG. 29. TEXTILE FRAGMENT (PT6 721). SCALE, 1:2

1. [Photographs of the following charred fabrics from the Treasury were submitted to Miss Bellinger but apparently gave inconclusive information: PT4 326, Room 33, six fragments adhering in part to green substance; PT4 720, Room 33, fragment adhering to piece of iron; PT6 589, Courtyard 29, fragment; PT6 622, Room 78, two fragments.

For textile patterns marked on the gowns of the king in reliefs of Darius'

palace and Xerxes' Harem, see Vol. I, Pls. 142-43 and 198.—SCHMIDT ]

2. For diagram of twisted wefts see Yale University, *The Excavations at Dura-Europos . . . Final Report IV, Part II: The Textiles*, by R. Pfister and Louisa Bellinger (New Haven, 1945) Pls. XXXII-XXXIII G.



*INDEXES*



## INDEX OF FIELD NUMBERS

FIELD No.*	OBJECT†	MATERIAL	VOLUME I		VOLUME II		PRESENT LOCATION‡
			Page	Figure	Page	Illustration	
HC 1-4	coins	gold	79		110, 113	Pl. 84:28-31	
HC 5	coin	silver	79		110, 113	Pl. 84:27	
HC 6	coin	silver	79		110, 113	Pl. 84:36	
HC 7	coin	silver	79		110, 114	Pl. 84:38	
HC 8	coin	silver	79		110, 114	Pl. 84:37	
HC 9-12	coins	gold	79		110, 113	Pl. 84:32-35	
PF 11	cosmetic bottle	marble	56		108-9	Pl. 83:3	A 19235
PS 1	bowl sherds	baked clay			119		
PS 2	rod	iron			119		
PS 4	bowl sherd	baked clay			119-20		
PS 5	bowl	baked clay			119-20	Pl. 89:8	
PS 6	bracelet	iron			119		
PS 7	bowl sherds	baked clay			120		
PS 8	jar sherd	baked clay			119		
PS 9	pitcher	baked clay			119, 123	Pls. 87 G, 89:5	A 24809
PS 10	toy horse	baked clay			120	Pls. 87 H, 89:1	
PS 11	bowl sherds	baked clay			119-20	Pl. 89:10	
PS 12	cosmetic bottle(?) fragment	alabaster			119, 123	Pl. 89:12	
PS 13	jar	baked clay			119, 123	Pl. 89:6	
PS 14	bowl sherd	baked clay			119		
PS 15	bowl	baked clay			119-20	Pl. 89:7	
PS 16	sherd	baked clay			120	Pl. 89:9	
PS 17	bowl fragment	baked clay			120	Pl. 89:11	
PS 18	bracelet	bronze			119, 123	Pl. 89:2	
PS 19	sherd	baked clay			119		
PS 20	bowl sherd	baked clay			120		
PS 21	finger ring	iron			119, 123	Pl. 89:3	
PS 22	bracelet	iron			119-20, 123	Pl. 89:4	A 24810
PT1 5	wall peg?	composition			133-35		A 19368
PT2 651	fragment	composition			133-35		A 19491
PT2 1015	inscribed bricks	baked clay	71	42 C			A 24112
PT3 20	bead	gold	210		76	Pl. 43:52	A 22902
PT3 34	buckle	bronze	207		78	Pl. 45:18	
PT3 35	bead	sardonyx?	207		76	Pl. 44:4	
PT3 58	armor scale	bronze	211		100	Pl. 77:5	A 22937
PT3 59	canteen	baked clay	210		46, 49, 96	Pl. 72:12	
PT3 60	signet ring	gold	210		46-47, 49	Pl. 18	A 22938
PT3 68	stamp seal	baked clay			46-47	Pl. 17	A 22943
PT3 69	eye stone	onyx			77	Pl. 44:35	A 22944
PT3 72	bridle bit	bronze			100	Pl. 78:4	A 22945
PT3 79	saucer	gypsum?	207		89-90	Pls. 60:3, 62:10	A 22948
PT3 80	bead	agate	207		76	Pl. 44:12	A 22949
PT3 84	knob	ivory or bone	209		73	Pl. 42:21	A 22951
PT3 85	polisher	limestone?	210		102-3	Pl. 80:11	
PT3 95	scabbard tip	bone	209		99	Pl. 75:10	A 22955
PT3 96	projectile point	iron	209				A 22956
PT3 105	pendant	frit	211		76	Pl. 44:16	
PT3 111	cylinder seal	stone			42, 44	Pl. 15	A 22961
PT3 114	clamp	bronze	211		102-3	Pl. 81:33	
PT3 117	spike	iron	209		102-3	Pl. 81:26	A 22962
PT3 135	sword	iron	209		97	Pl. 75:1	

\* The symbols preceding the numbers have the following meanings:  
 HC = Herzfeld Coins. Found in 1933 with the foundation deposits of the Apadana  
 PF = Persepolis Fratadara. Found in 1932 in the Fratadara temple  
 PS = Persepolis Spring Cemetery. Excavated in 1939  
 PT1 = Persepolis Terrace excavations in 1931  
 PT2 = 1932-34  
 PT3 = 1935  
 PT4 = 1936  
 PT5 = 1937  
 PT6 = 1938  
 PT7 = 1939

† For clay tablets the serial numbers used in *OIP LXV* are given in parentheses.

‡ The numbers given in this column are the accession numbers of the objects which are in the Oriental Institute Museum. Specimens marked "Or. Inst." were expendable fragments of no museological value which were not accessioned because they were collected and used for purposes of analysis. All the other objects, except those lost at sea (see p. vii), are now in the custody of the Iranian Antiquity Service.

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PT3 141	foundation slab	stone	209	87 D-E	51-53	Pl. 22 A	A 24120
PT3 142	foundation slab	stone	209	87 D-E	51-53	Pl. 21 B	
PT3 143	foundation slab	stone	209	87 D-E	51-53	Pl. 21 A	
PT3 144	plate	stone	210		89-90	Pl. 62:7	
PT3 145	canteen	baked clay	210		96	Pls. 71:9, 72:13	A 22968
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PT3 147	bottle	baked clay	210		96	Pls. 71:12, 72:16	
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PT3 161	hilt	iron	206		97	Pl. 75:2	A 22974
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PT3 209	razor?	iron	210		102-3	Pl. 81:15	A 22984
PT3 216	canteen	baked clay			96	Pl. 71:8	A 22986
PT3 218	stamp seal	stone			47-48	Pl. 18	A 22987
PT3 226	pendant	bronze	210		76	Pl. 44:21	
PT3 231	bowl	baked clay	207		96	Pl. 72:1	A 22992
PT3 232	jar	baked clay	207		96	Pl. 72:7	A 22993
PT3 237	spindle whorl	baked clay	192		102-3	Pl. 81:3	
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PT3 246	inlay beard	composition	209		72-73	Pl. 41:14	
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PT3 250	pendant	stone	209		76	Pl. 43:40	
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PT3 280	bead	gold	206		76	Pl. 43:7	
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PT3 284	punch	bronze	207		102-3	Pl. 81:20	A 23008
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PT3 295	jar or pitcher	baked clay			96	Pl. 71:5	A 23012
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PT3 307	bead	composition			76	Pl. 43:48	A 23017
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PT3 329	clamp	iron	207		102-3	Pl. 81:35	A 23023
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PT3 337	foundation slab	stone	208	87 B-C	51-53	Pl. 22 B	
PT3 343	spade	iron	211		102	Pl. 80:3	
PT3 347:3	bowl sherd	baked clay			96	Pl. 74:7	
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PT3 348:2	bowl sherd	baked clay			96	Pl. 74:19	
PT3 349:1	bowl sherd	baked clay			96	Pl. 74:1	
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PT3 351:1	sherd	baked clay			96	Pl. 74:32	
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PT3 370	arrowhead	iron	192		99	Pl. 76:15	A 23034
PT3 372	label	clay			32		A 23035
PT3 373	label	clay			26		A 23036
PT3 375	fluted band	gold	173		73	Pl. 42:3	
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PT3 382	bead	onyx	173		76	Pl. 43:22	
PT3 383	label	clay			6, 32	Pl. 11	
PT3 384	label	clay	173		6, 26	Pl. 7	A 23038
PT3 385	label	clay			26		A 23039
PT3 386	label	clay			6, 40	Pl. 14	
PT3 390	cup	bronze	207		94	Pl. 68:2	A 23041
PT3 391	pin	bronze			79	Pl. 46:7	A 23042
PT3 394	bead	gold			76	Pl. 43:13	A 23044
PT3 407	label	clay			6, 20-21	Pl. 2	A 23049
PT3 408	label	clay			26		A 23050
PT3 410	bracelet fragment	bronze	173		79	Pl. 46:2	A 23051
PT3 411	coin	silver	189		110-11	Pl. 84:3	A 23052
PT3 431a	arrowhead	iron			99-100	Pl. 76:4	
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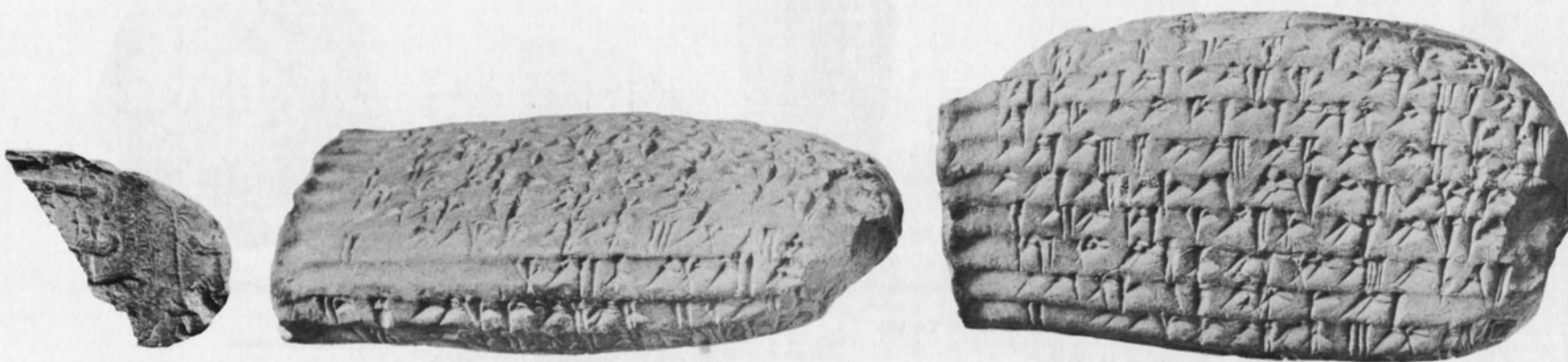


*PLATES*





PT4 403



PT6 75



PT5 182

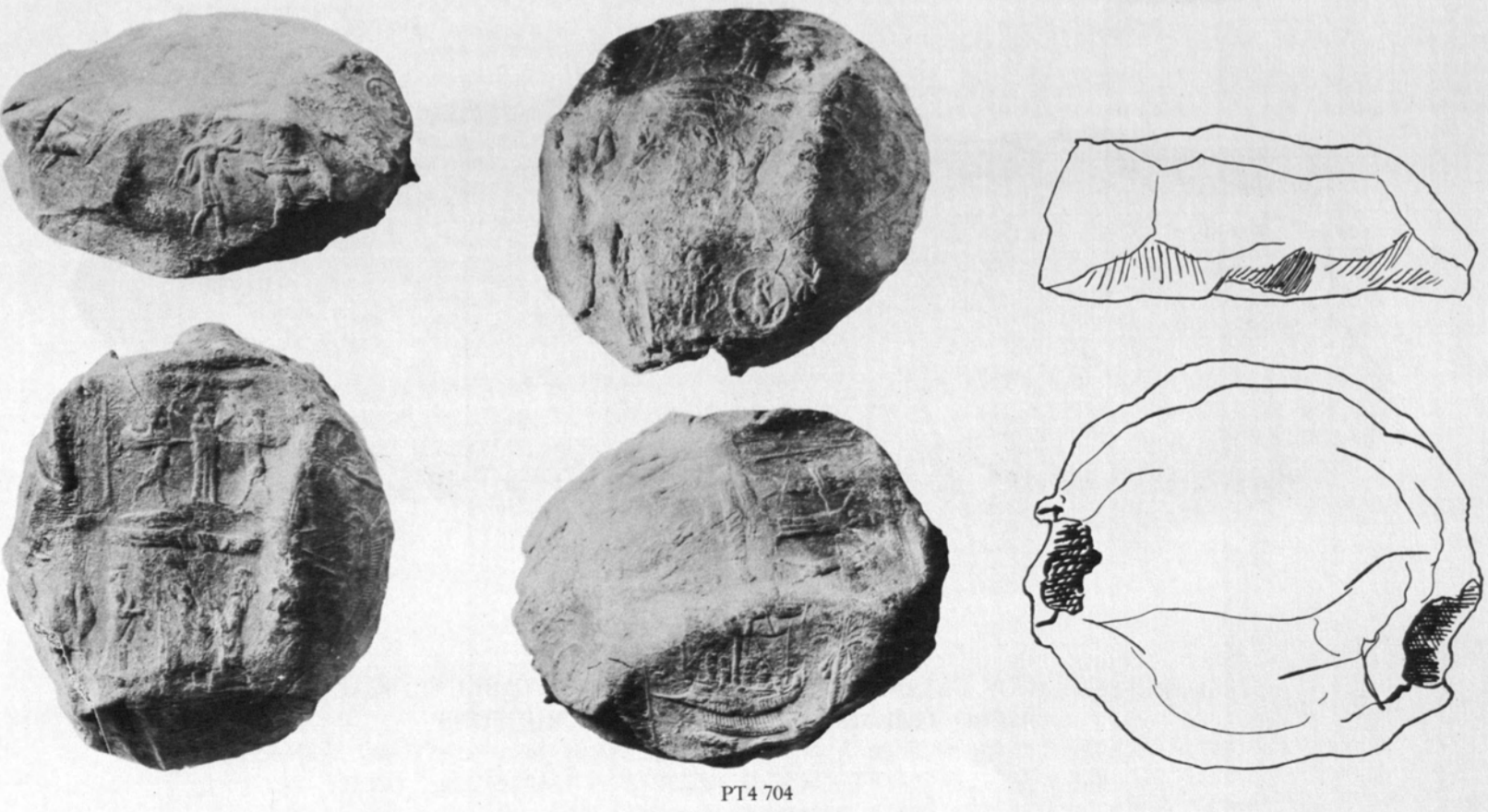
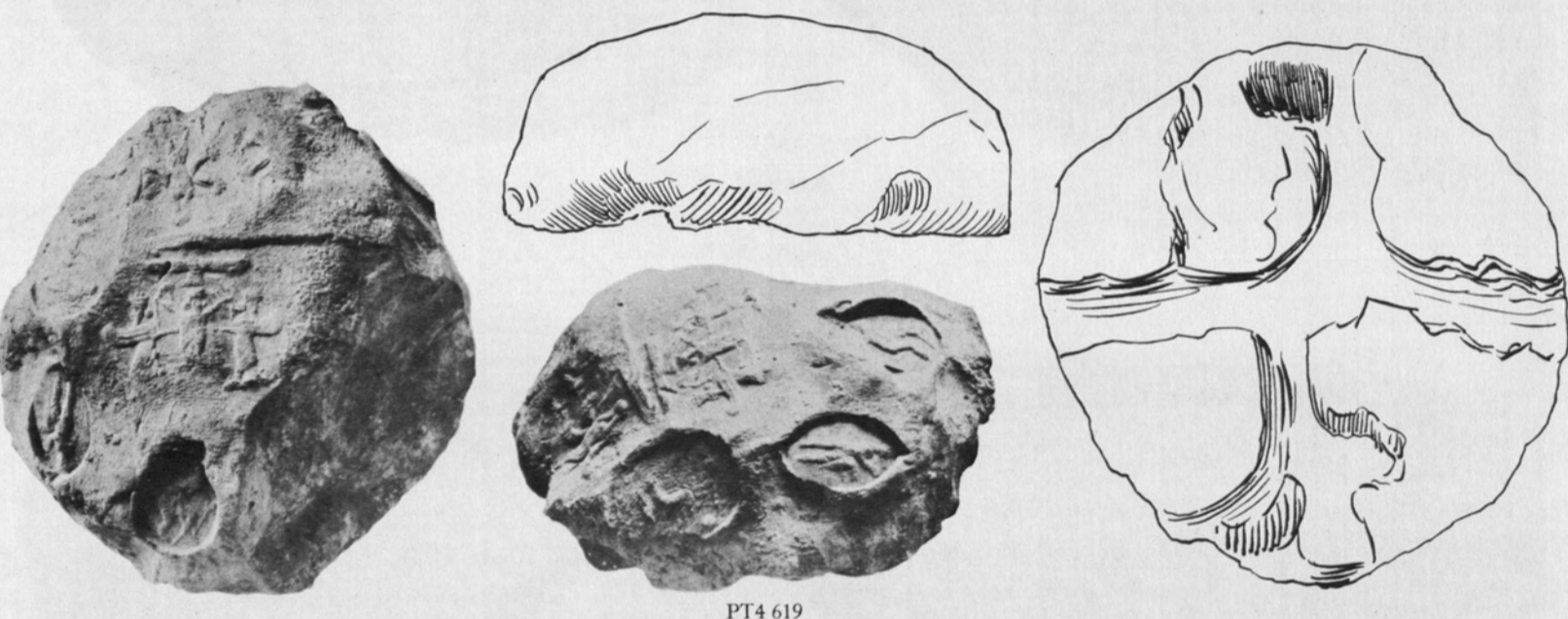
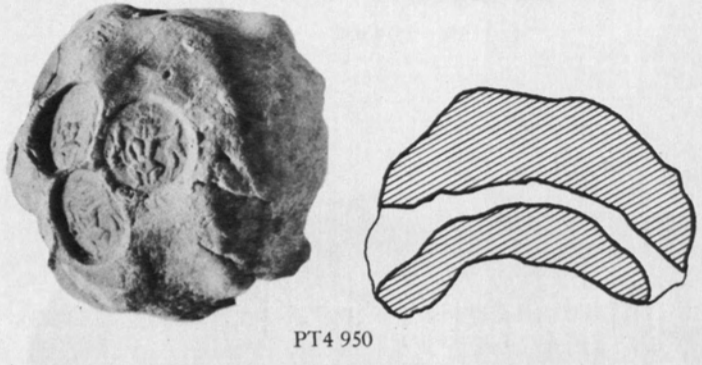
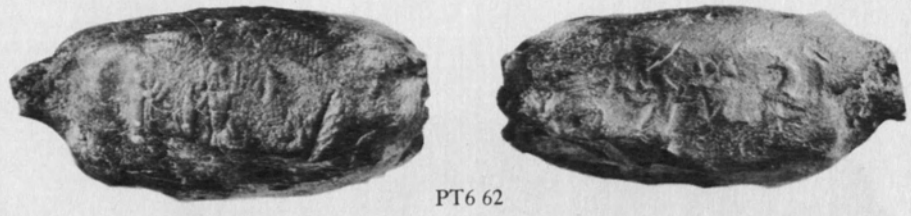


PT4 808

SAMPLE SPECIMENS OF CLAY TABLETS. ACTUAL SIZE

Tablet No. in OIP LXV	Field No.	Find-Spot in Treasury	Surface Color	Inscription	Seal Impression
41	PT4 403	Room 33, above column base B4	Reddish brown	Elamite	No. 2
45	PT6 75	Hall 41, floor, Plot HG 70, center of W. line	Brown and gray	Elamite	No. 5
42	PT5 182	Hall 38, at column base C5, .15 above floor	Brown and black	Elamite	No. 2
85	PT4 808	Room 33, between column bases A4 and A5, floor	Brown	Babylonian	None

Field No.	Find-Spot in Treasury	Surface Color	Seal Impressions
PT3 407	Room 11, floor	Brown and black	No. 5
PT4 950	Room 33, NE. corner, floor	Gray and black	No. 64 (5 times)
PT6 62	Room 47, at N. wall, 1.10 above floor, Plot HF 19, near W. line	Black	Nos. 9 and 31 (both 2 times)
PT6 3	Room 47, at center of E. wall, 1.90 above floor	Black	Nos. 5 (3 times) and 58
PT4 619	Room 33, N. of column base B5, ca. .80 above floor	Brown	Nos. 5, 19, 44, 54, 55
PT4 704	Room 33, between column bases A5 and B5, ca. .50 above floor	Grayish black	Nos. 5, 17, 23, 32, 38, 74



SAMPLE SPECIMENS OF CLAY LABELS. ACTUAL SIZE



PT4 673



PT4 652

Seal No. 1



PT4 658

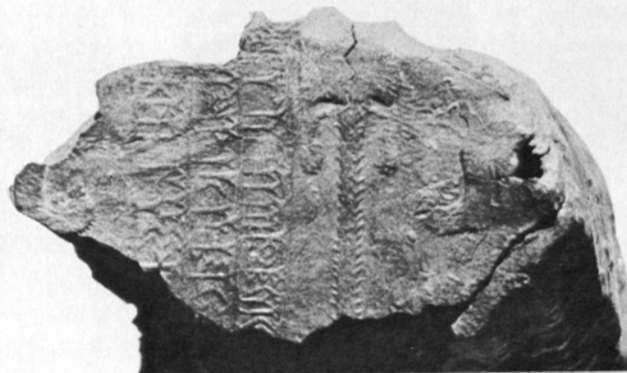


PT4 726

Seal No. 2



PT4 860



PT4 331 (end view)



PT4 331 (side view)

Seal No. 3

IMPRESSIONS OF CYLINDER SEALS (NOS. 1-3) ON TABLETS. SCALE, 2:1  
HERO TRIUMPHANT, DARIUS INSCRIPTIONS



PT4 332



PT4 601

Seal No. 4



PT4 650



PT6 215

Seal No. 5



PT4 749



PT4 862

Seal No. 6



PT6 12

Seal No. 7

IMPRESSIONS OF CYLINDER SEALS (NOS. 4-7) ON TABLETS AND LABELS. SCALE, 2:1  
HERO TRIUMPHANT, XERXES INSCRIPTIONS (EXCEPT NO. 4)  
(PT4 862 IS A PLASTER CAST)

PLATE 5



PT4 471



PT4 549a (three views)  
Seal No. 8



PT6 34



PT6 65

Seal No. 9



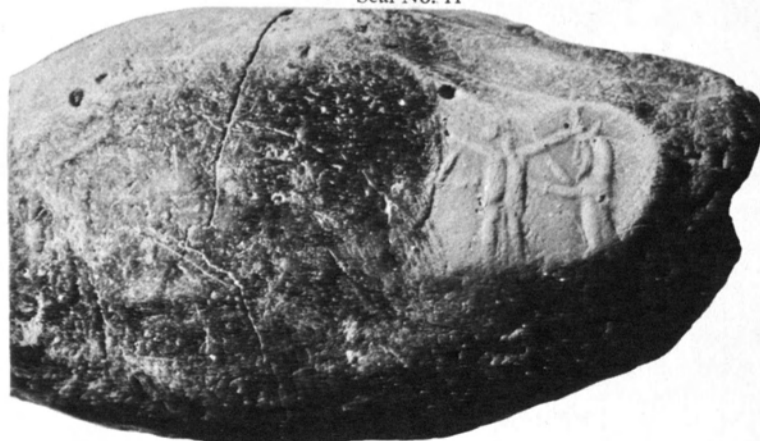
PT4 769  
Seal No. 10



PT4 830  
Seal No. 11



PT4 979  
Seal No. 12



PT6 300  
Seal No. 13

IMPRESSIONS OF CYLINDER SEALS (NOS. 8-13) ON TABLET AND LABELS. SCALE, 2:1  
HERO TRIUMPHANT, XERXES INSCRIPTION (NO. 8)





PT4 506



PT4 757

Seal No. 14



PT4 682 (reverse)



PT4 682 (end view)

Seal No. 15



PT4 444



PT4 759

Seal No. 16



PT4 704  
Seal No. 17



PT4 976



PT4 805

Seal No. 18



PT4 894



PT4 619

Seal No. 19

IMPRESSIONS OF CYLINDER SEALS (NOS. 14-19) ON TABLETS AND LABELS. SCALE, 2:1  
WORSHIP OF THE AHURAMAZDA SYMBOL  
(PT4 682 [REVERSE] AND PT4 759 ARE PLASTER CASTS)

PLATE 7



PT3 384



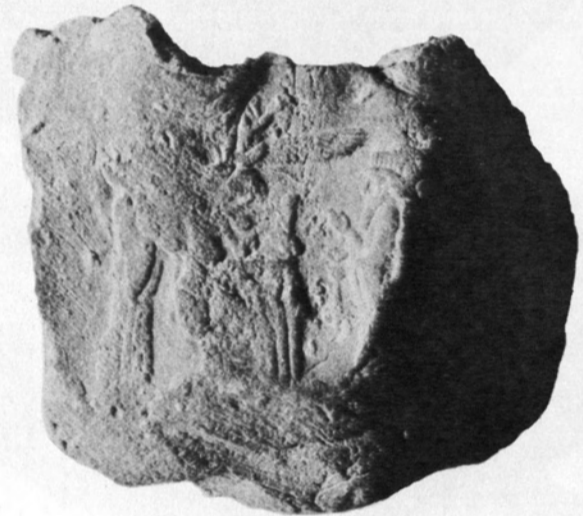
PT3 363

Seal No. 20



PT4 198

Seal No. 21



PT4 706

Seal No. 22



PT4 704



PT4 847

Seal No. 23

IMPRESSIONS OF CYLINDER SEALS (NOS. 20-23) ON LABELS. SCALE, 2:1  
RITUAL AND WORSHIP AT THE ALTAR  
(PT3 363 IS A PLASTER CAST)



PT4 844



PT4 336a

Seal No. 24



PT4 421

Seal No. 25



PT4 443



PT4 702



PT4 758

Seal No. 26



PT6 179

Seal No. 27

IMPRESSIONS OF CYLINDER SEALS (NOS. 24-27) ON TABLETS AND LABEL. SCALE, 2:1  
MISCELLANEOUS SCENES OF RELIGIOUS CHARACTER  
(PT4 336a, PT4 702, PT4 758 ARE PLASTER CASTS)

PLATE 9



PT4 948



PT4 865

Seal No. 28



PT4 330



PT4 830

Seal No. 29



PT4 655

Seal No. 30



PT6 62

Seal No. 31



PT4 704



PT4 847

Seal No. 32

IMPRESSIONS OF CYLINDER SEALS (NOS. 28-32) ON TABLET AND LABELS. SCALE, 2:1  
MARTIAL SCENES



PT4 675



PT4 385



PT4 262



PT4 784

Seal No. 33



PT6 179



PT6 40

Seal No. 34



PT4 605

Seal No. 35



PT4 841

Seal No. 36

IMPRESSIONS OF CYLINDER SEALS (NOS. 33-36) ON TABLETS AND LABELS. SCALE, 2:1  
HUNTING SCENES

(PT4 385, PT4 262, PT4 784, PT4 605, PT4 841 ARE PLASTER CASTS)

PLATE 11



PT3 383  
Seal No. 37



PT4 704  
Seal No. 38



PT4 857



PT4 870

Seal No. 39



PT4 979  
Seal No. 40



PT4 1022  
Seals Nos. 40-41



PT4 979  
Seal No. 41



PT4 610  
Seal No. 42



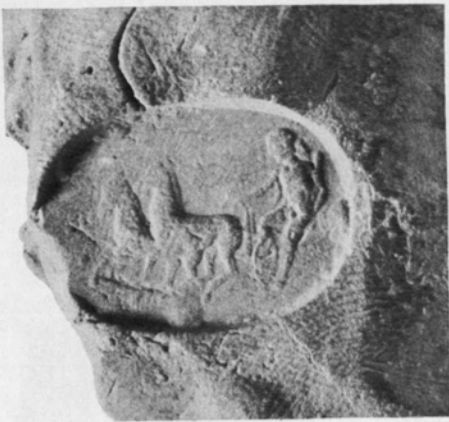
PT4 831

Seal No. 43



PT4 581

IMPRESSIONS OF CYLINDER SEALS (NOS. 37-43) ON TABLET AND LABELS. SCALE, 2:1  
COMBAT SCENES, MONSTERS AND ANIMALS  
(PT3 383 IS A PLASTER CAST)



PT4 866  
Seal No. 44



PT6 134  
Seal No. 45



PT4 509  
Seal No. 46



PT6 116



PT6 316



PT6 441  
Seal No. 49



PT6 43  
Seal No. 47



PT4 871  
Seal No. 48



PT4 1017  
Seal No. 50



PT5 248  
Seal No. 51



PT6 154

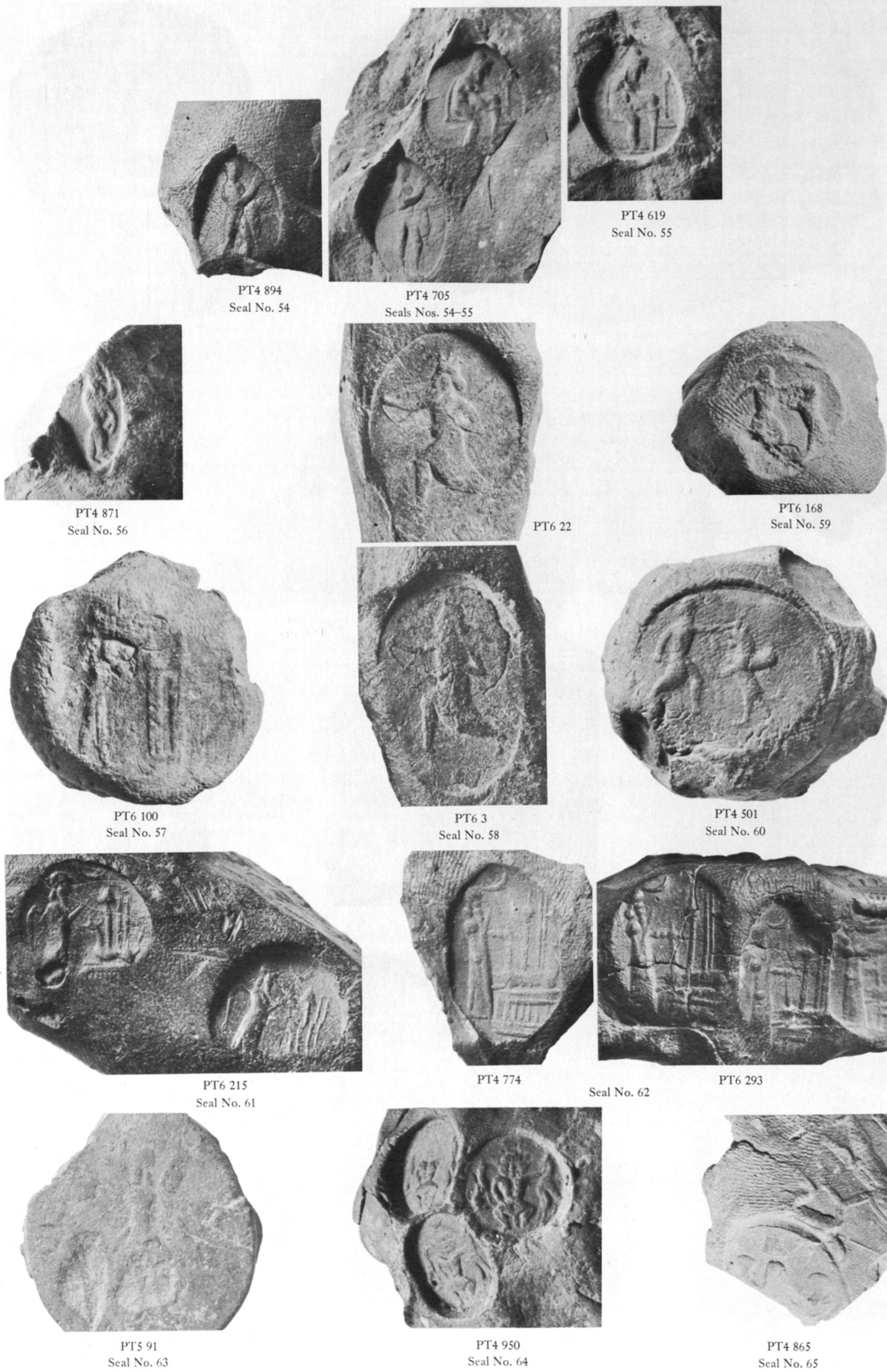


PT6 8



PT4 831  
Seal No. 53

IMPRESSIONS OF STAMP SEALS AND SIGNET RING (NOS. 44-53) ON LABELS. SCALE, 2:1  
PERSONS, ANTHROPOMORPHIC DEITIES



IMPRESSIONS OF STAMP SEALS AND SIGNET RINGS (NOS. 54-65) ON LABELS. SCALE, 2:1  
PERSONS, ANTHROPOMORPHIC GOD AND GENII





PT4 948



PT4 871  
Seal No. 66



PT6 43  
Seal No. 67



PT6 101  
Seal No. 68



PT4 255  
Seal No. 69



PT4 944  
Seal No. 70



PT4 1018  
Seal No. 71



PT4 840  
Seal No. 72



PT3 386  
Seal No. 73



PT6 261  
Seal No. 75



PT6 130  
Seal No. 76



PT4 832  
Seal No. 74



PT6 64  
Seal No. 77

IMPRESSIONS OF STAMP SEALS AND SIGNET RINGS (NOS. 66-77) ON LABELS. SCALE, 2:1  
ANIMALS, THERIOMORPHIC MONSTERS  
(PT3 386 IS A PLASTER CAST)

PLATE 15



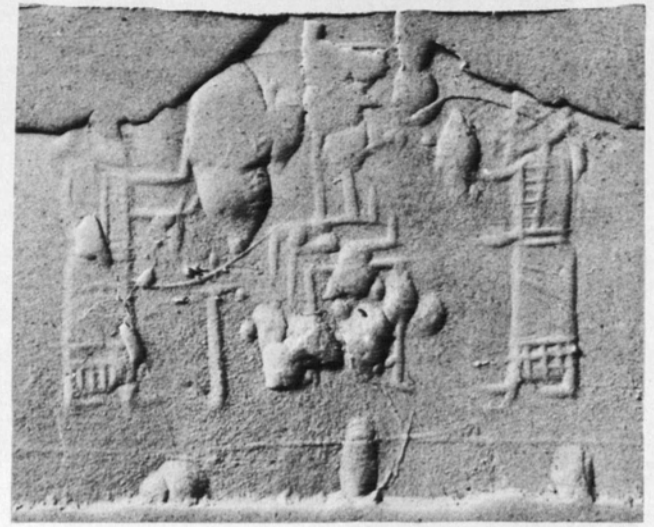
PT6 699



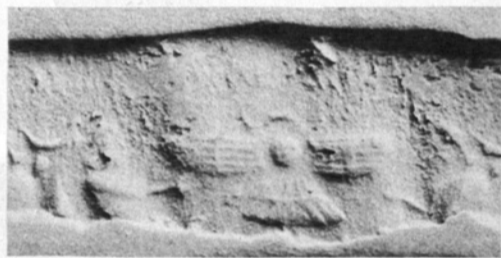
PT5 36



PT4 873



PT4 939



PT6 673



PT5 266



PT5 743



PT5 351



PT5 413

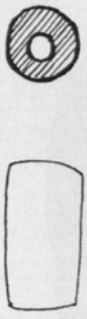


PT7 33



PT3 111

CYLINDER SEALS. ACTUAL SIZE. CASTS OF THEIR IMPRESSIONS. SCALE, 1.5:1



PT4 527



PT4 191



PT6 51



PT4 908



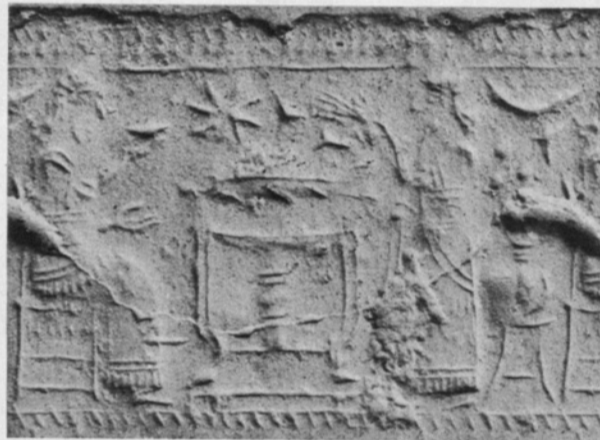
PT5 791



PT4 484



PT5 415



PT6 1



PT5 238



PT6 268



PT4 1096



PT7 204

CYLINDER SEALS. ACTUAL SIZE. CASTS OF THEIR IMPRESSIONS. SCALE, 1.5:1

PLATE 17



PT6 231



PT5 1

PT3 68



PT5 283



PT7 67



a



PT4 519



b



PT4 554a



PT5 501



PT5 212



PT6 453

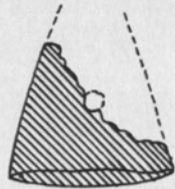
STAMP SEALS AND SIGNET RINGS. ACTUAL SIZE. CASTS OF THEIR IMPRESSIONS. SCALE, 2:1



PT4 263



PT4 236



PT3 218



PT3 268



PT4 167



PT5 808



PT3 60



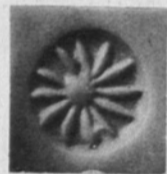
PT5 734



PT5 495



PT4 1087



PT7 368



a



b



PT6 439



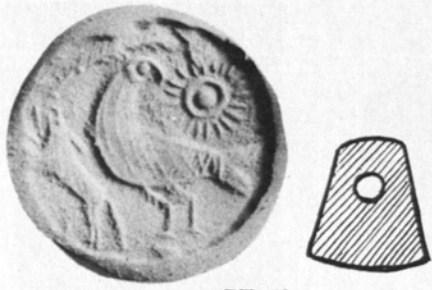
d



e

STAMP SEALS AND SIGNET RINGS. ACTUAL SIZE (EXCEPT *b* AND *e* OF PT6 439: SCALE, 2:1)  
CASTS OF THEIR IMPRESSIONS. SCALE, 2:1

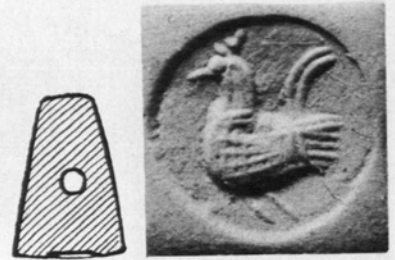
PLATE 19



PT4 321



PT4 269



PT4 414



PT6 364



PT6 338



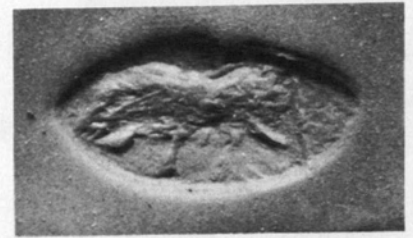
PT5 86



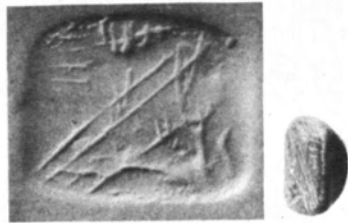
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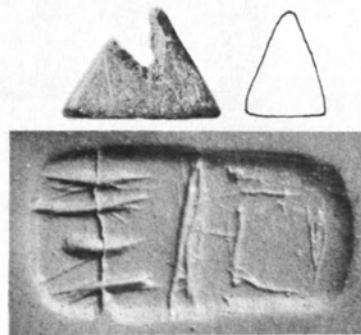
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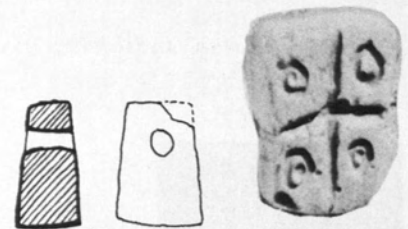
PT5 86



PT7 40

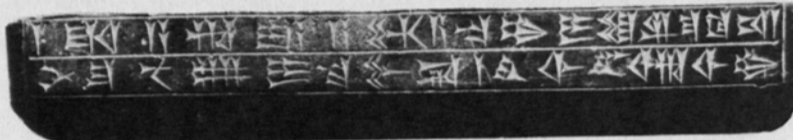


PT5 113



PT4 1032

STAMP SEALS AND SIGNET RINGS. ACTUAL SIZE. CASTS OF THEIR IMPRESSIONS. SCALE, 2:1

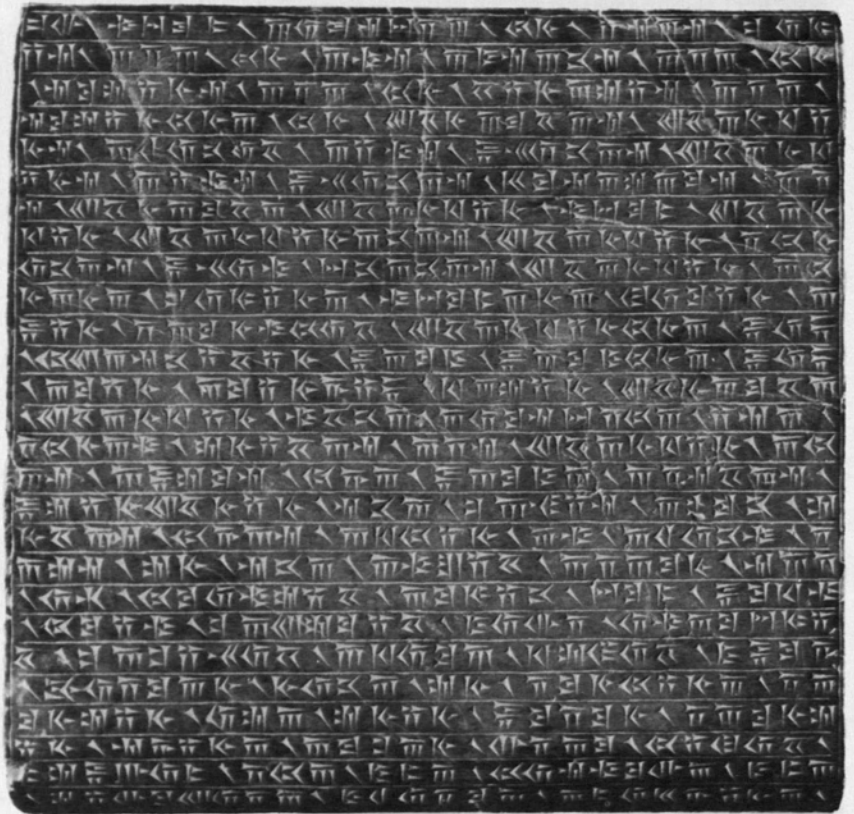


A

B

FOUNDATION DOCUMENTS OF XERXES. THE HAREM TEXT. SCALE, ABOUT 1:5

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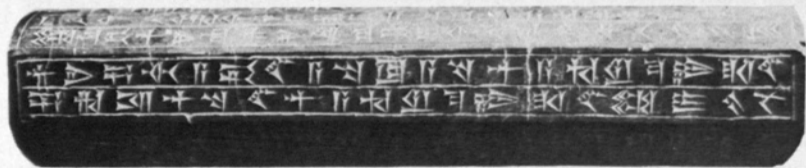
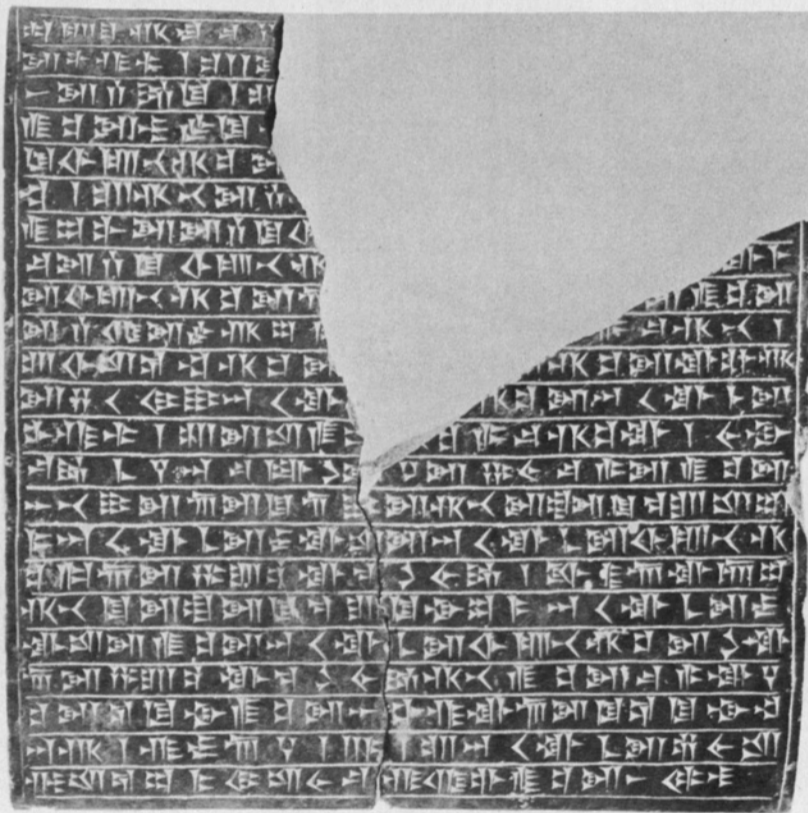
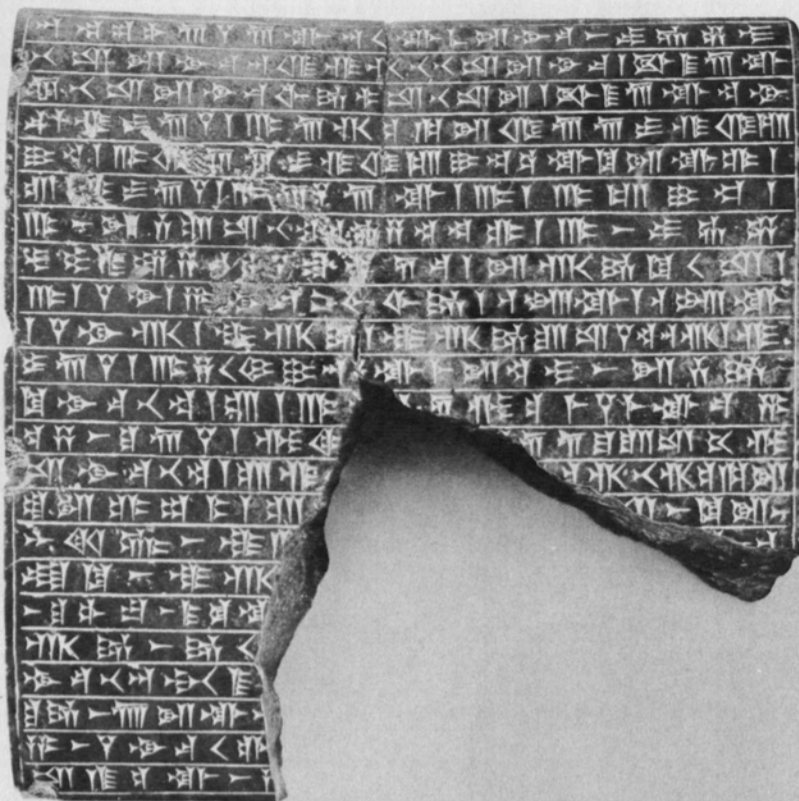


A

B

FOUNDATION DOCUMENTS OF XERXES. OLD PERSIAN VERSION OF THE "DAIVA" TEXT. SCALE, ABOUT 1:5  
A. COMPLETE (PT3 143). B. UNFINISHED (PT3 142)





A

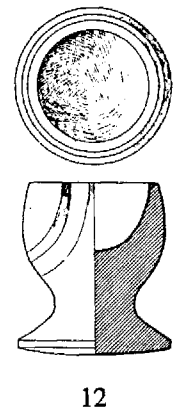
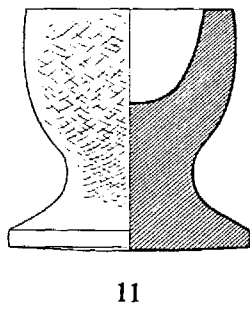
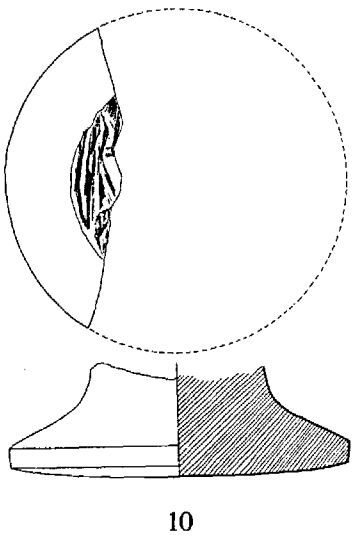
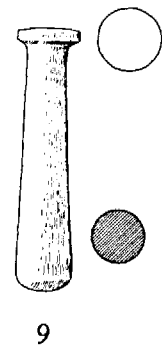
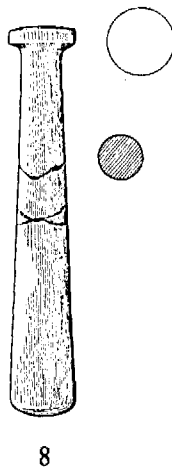
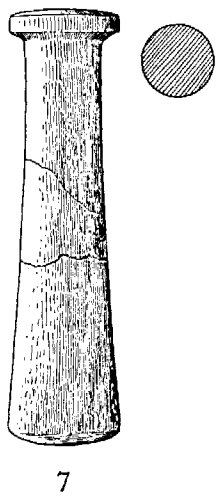
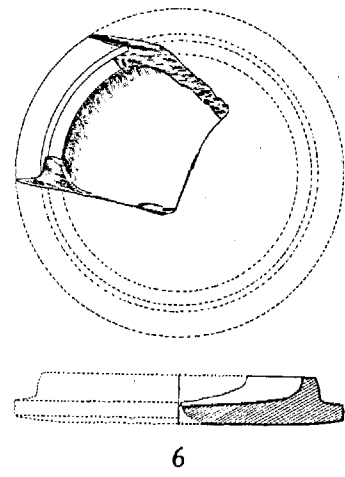
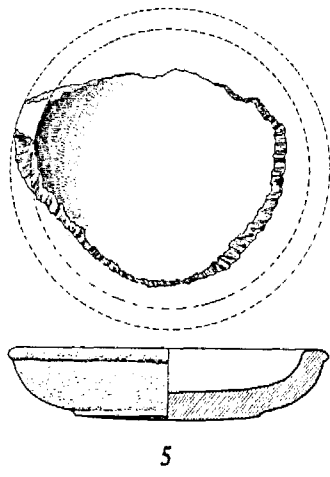
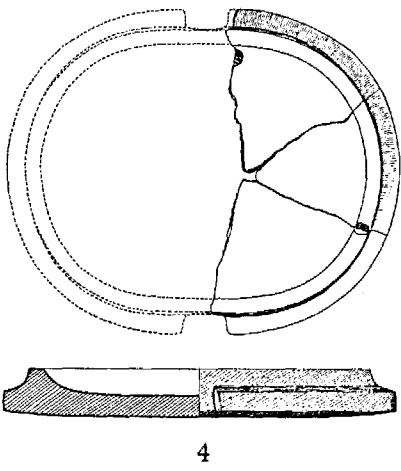
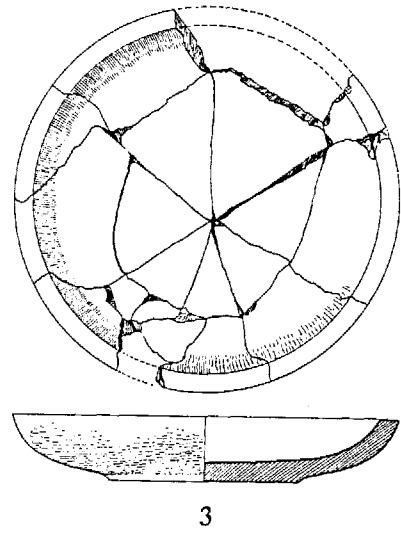
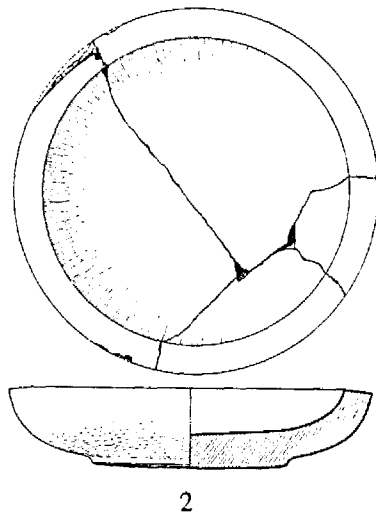
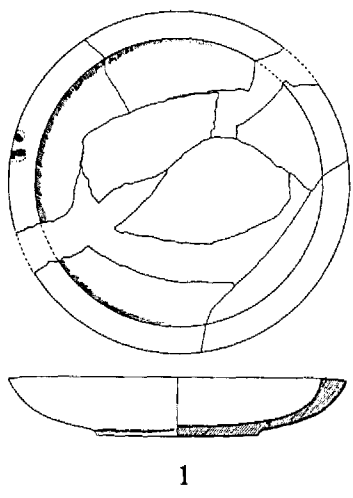
B

FOUNDATION DOCUMENTS OF XERXES. THE "DAIVA" TEXT. SCALE, ABOUT 1:5  
 A. BABYLONIAN (PT3 141). B. ELAMITE (PT3 337)



## RITUAL OBJECTS OF GREEN CHERT, FROM THE TREASURY

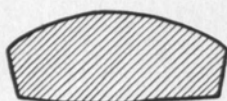
Pl. 23	Pl. 24	Field No.	Find-Spot	Object	Surface	Remarks	Scale
	1	PT5 449-50	Hall 38, Plot HF 39, center W.	Plate	Green with gray bands, base polished, rest smooth	Aramaic inscription on bottom	1:4
5		PT5 73 and 724	Hall 38, Plot HF 39, S.	Plate fragments	Green with dark veins, polished	Aramaic inscription on bottom	1:2
6	2	PT5 540	Hall 38, Plot HF 49	Plate	Green with gray veins, low polish	Inscription absent or not preserved	Pl. 23:6, ca. 1:3 Pl. 24:2, 1:4 ca. 1:3
7		PT5 536	Hall 38, Plots HF 29 and 39	Plate	Green with gray veins, smooth	Inscription absent or not preserved	
	3	PT5 677	Hall 38, Plot HF 48, center	Plate	Green shades, polished	Aramaic inscription on bottom	1:4
	4	PT5 736	Hall 38, Plot HF 29, NE.	Tray fragments	Green with gray veins, smooth	Oblong with intermittent ledge; Aramaic inscription on bottom	1:4
	5	PT5 277	Corridor 31, Plot HG 81, N.	Plate fragment	Green with gray veins, scorched, polished	Inscription absent or not preserved	1:4
	6	PT4 1085	Hall 38, Plot HG 20	Tray fragment	Grayish green, smooth	Inscription absent or not preserved	1:4
	7	PT5 671	Hall 38, Plot HF 38, SE.	Pestle	Green shades, top of discoid head polished	Aramaic inscription on top of head	1:4
	8	PT5 455	Hall 38, Plot HF 49, NW.	Pestle	Green shades, polished top of discoid head scorched purplish gray	Aramaic inscription on top of head	1:4
2	9	PT5 8	Room 37, in N. doorway, Plot HG 33	Pestle	Green with gray bands, polished	Aramaic inscription on top of head	Pl. 23:2, 1:2 Pl. 24:9, 1:4
3		PT5 492	Hall 38, W. of doorway to Room 48, Plot HG 11	Pestle head	Bands of green shades, polished	Clear Aramaic inscription on top	1:2
	10	PT5 290	Hall 38, Plot HG 10, SE.	Mortar base	Dark green veins, bottom polished	Aramaic inscription on bottom	1:4
	11	PT5 488	Hall 38, W. of doorway to Room 48, Plot HG 11	Mortar	Green with gray veins, bottom slightly polished	Drawing reconstructed; Aramaic inscription on bottom	1:4
1	12	PT5 7	With PT5 8 (Pls. 23: 2 and 24:9)	Mortar	Concentric rings of light and dark green, polished	Aramaic inscription on bottom (Pl. 23:1b)	Pl. 23:1, 1:2
4		PT4 887	Room 33, floor, Plot HG 42	Mortar	Banded green and gray, polished	Faint Aramaic inscription on bottom	Pl. 24:12, 1:4 ca. 1:2



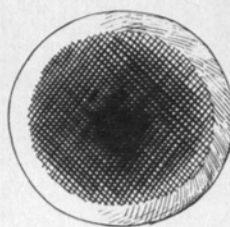
RITUAL OBJECTS OF GREEN CHERT, FROM THE TREASURY



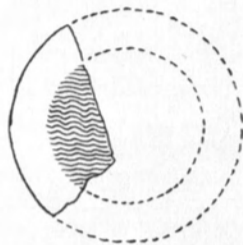
1



2



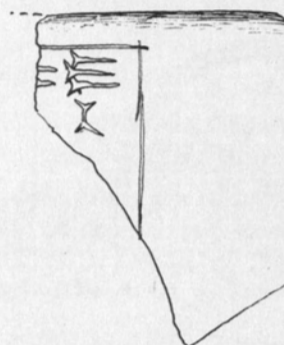
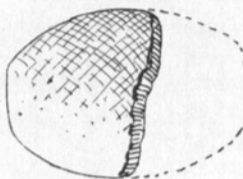
3



4



5



6



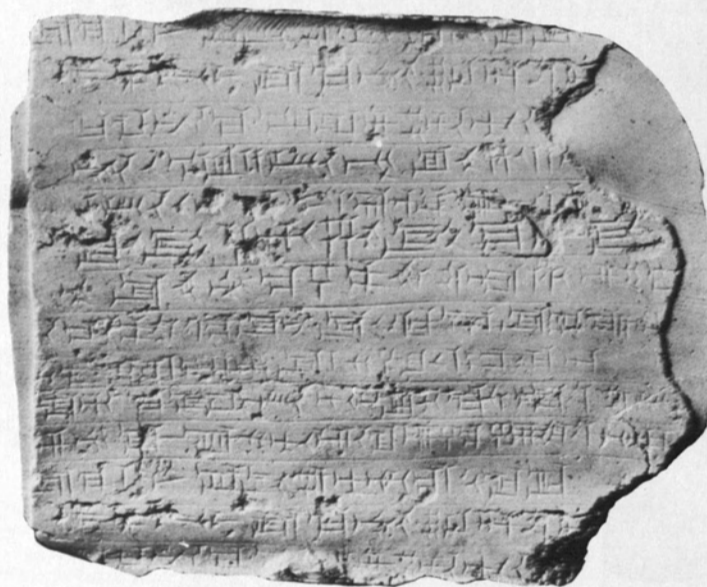
7a



7b



8



10a



9



10b

INSCRIBED VOTIVE OBJECTS. BEAD (NO. 1), EYE STONES (NOS. 2-5), TABLET (NO. 6), AND CYLINDERS (NOS. 7-10). ACTUAL SIZE. (NOS. 1, 7a, 8, AND 10a ARE CASTS)



1a



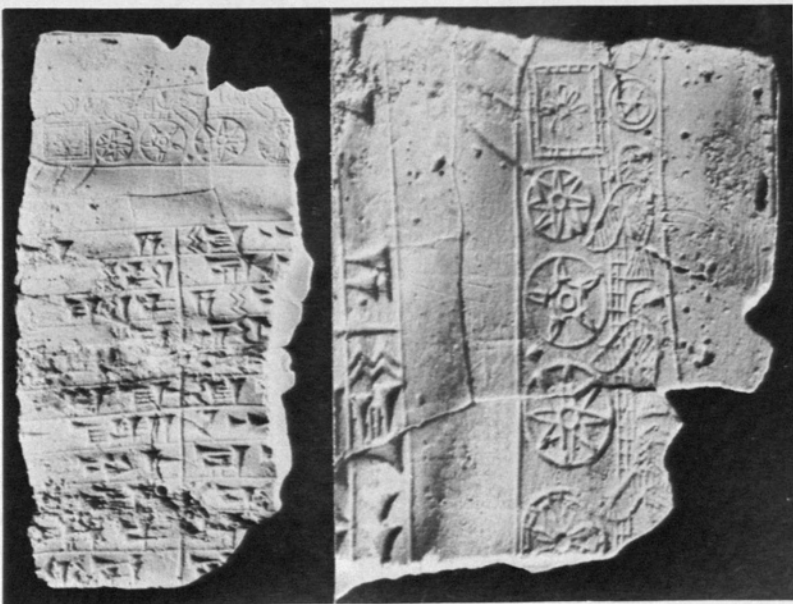
1b



1c



2



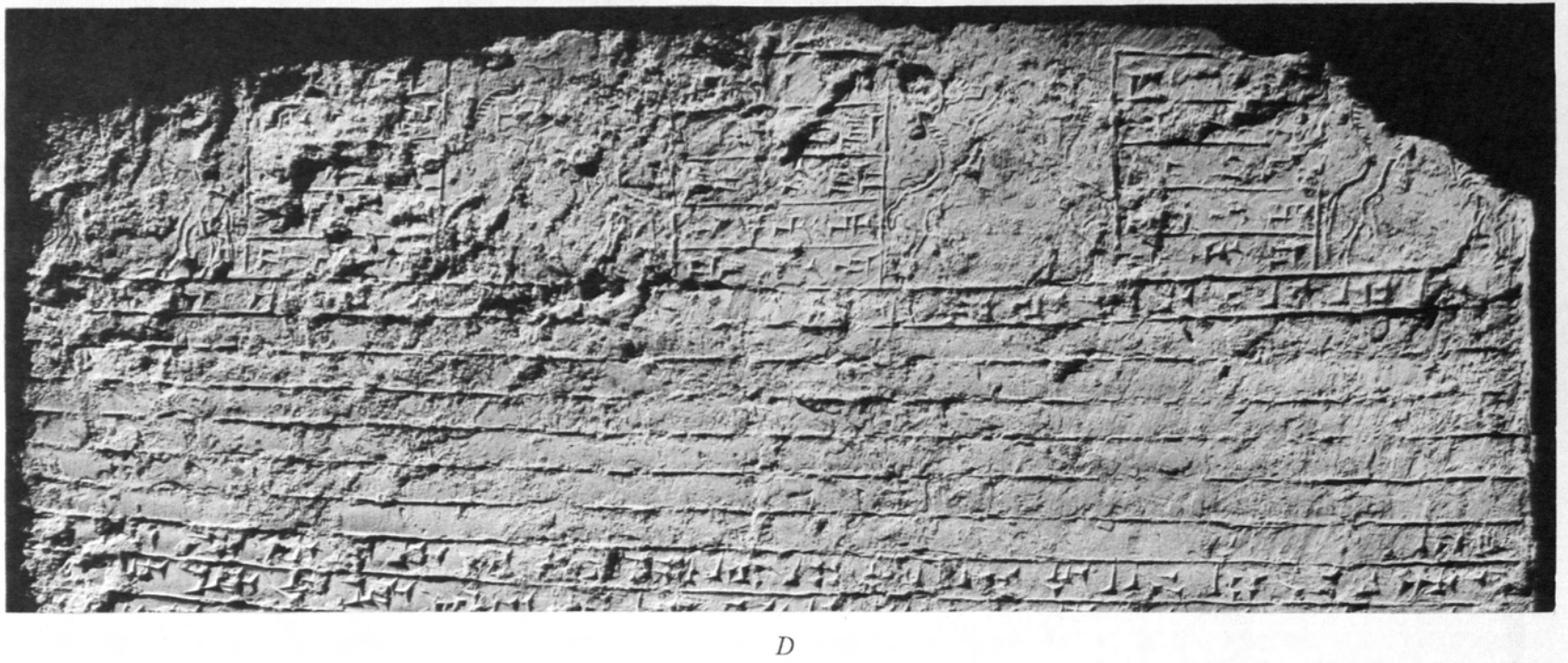
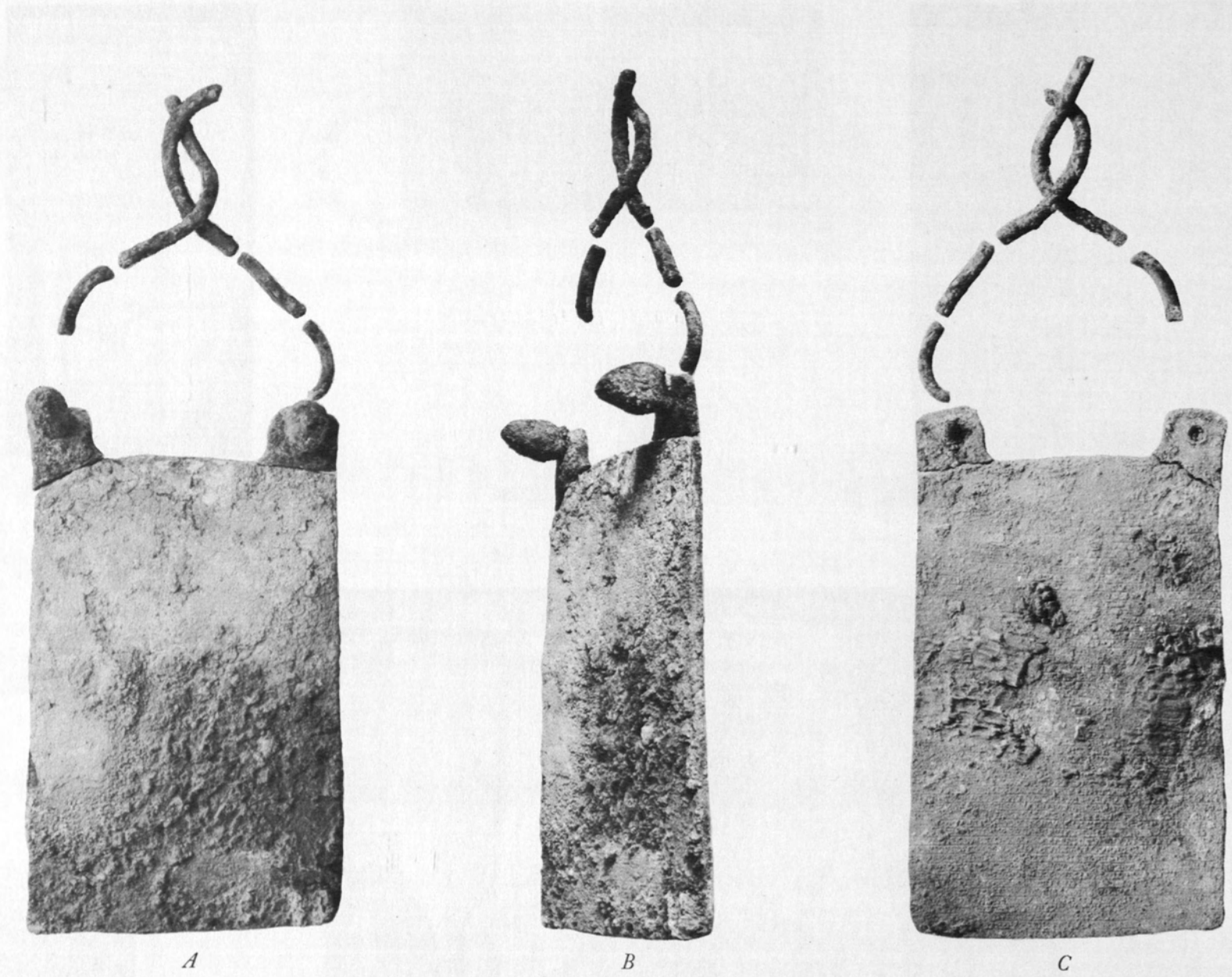
3a

3b



4

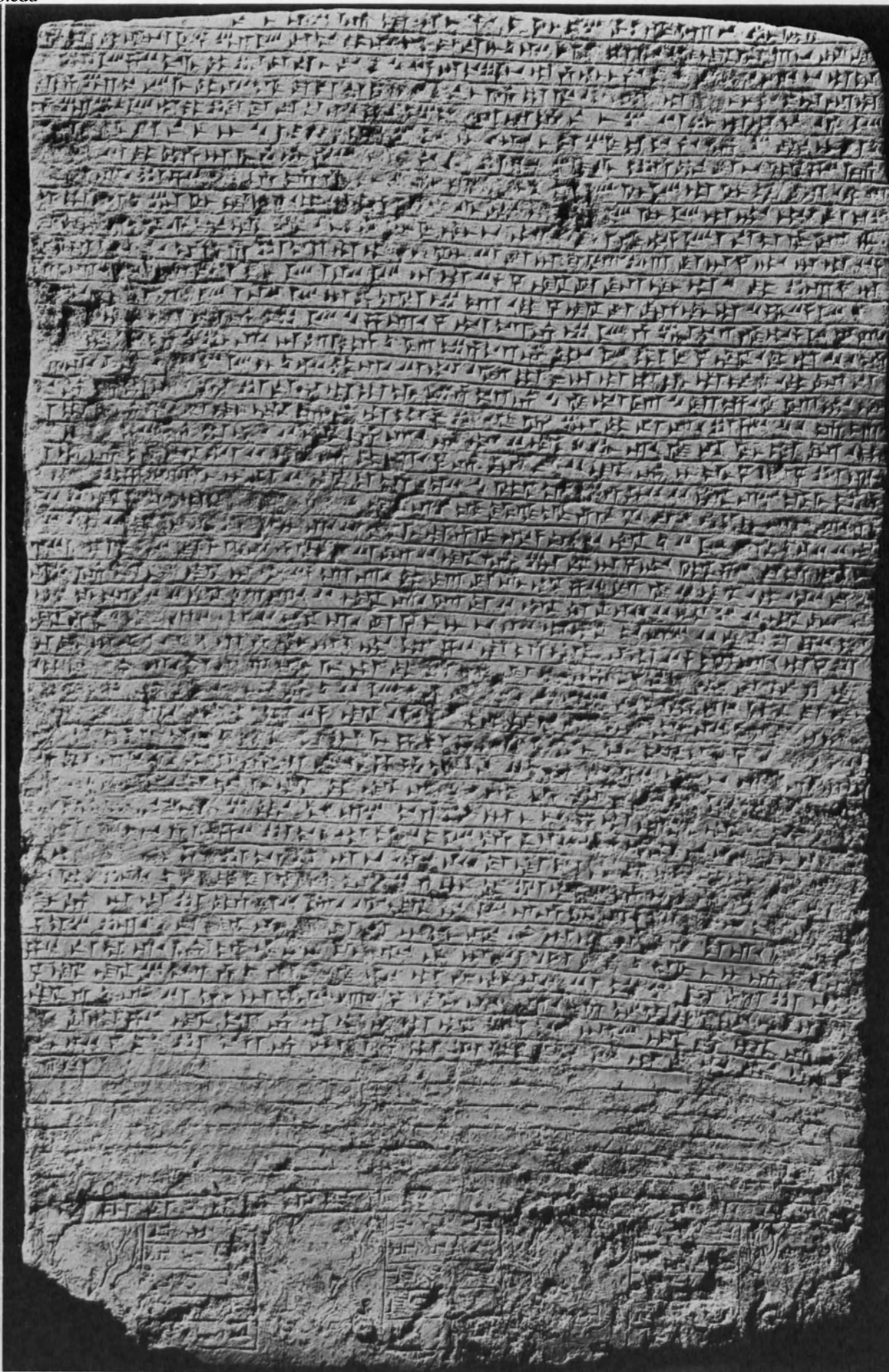
VOTIVE CYLINDERS, INSCRIBED AND SCULPTURED. SCALES, 2:1 AND (NOS. 1b-c, 3a) 1:1  
(NOS. 1c, 2, AND 3a-b ARE CASTS)



ELAMITE BRONZE PLAQUE (PT6 297). OBVERSE (A-B) AND REVERSE (C) AS FOUND. SCALE, 1:4  
TOP OF REVERSE AFTER CLEANING (D). ACTUAL SIZE

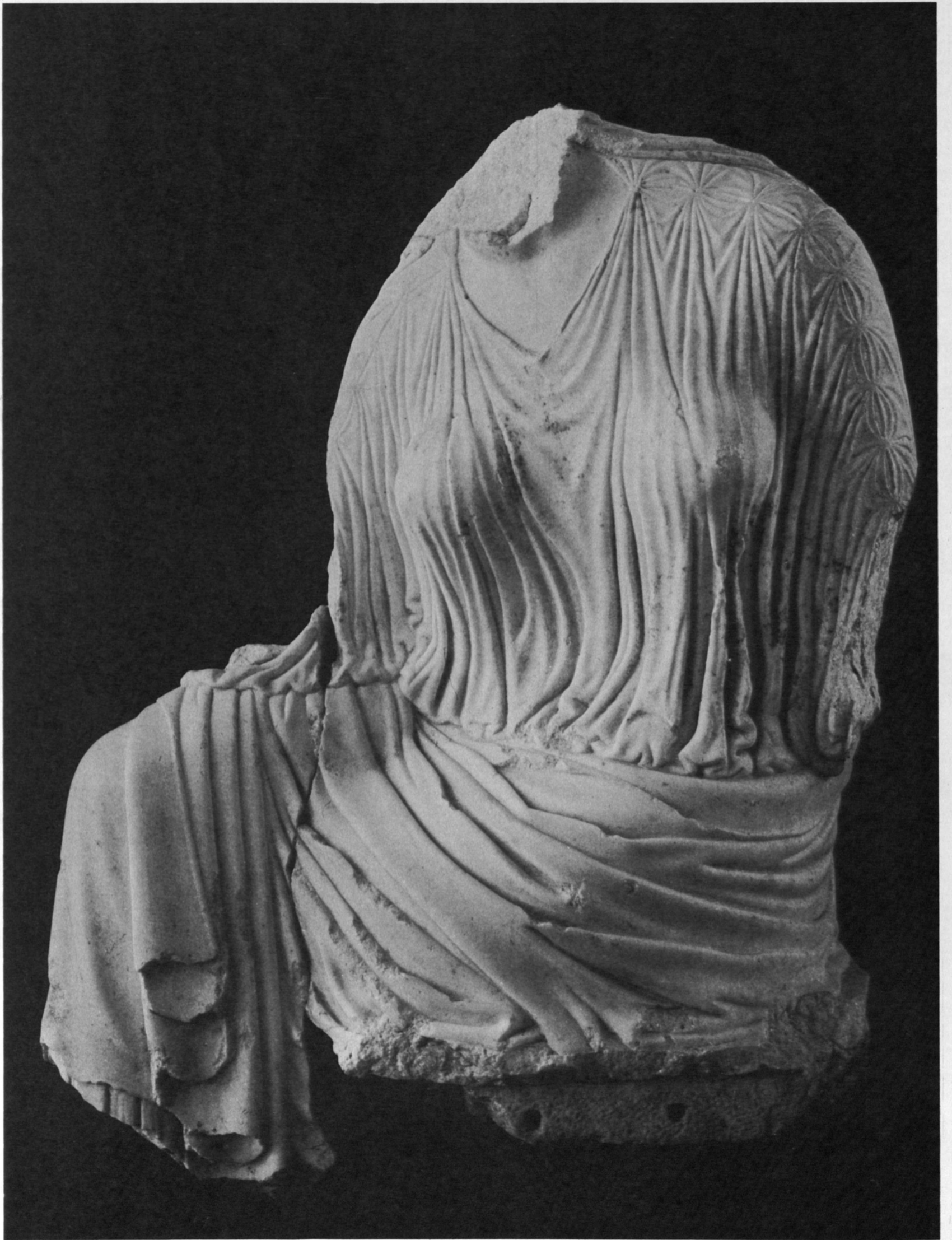


A



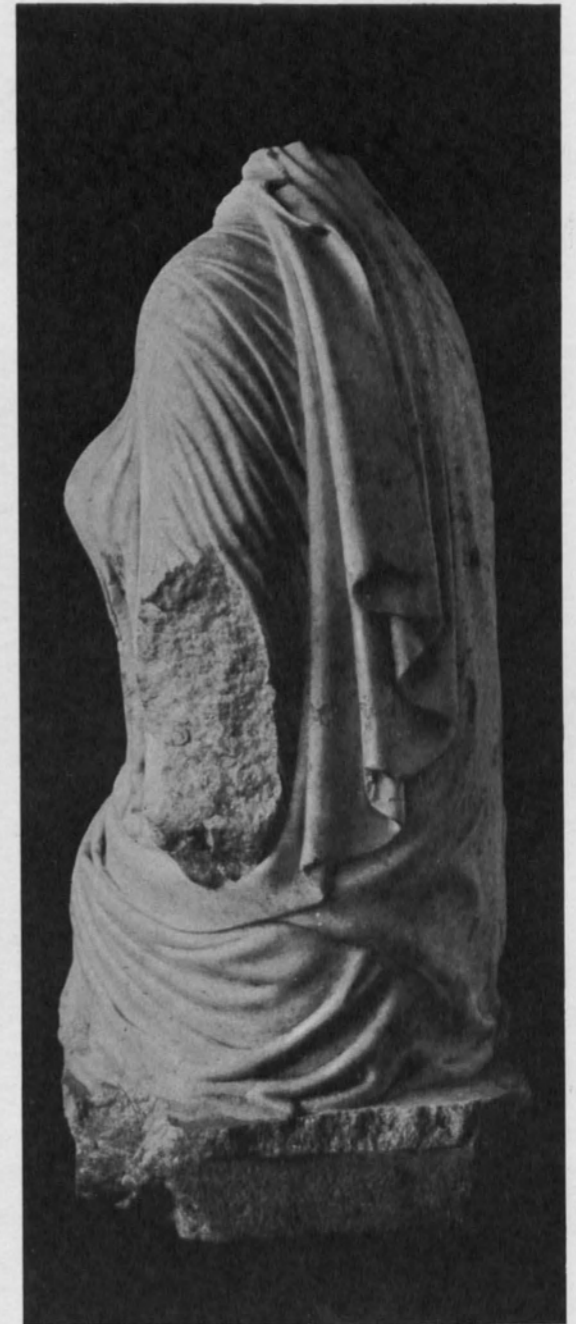
B

ELAMITE BRONZE PLAQUE (PT6 297). OBVERSE (A) AND REVERSE (B) AFTER CLEANING. SCALE, 3:4



MARBLE STATUE OF A GREEK LADY (PT4 1166). SCALE, SLIGHTLY LESS THAN 1:3



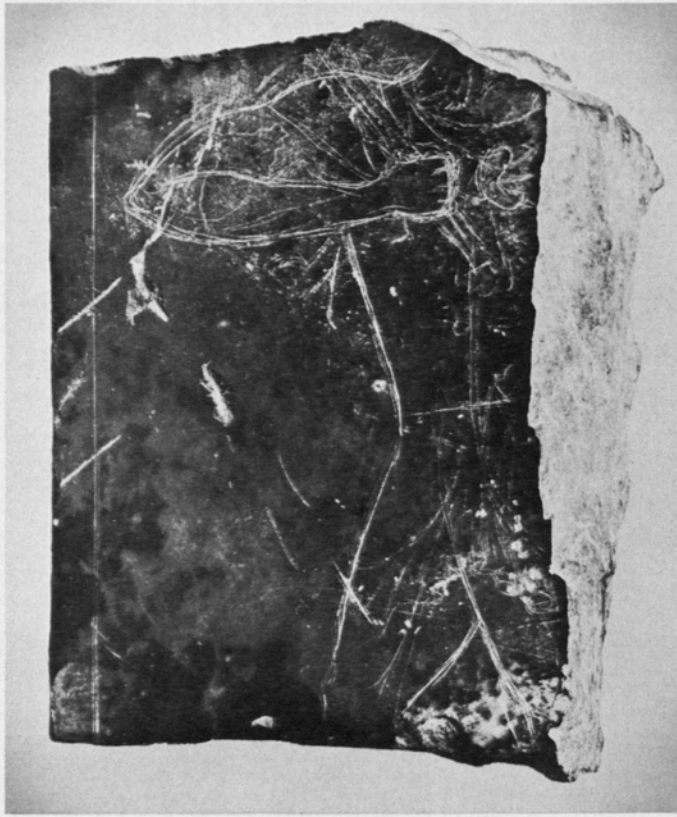


SIDE VIEWS AND REAR VIEW OF THE MARBLE STATUE OF A GREEK LADY (PT4 1166). SCALE, ABOUT 1:6

No.	Field No.	Find-Spot	Object	Material	Remarks
1	PT4 1095	Treasury, Hall 38, Plot HG 22	Band with embossed decoration	Bronze, patinated	Parts of two nude men in relief
2	PT6 595	Treasury, Courtyard 29, Plot IG 13	Sketch slab	Dark gray limestone	Grafitto fragment of Greek figure
3	PT4 62 (base) PT4 34 (foot)	Treasury, Portico 19, near E. wall (base), and Portico 18 (foot)	Statuette base and part of human foot	Greenish-blue composition	Base inscribed with Egyptian hieroglyphs
4	PT4 1062	Treasury, Hall 38, Plot HG 31	Part of problematical object (pot stand?)	Alabaster, banded, tan and cream shades	Negroid head of Bes on flat slab; fractures at either side of head and of slab
5	PT4 104	"Garrison Street," near E. entrance of Treasury, Plot HG 54	Statuette	Bronze, patinated	Upper part of ram-god Harsaphes
6	PT5 299	Treasury, Hall 38, Plot HG 22	Statuette	Blue composition	Torso of Bes, nude but for belt and lion(?) skin
7	PT3 306	"Garrison Street," floor, Plot HG 75	Statuette fragments	White stone	Right shoulder and arm fragment of man; probably not shown in correct relationship
8	PT6 206	Treasury, Hall 41, floor, Plot HF 67	Statuette	Bronze, patinated	Upper part of man; solid bronze; iron rust at lower end and on right shoulder



1



2



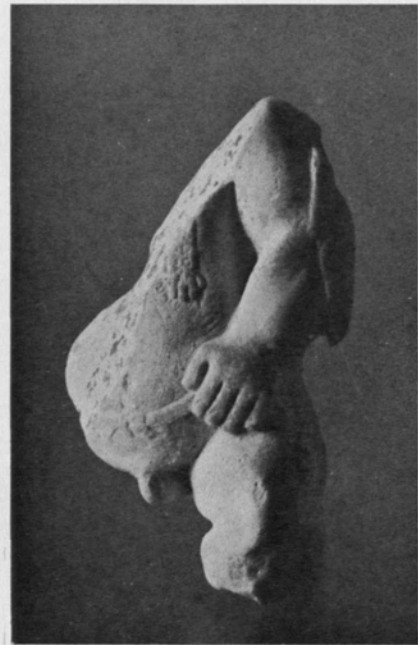
3



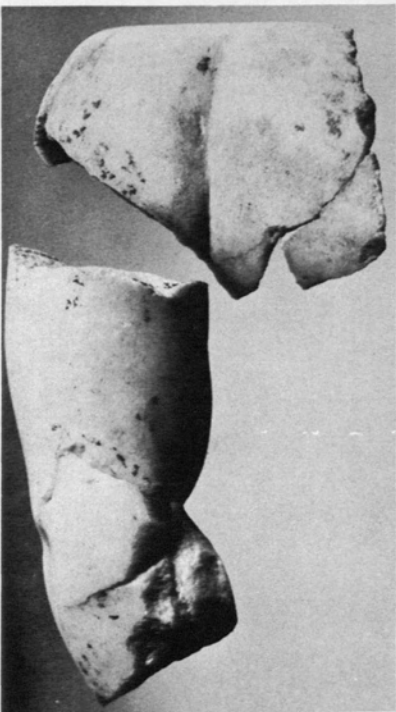
4



5



6



7



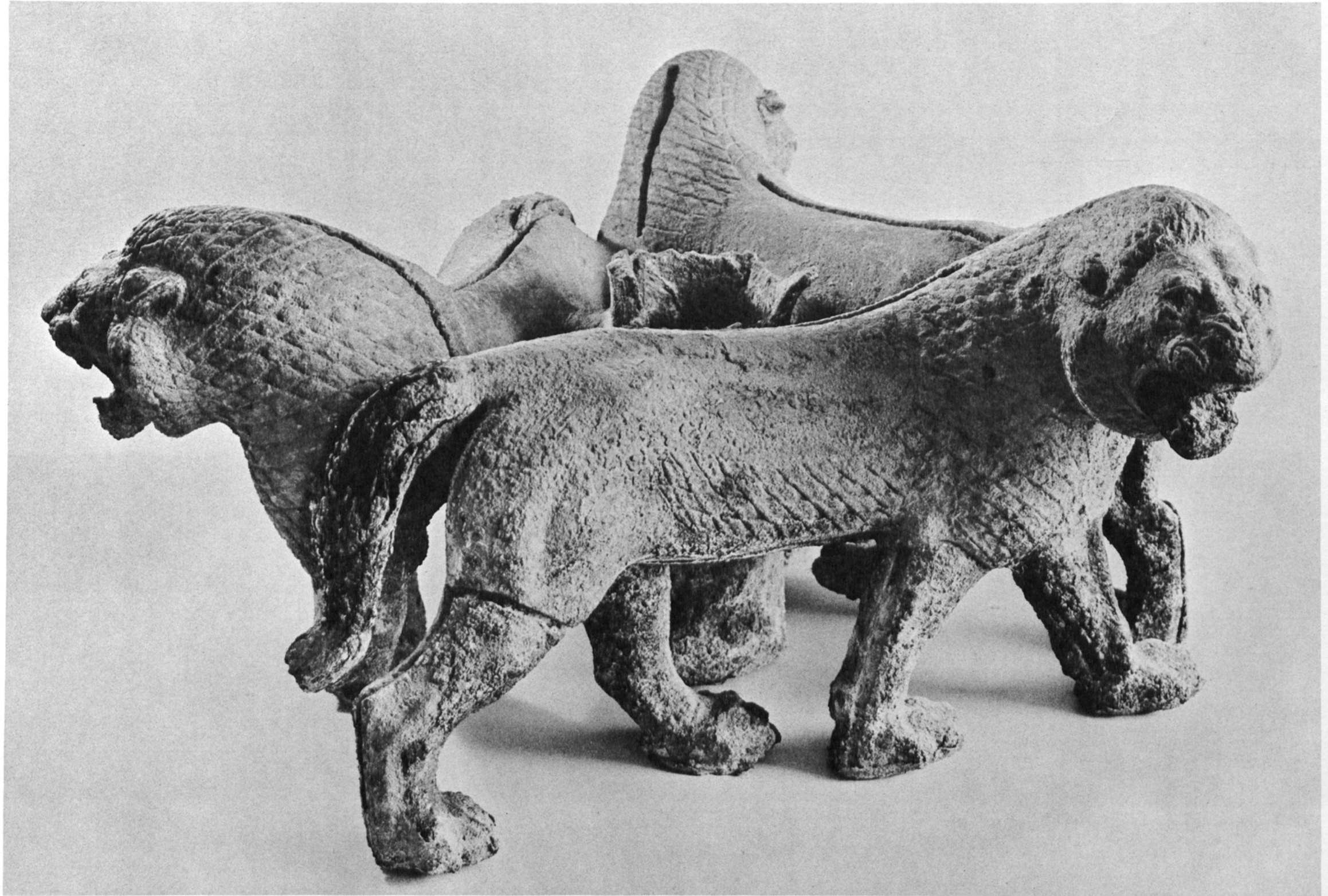
8

GREEK GRAFFITO AND MISCELLANEOUS GREEK, EGYPTIAN, AND NATIVE(?) SCULPTURES  
SCALES, 1:1 AND (NO. 7) 1:2

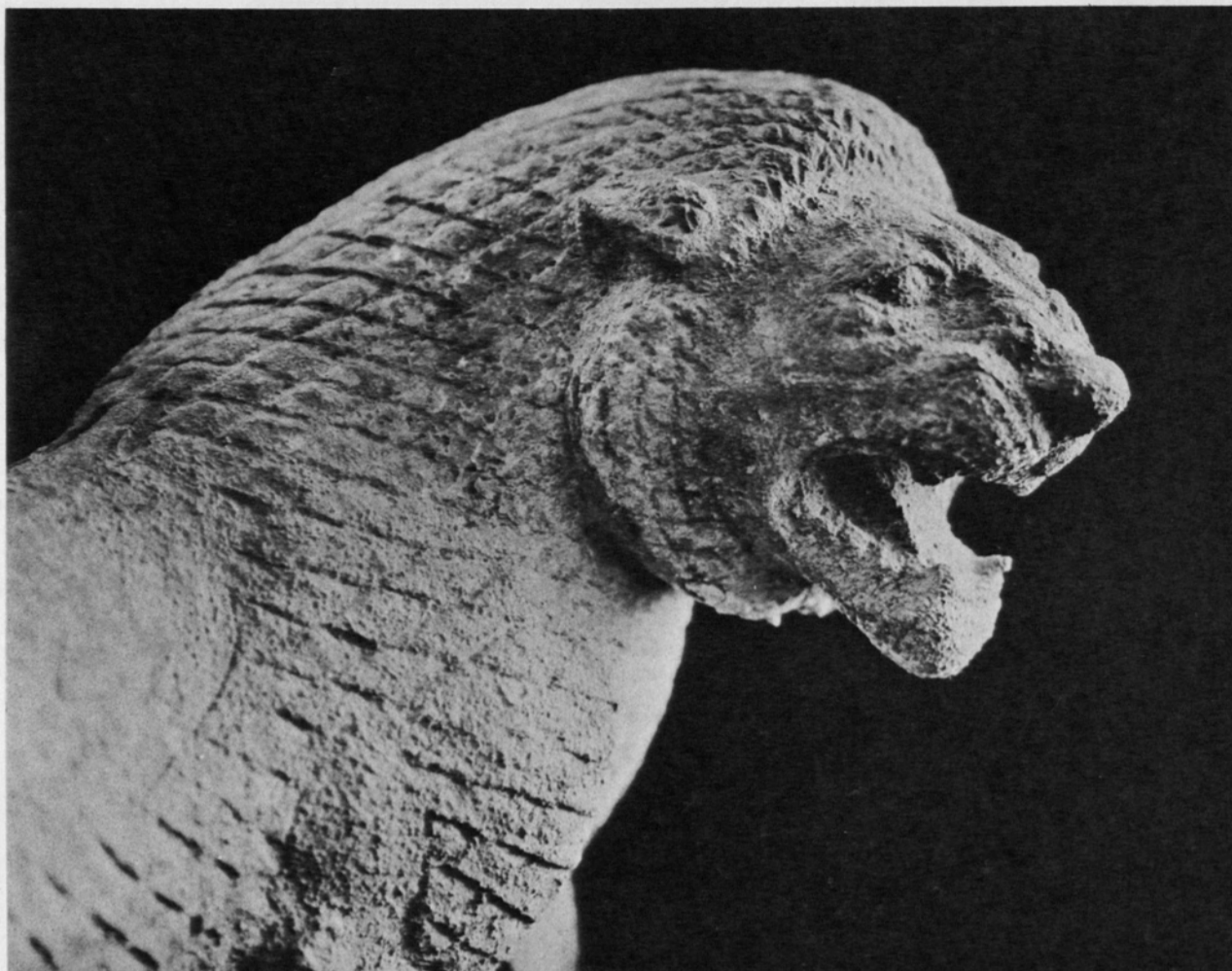




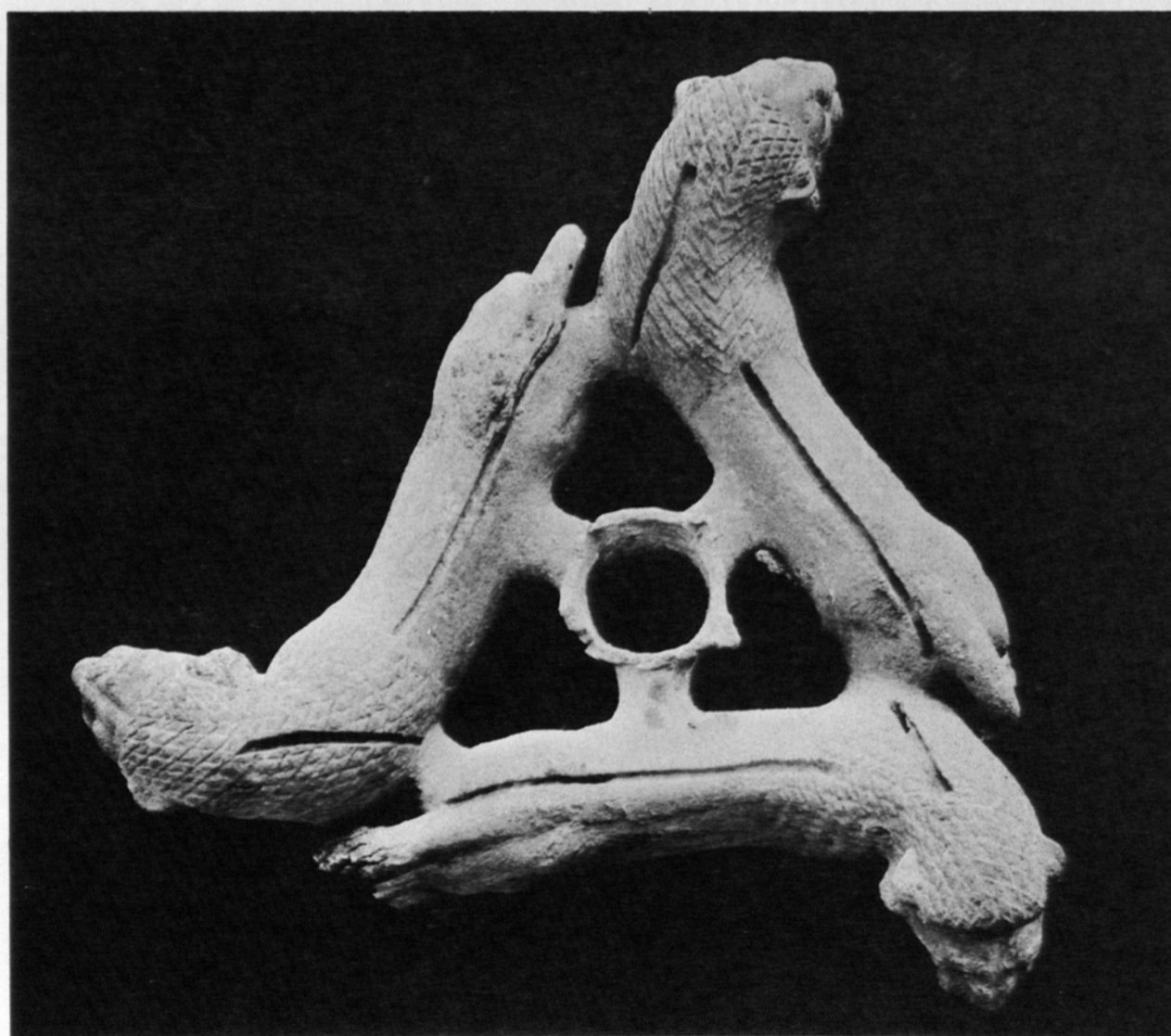
BAKED-CLAY SCULPTURE OF A PERSIAN'S HEAD (PT5 767). SCALES, 2:1 AND 1:1



BRONZE PEDESTAL OF THREE LIONS (PT5 642). SCALE, 1:2



*A*

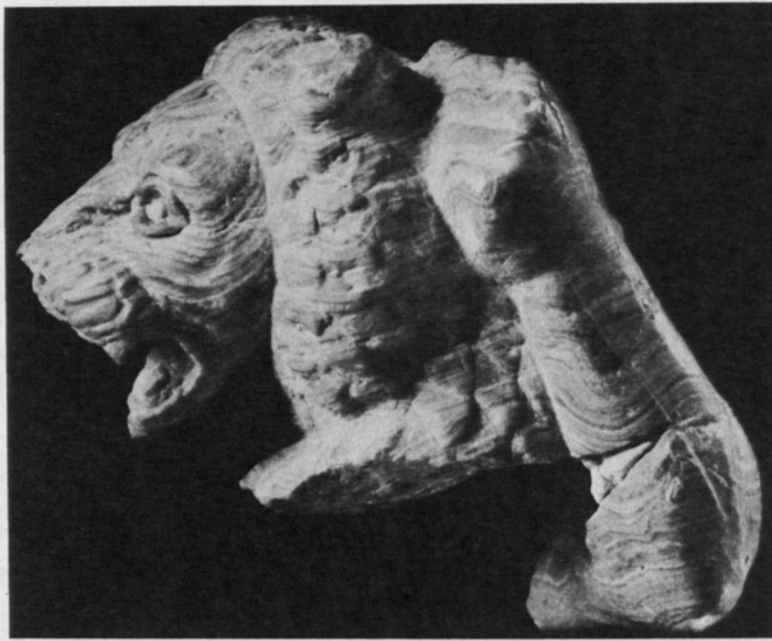
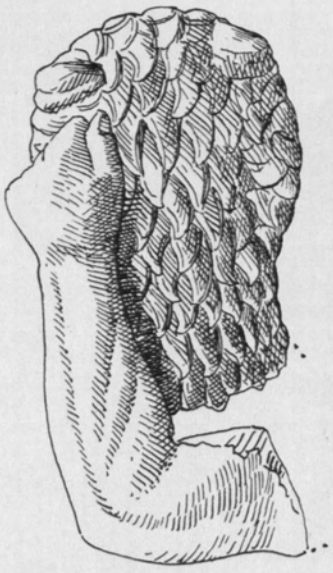


*B*

BRONZE PEDESTAL OF THREE LIONS (PT5 642). *A*. HEAD OF ONE LION. SCALE, ABOUT 3:4  
*B*. TOP VIEW OF PEDESTAL. SCALE, 1:4

No.	Field No.	Find-Spot	Material	Remarks	Scale
1	PT5 293	Treasury, Hall 38, floor, Plot HG 21	Calcareous stone, banded red and yellowish brown; eyes of lion inlaid with blue lapis lazuli encircling yellowish-green frit	Remnants of man's left arm, fist grasping lion by its mane	a and c, 1:1 b, 1.5:1
2	PT5 83	Throne Hall, portico, floor, Plot GF 23	Blue composition	Lion's paw; inlaid claws missing	1:1
3	PT6 379	Treasury, Room 70, Plot IG 01	White limestone	Rear part of couchant animal; scalloped design on flank; hollow, oblong perforation in base	1:2
4	PT5 829	Palace D, loose soil from western and central rooms below palace, Plot IF 11	Blue composition	Lion's head; ear and mane indicated	1:2
5	PT5 341	Treasury, Hall 41, Plot HG 60	Blue composition	Part of body and wing of sejan sphinx(?)	1:2
6	PT6 160	Treasury, Hall 41, Plot HF 68	Blue composition	Wing fragment of sphinx or the like	1:2
7	PT4 51	Treasury, Portico 18, Plot HG 53	Blue composition	Palmette	1:2
8	PT6 598	Treasury, Courtyard 29, refuse	Baked clay, dark gray surface and paste	Head of ram; fragment of figurine or vessel handle	1:2
9	PT5 28	Throne Hall, portico, Plot GF 32	Bronze, patinated	Leg of quadruped; iron lump at upper end	1:2
10	PT5 414	Treasury, Room 40, Plot HG 12	Baked clay, grayish-brown surface, grayish red-brown paste, medium fine	Rear part of rampant gazelle(?); fragment of figurine or vessel handle	1:2

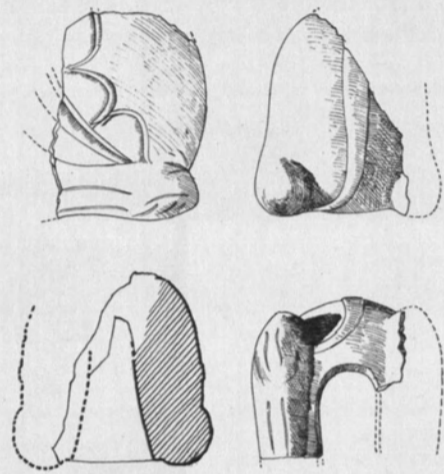




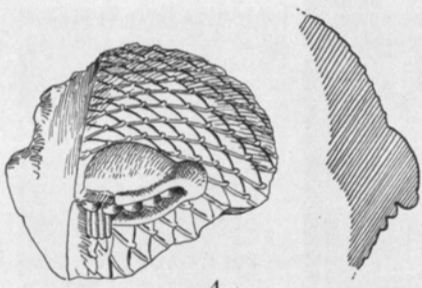
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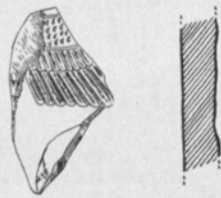
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3



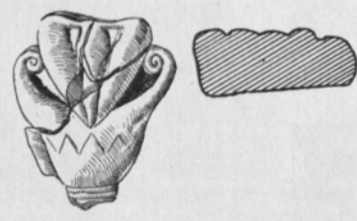
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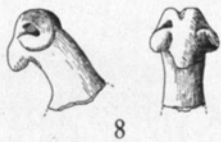
5



6



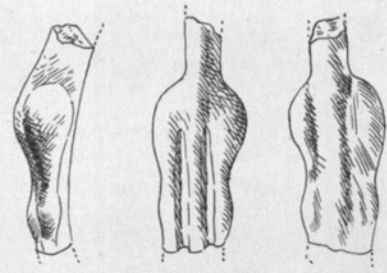
7



8



9



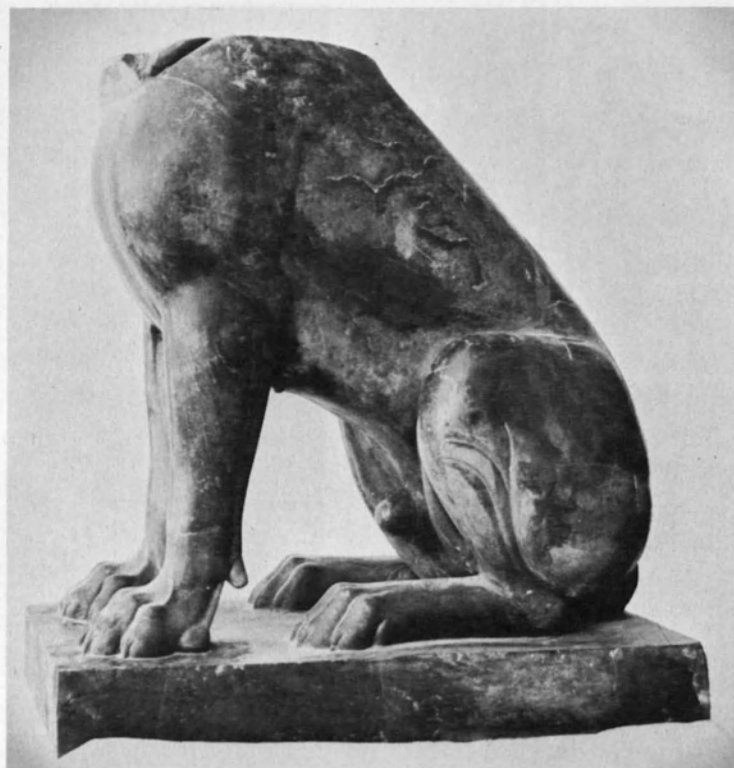
10

MISCELLANEOUS SCULPTURED FRAGMENTS

PLATE 36



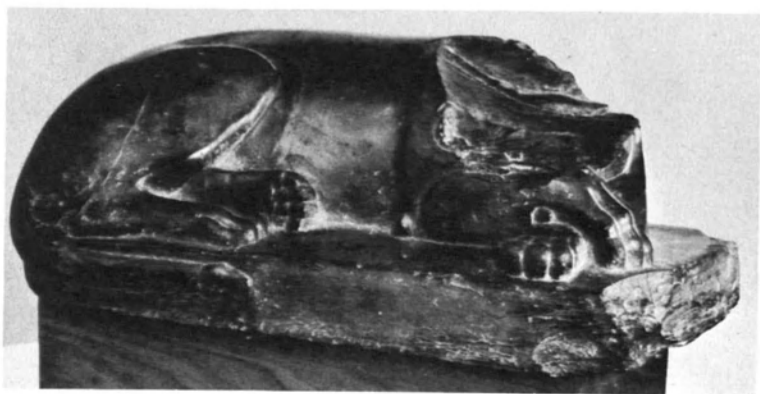
A



B



C



D



E

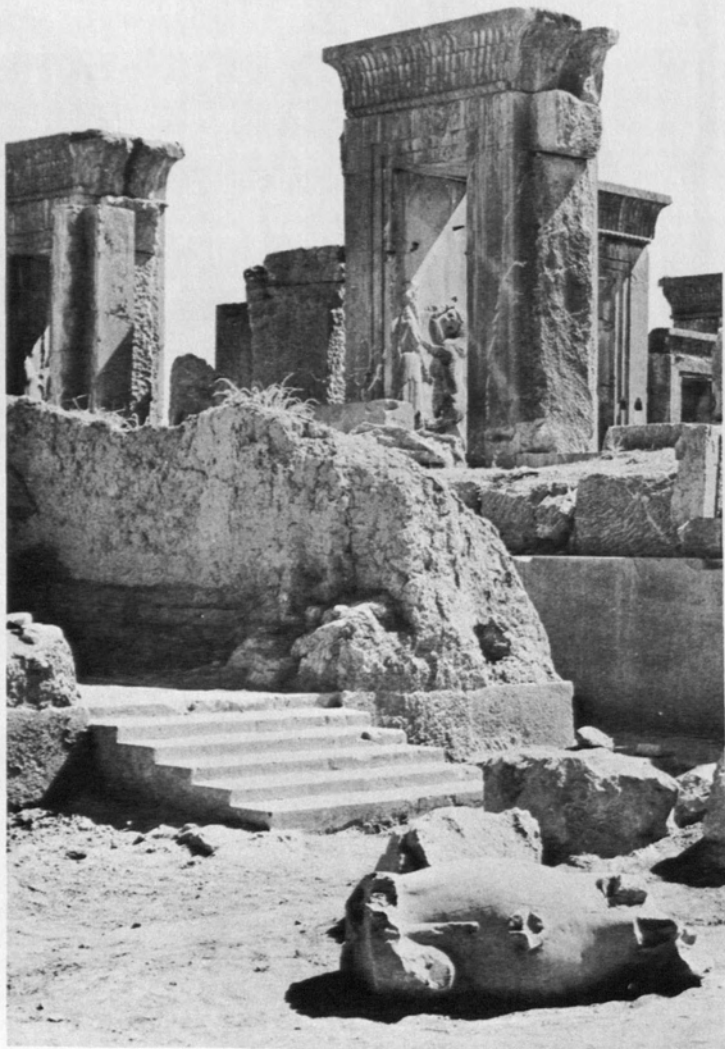
ENTRANCE STATUES. A-B. MASTIFF (PT7 377). SCALE, ABOUT 1:8. C. IBEX. SCALE, ABOUT 1:10  
D-E. FELINE (LEOPARD?). SCALE, ABOUT 1:6



A



B



C

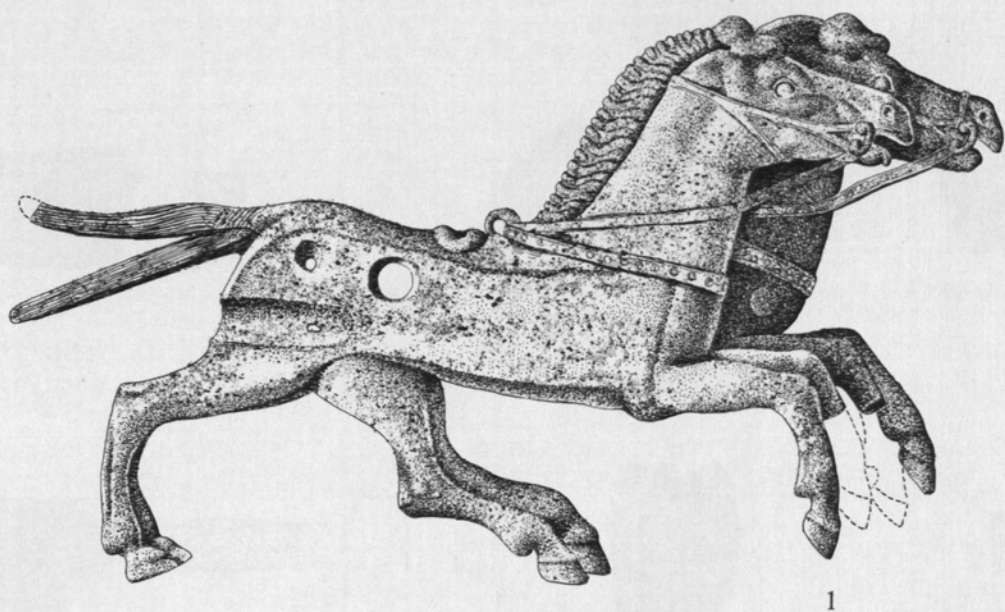
FIND-SPOTS OF ENTRANCE STATUES. A. IBEX(?) AND TWO PEDESTALS. B-C. TORSO OF BULL, WITH STAIRWAY TO PALACE G AND DARIUS' PALACE IN BACKGROUND OF C (DIRECTION OF VIEW, SW)



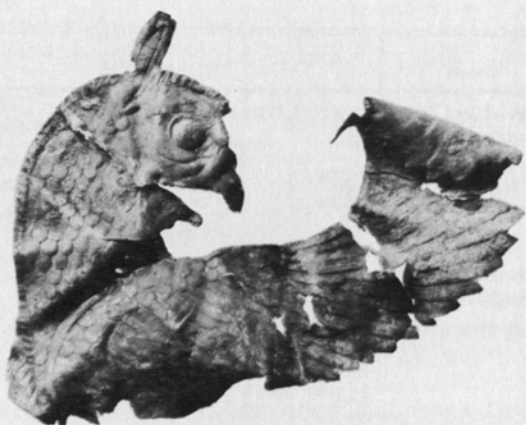
TWO BRONZE HORSES (PT5 175; SEE PL. 39:1). SCALE, ABOUT 4:5

TABLE FOR PLATE 39

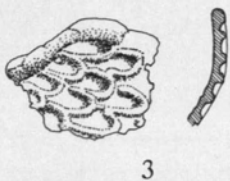
No.	Field No.	Find-Spot	Material	Remarks
1	PT5 175	Throne Hall, portico, in pocket of ashes, ca. .50 above floor, Plot GF 24	Bronze, patinated	See Pl. 38. Side (partly reconstructed) and front of two harnessed galloping horses; rivet holes; one rivet pierces chest of distal horse; reverse concave; maximum length, 26.2 cm.; element of frieze(?)
2	PT5 459	Apadana, N. courtyard, Plot GE 30	Thin bronze sheet, patinated	Horned regardant griffin
3	PT4 796	Treasury, Room 33, Plot HG 41	Bronze sheet, patinated	Wing of bird or monster
4	PT5 144	Harem, N. service quarters, refuse, Plot HF 32	Thin bronze sheet, folded, patinated	Wing of bird or monster
5	PT6 413	Treasury, Courtyard 29, Plot IG 11	Thin bronze sheet, patinated	Winged unit, perhaps a variant of the winged disk; pierced by bronze nails
6	PT6 225	Street N. of Treasury, trench, Plots HF 17-18	Bronze sheet, patinated	Sphinx(?), wing, and posterior part of human head with bunched hair
7	PT5 831	Palace D, center room below building, Plot IF 11	Bronze sheets, patinated	Parts of body (a), wing and body (b), and head (c) of two or more griffins or the like



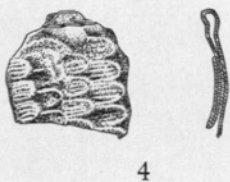
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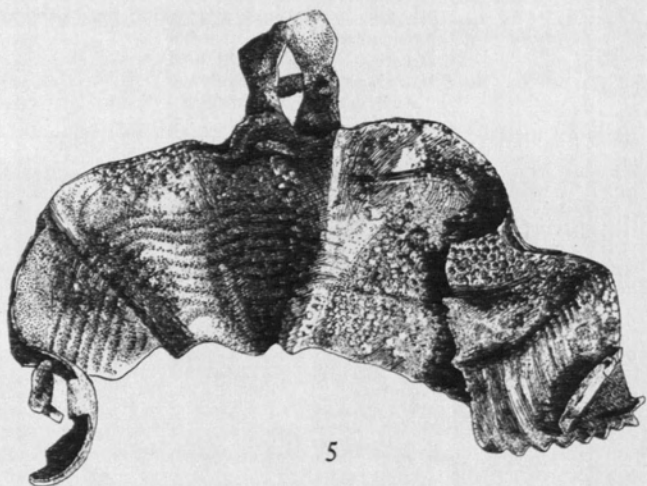
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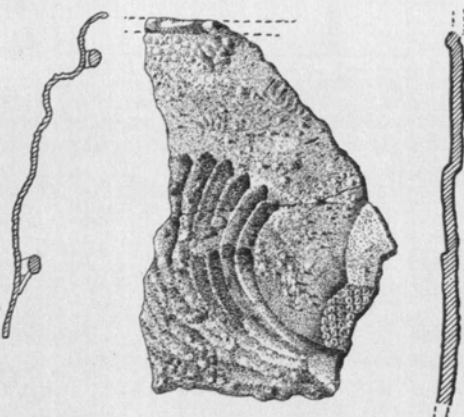
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4



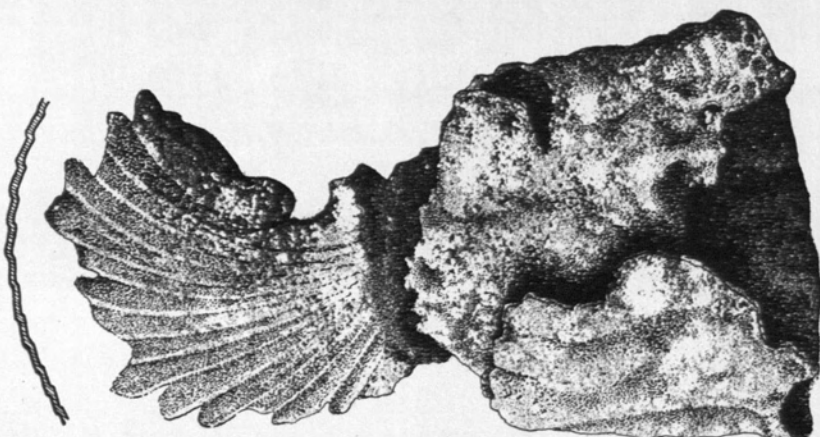
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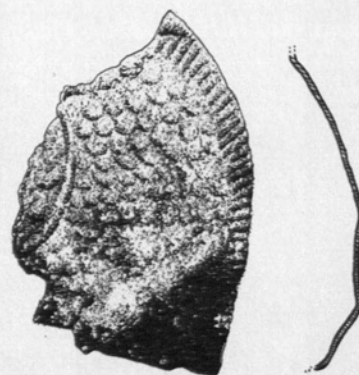
6



7a



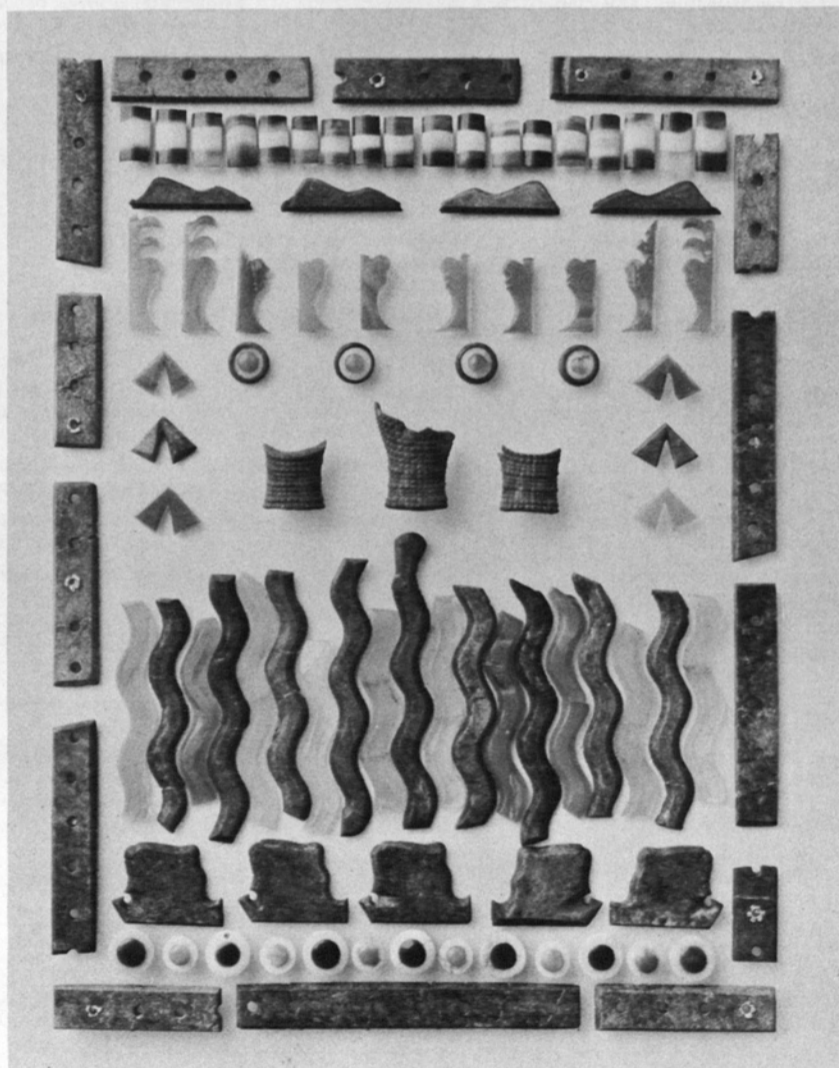
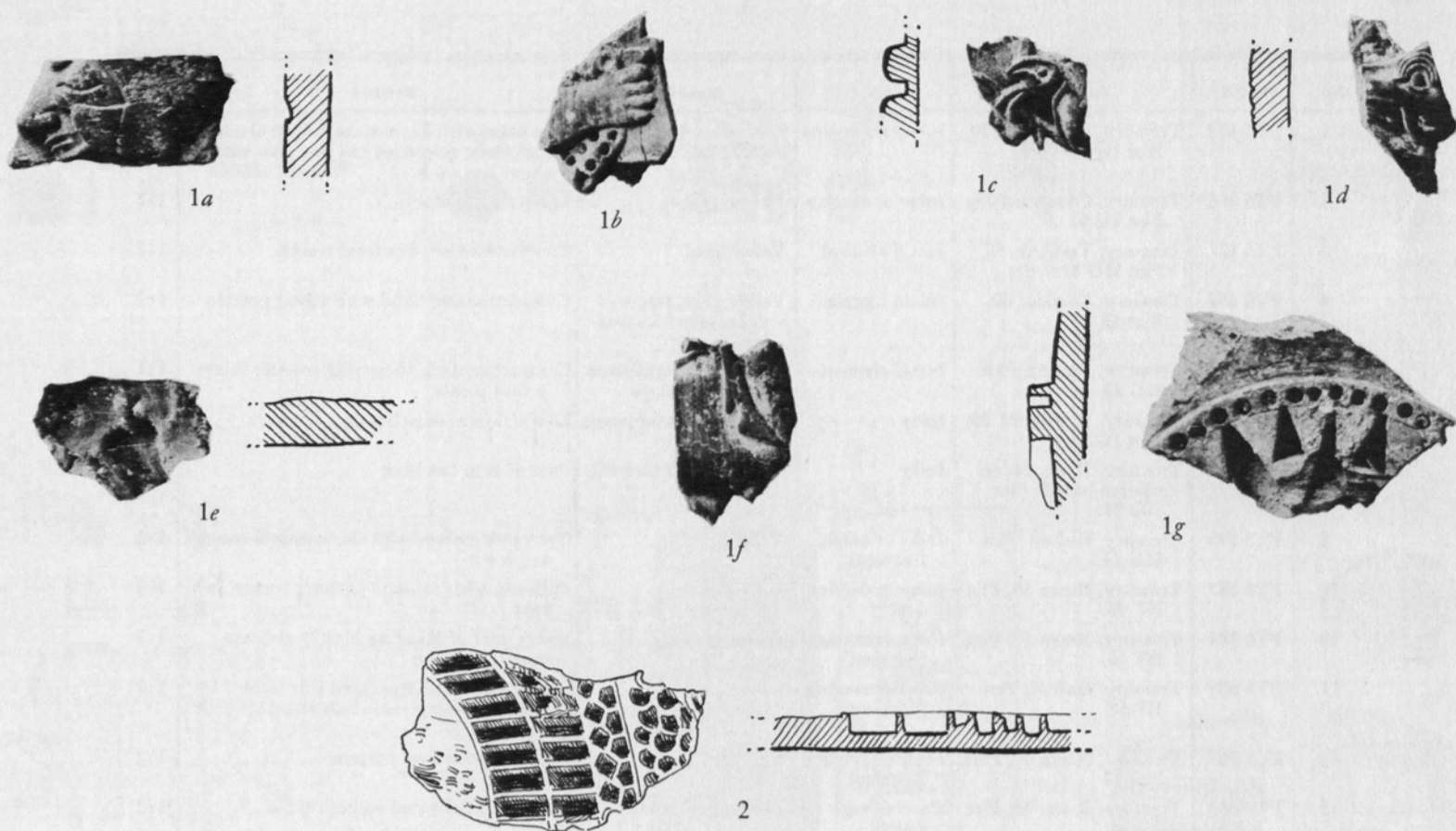
7b



7c

PARTS OF APPLIED METAL ORNAMENTS. SCALE, 1:2

No.	Field No.	Find-Spot	Object	Material	Remarks
1	PT5 624	Hall 41, Plots HG 70 and 80	Carved and inlaid fragments	Ivory(?), burned bluish gray	<i>a</i> , helmeted human head; <i>b</i> , human hand over pitted area; <i>c</i> , upper part of hawk; <i>d</i> , head of animal; <i>e</i> , chest and upper foreleg of animal; <i>f</i> , lower leg of animal; <i>g</i> , depressed star in pitted circle
2	PT5 329	Hall 41, Plot HG 70	Carved and inlaid fragment	Tan ivory or bone	Wing of griffin or the like; feathers marked by deep depressions
3	PT6 703	Room 63, NW. corner, hole beneath floor patch	Inlay elements	Frame: blue lapis lazuli perforated bars, with some yellow gold rivets 1st row: agate rectangles, brown shades and white 2d row: blue lapis lazuli units 3d row: translucent brown-red carnelian units 4th row: orange and white sardonyx eye stones inlaid in blue lapis lazuli rings 5th row: blue lapis lazuli beards Flanking rows 4 and 5: angular units of blue lapis lazuli and translucent brown-red carnelian 6th row: wavy units, alternating brown-red carnelian and blue lapis lazuli 7th row: blue lapis lazuli units 8th row: eye stones, brown and white onyx, orange and white sardonyx	Sample units of mosaic object

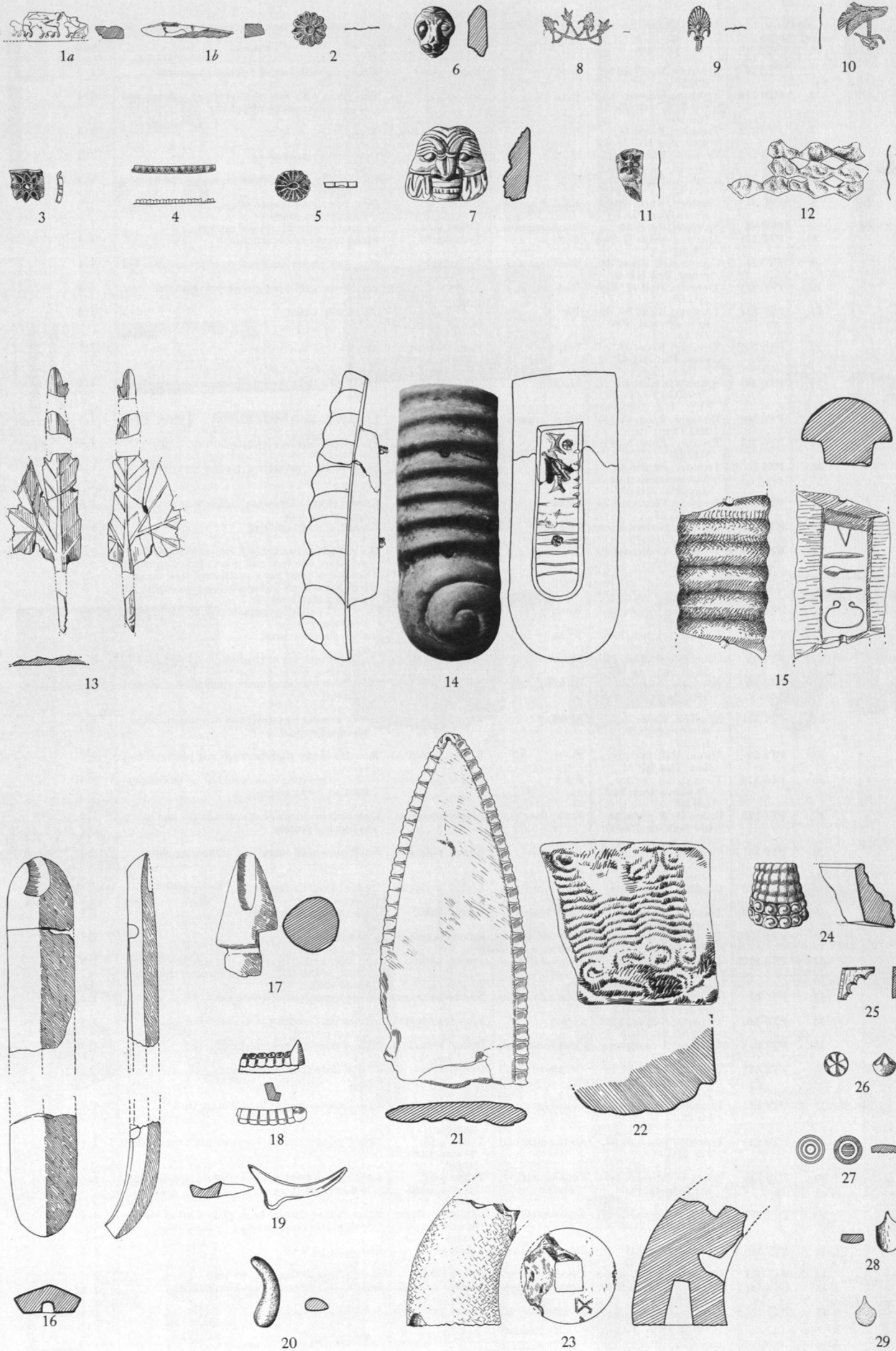


3

CARVED FRAGMENTS AND INLAIS, FROM THE TREASURY. SCALES, 1:1 AND (NO. 3) 1:2

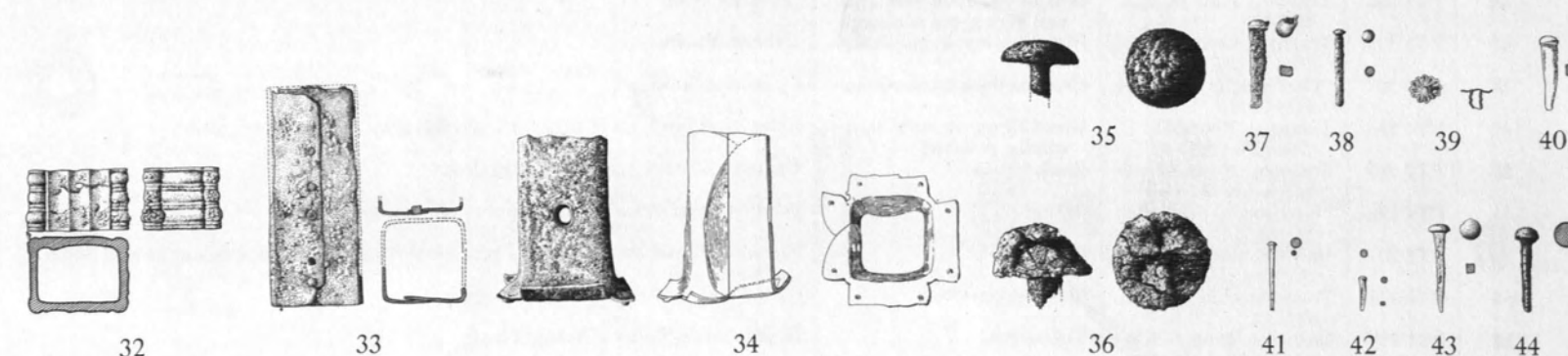
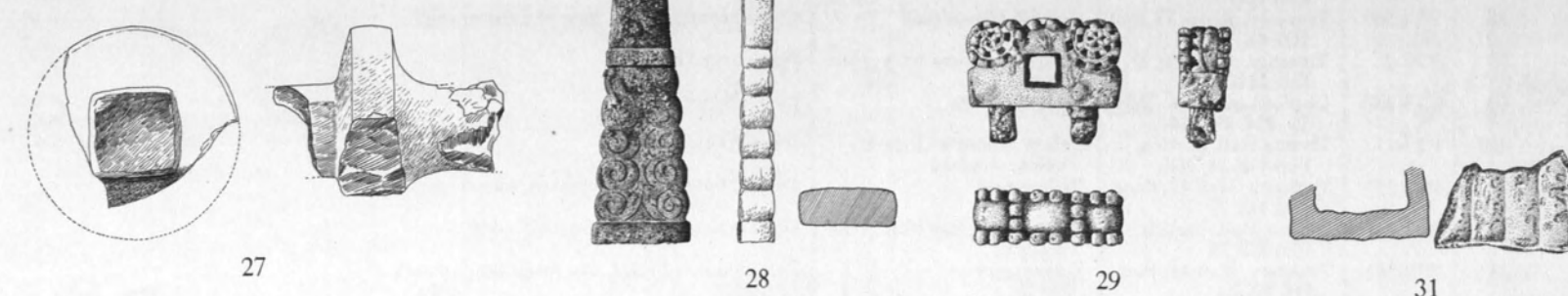
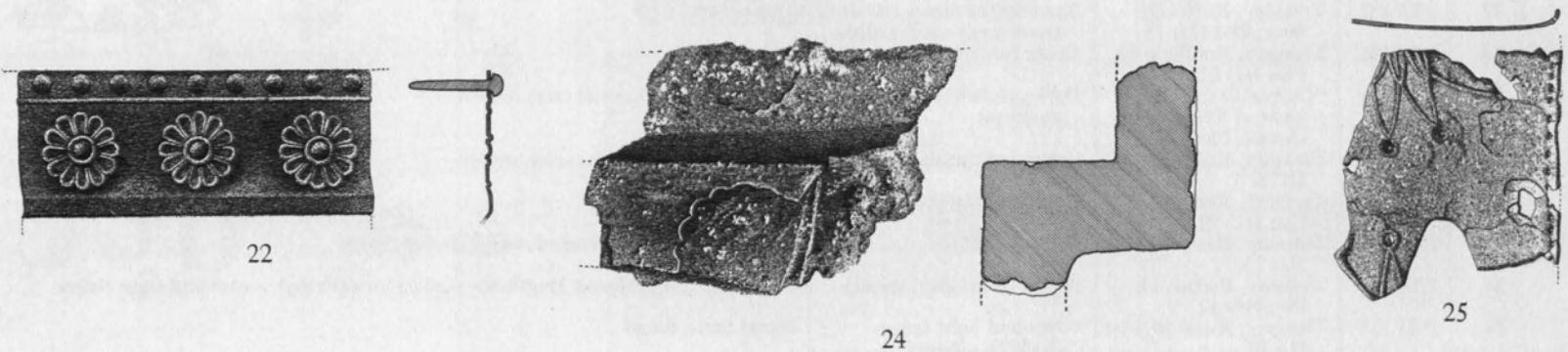
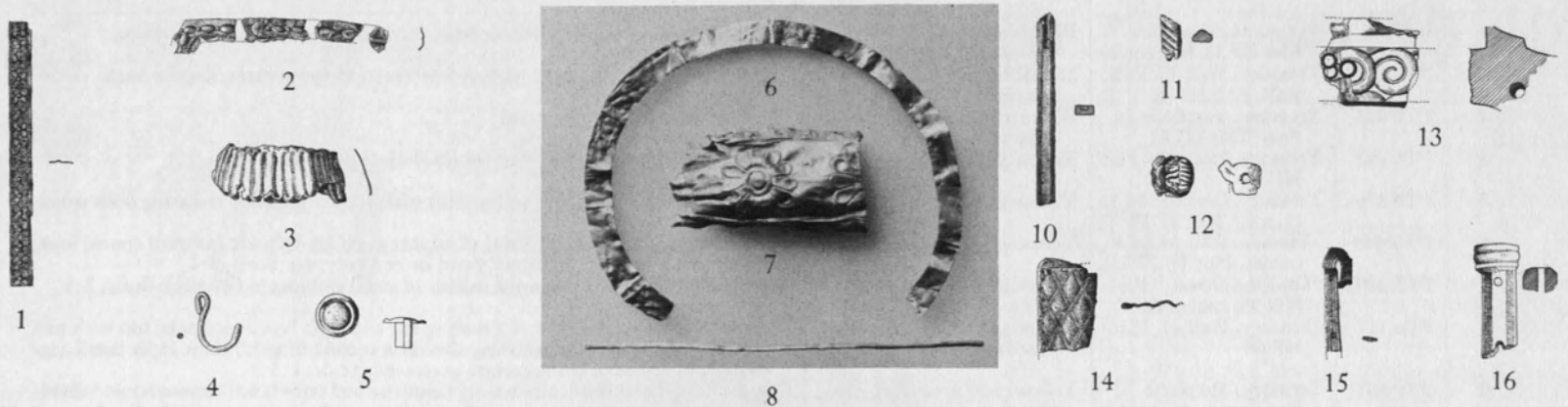
No.	Field No.	Find-Spot	Object	Material	Remarks	Scale
1	PT4 462	Treasury, Courtyard 29, Plot IG 13	Inlaid fragments	Tan ivory(?); yellow gold inlay on <i>b</i>	Two flakes with depressions in form of miniature lions; gold-filled tail and gold strip above lion on <i>b</i>	1:2
2	PT6 388	Treasury, Courtyard 29, Plot IG 02	Inlay or overlay	Yellow gold	12-petaled rosette	1:2
3	PT6 177	Treasury, Vestibule 50, Plot HG 11	Inlaid element	Yellow gold	Compartmented, 8-petaled rosette	1:2
4	PT6 432	Treasury, Corridor 69, Plot IF 29	Inlaid fragment	Yellow gold; traces of light green fritlike inlay	Compartmented band with zigzag pattern	1:2
5	PT6 430	Treasury, Hall 62, Plot HG 90	Inlaid element	Yellow gold; light green turquoise inlays	Compartmented, 16-petaled rosette; inlays in four petals	1:1
6	PT6 412	Treasury, Courtyard 29, Plot IG 13	Inlay	Greenish-blue turquoise, polished	Lion's(?) face; edge beveled; flat back	1.5:1
7	PT6 359	Treasury, Room 64, on column base 5, Plot HG 91	Inlay	Light greenish-blue frit	Face of Bes; flat back	1.5:1
8	PT5 298	Treasury, Hall 38, Plot HG 22	Inlay or overlay fragment	Yellow gold	Openwork garland with alternating blossoms and fruits	1:2
9	PT6 287	Treasury, Room 55, Plot HF 66	Inlay or overlay	Yellow gold	Palmette with <i>repoussé</i> pattern; broken at base	1:2
10	PT6 288	Treasury, Room 55, Plot HF 66	Inlay or overlay fragment	Yellow gold	Lower part of standing bird(?); delicate <i>repoussé</i> pattern	1:2
11	PT5 686	Treasury, Hall 41, Plot HF 58	Inlay or overlay fragment	Yellow gold	Ornamented with 8-pointed star formed by cross ( <i>pommée</i> ) whose bars alternate with branches	1:2
12	PT5 267	Treasury, Room 40, Plot HG 12	Inlay or overlay fragment	Yellow gold	Openwork diamond pattern	1:2
13	PT6 662	Treasury, Room 83, Plot IG 25	Carved fragments	Tan ivory or bone	Leaf; veins indicated on both sides	1:2
14	PT3 246	Garrison quarters, Yard 21, floor, Plot HG 76	Inlay beard	Blue composition	Horizontal grooves, curl at lower end; oblong dowel with artisan's(?) marks on reverse; two bronze nails	1:2
15	PT7 356	Dump pile; perhaps from W. wing of Harem	Inlay beard fragment	Blue composition	Horizontal grooves; two holes for nails; dowel marked with symbols on reverse	1:2
16	PT6 324	Treasury, Room 57, Plot HF 87	Inlay	Opaque red glass with green surface	Feather fragment; beveled sides, gabled top, depressions in base	1:2
17	PT4 144	Treasury, Portico 20, Plot HG 71	Inset tooth	White chalk(?), scorched	Part of animal statue	1:2
18	PT4 1105	Throne Hall, portico, near W. bull, Plot GF 30	Inset teeth	White and tan stone, trace of reddish pigment	Portion of set of teeth of animal statue	1:2
19	PT5 830	Palace D, center room below building, Plot IF 11	Inlay	Opaque red glass with green and yellowish-green surface	Lower lid of eye	1:2
20	PT6 72	Treasury, Hall 41, Plot HF 59	Inlay?	Greenish-blue glass, white iridescent patina	Purpose problematical	1:2
21	PT4 1102	Throne Hall, portico, Plot HF 32	Problematical fragment	Gray stone	Flat, leaf-shaped object with rounded dentate edge; deep scratches on one face; one end fractured	1:2
22	PT5 428	Treasury, Hall 38, Plot HF 29	Relief fragment	Yellowish-brown baked clay	Unit of brick mosaic, showing beard or furry patch of animal or monster	1:2
23	PT6 339	Treasury, Room 58, NE. corner, Plot HF 98	Horn fragment	Gray limestone	Base rough, with central dowel hole and mason's mark; rest polished	1:4
24	PT6 108	Treasury, Stairway 49, above steps leading to roof, Plot HG 10	Inlay	Bluish-gray lapis lazuli, polished	Beard from relief or statuette	1:1
25	PT7 134	Apadana, E. portico, Plot HE 04	Inlay fragment	Translucent red-brown carnelian	Frame of rosette	1:2
26	PT6 330	Treasury, Room 57, Plot HF 87	Inlay	Opaque red glass with green surface	Spheroid; 6-petaled rosette	1:2
27	PT4 26	Treasury, Portico 18, Plot HG 63	Inlay	Blue lapis lazuli exterior circle, green frit(?) center, white limestone(?) intermediate circle; red pigment between center and intermediate circle and on reverse	Composite disk, perhaps an eye	1:2
28	PT6 712	Treasury, Courtyard 29	Inlay	Opaque red glass with green surface	Scale	1:2
29	PT5 273	Treasury, Hall 38, Plot HG 22	Inlay or overlay	Yellow gold	Scale	1:2





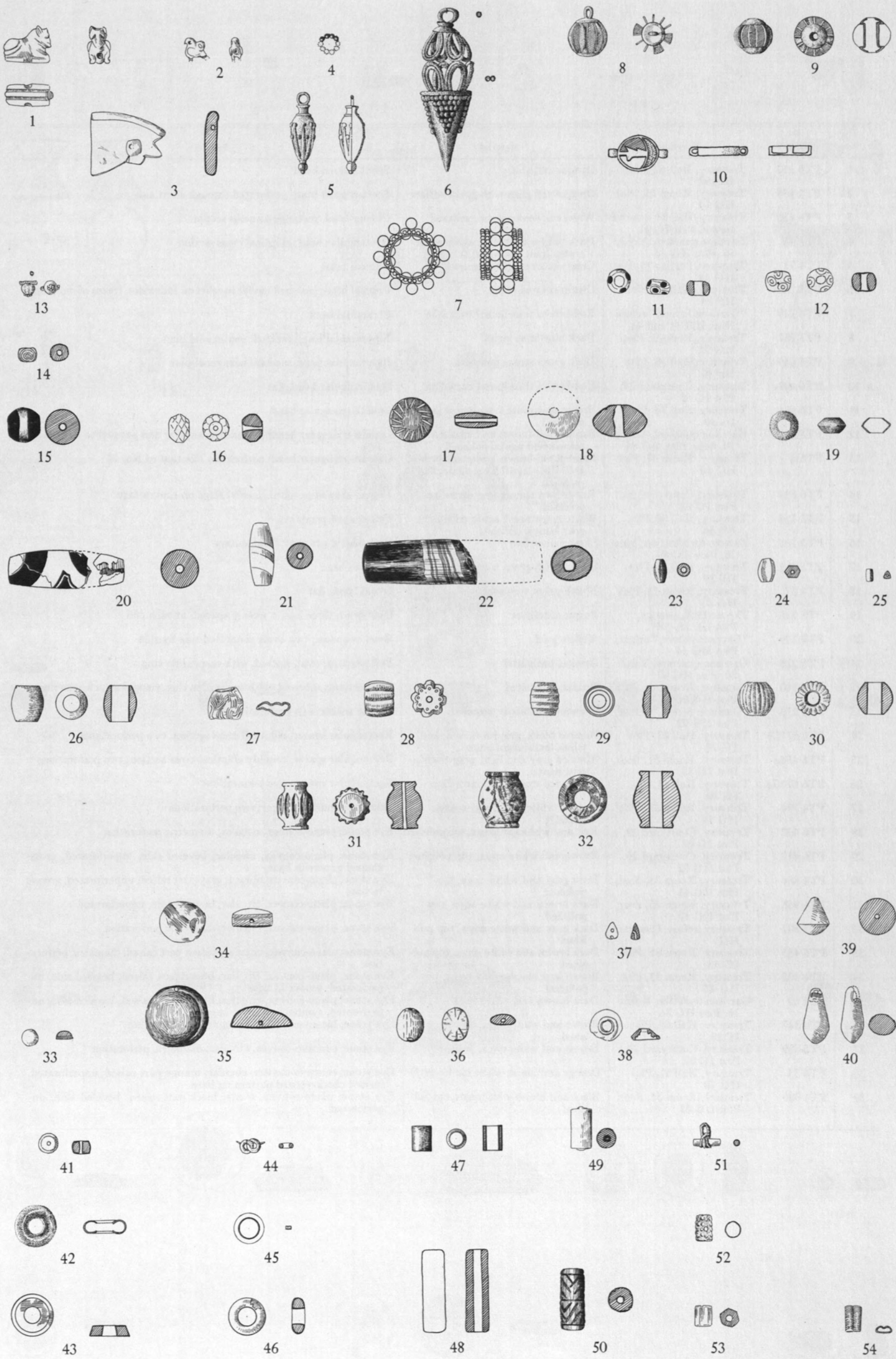
INLAY WORK AND ORIGINALLY ATTACHED SCULPTURED OBJECTS

No.	Field No.	Find-Spot	Object	Material	Remarks	Scale
1	PT6 47	Treasury, Hall 41, Plot HF 57	Band	Yellow gold	Decorated with row of 4-petaled blossoms	1:2
2	PT6 718	Treasury, Stairway 49, top of N. wall, Plot HG 00	Band fragments	Yellow gold	Decorated with row of alternating oblongs and small circles above ribbed line	1:4
3	PT3 375	Treasury, Room 11, floor, Plot HG 73	Band	Yellow gold, discolored by fire	Fluted	1:4
4	PT4 287	Treasury, Ramp 25, Plot HG 73	Hook	Yellow gold	Open end squared off	1:4
5	PT5 389	Treasury, Room 40, Plot HG 12	Cap	Yellow gold	Convex disk, with circular depression, on hollow cylinder	1:4
6	PT6 37	Treasury, Room 45, .60 above floor, Plot HF 26	Band fragment	Yellow gold	Originally perhaps open ellipse; one end missing; folded when found	1:4
7	PT7 94	Apadana, Room 16	Band fragment	Yellow gold	Decorated with 12-petaled rosettes	1:4
8	PT7 111	Apadana, Room 12, Plot HE 34	Rod	Yellow gold	Plano-convex cross section	1:4
9	PT7 21	Council Hall, Room 19b, refuse, Plot HE 46	Band fragment	Yellow gold	One edge shows scalloped molding; weight, 443 grams	1:4
10	PT6 82	Treasury, Hall 41, Plot HG 80	Rod	Bronze, patinated; yellow gold	Lengthwise gold-filled groove in bronze rod	1:4
11	PT6 613	Treasury, Room 84, floor in S. doorway, Plot IG 16	Bar	Gray lead covered with yellow gold foil	Diagonally fluted	1:4
12	PT4 963	Treasury, Room 33, floor, Plot HG 42	Fragment	Iron, oxidized; traces of yellow gold foil overlay	Pierced	1:4
13	PT6 383	Treasury, Courtyard 29, Plot IG 11	Molding	Blue and gray mottled lapis lazuli	Design of spirals; three drill marks; lateral perforation	1:4
14	PT6 19	Treasury, Room 48, Plot HG 11	Sheet fragment	Bronze, patinated	Lozenge design; pierced edges	1:4
15	PT6 217	Treasury, Room 51, Plot HG 02	Band	Bronze, patinated	Fluted; perforations for attachment	1:4
16	PT4 7	Treasury, Portico 18, floor near SE. doorway, Plot HG 63	Rod	Bronze, patinated; white (lead?) core	Semicircular cross section; pierced for attachment	1:4
17	PT6 586	Treasury, Courtyard 29, Plot IG 13	Flake	Light tan bone	Curved object with incised zigzag decoration along edge of one face	1:4
18	PT3 175	Garrison quarters, Room 11, Plot HG 76	Molding	Light cream-colored bone	Variant of ovolo molding	1:4
19	PT6 399	Treasury, Courtyard 29, Plot IG 03	Two rods	Cream-colored bone	One rod (a) has partly black-incrusted zigzag decoration on one face and depressions suggesting outlines of lions' paws on adjacent face; the other rod (b) has black-incrusted zigzag decoration on two opposite faces	1:4
20	PT5 11	Treasury, Corridor 31, Plot HG 40	Knob	White chalk(?)	Carved 12-petaled rosette on top; row of depressions and grooves	1:4
21	PT3 84	Garrison quarters, Room 16, Plot HG 86	Knob	Cream-colored ivory or bone	Incised groove at neck	1:4
22	PT7 15	Council Hall, Room 19a, SE. corner, Plot HE 46	Band	Bronze, patinated	Decorated with row of 12-petaled rosettes; bronze nails along one edge; partly reconstructed	1:4
23	PT7 76	Apadana, Room 10, in burned debris, Plot HE 23	Molding	Bronze, patinated	Depression with scalloped outline (partly reconstructed)	1:4
24	PT7 121	Apadana, Room 10, in burned debris, Plot HE 23	Molding	Bronze, patinated	Heavy angular fragment; two depressions with scalloped outline	1:4
25	PT5 60	Throne Hall, portico, floor, Plot GF 33	Sheet	Bronze, patinated	Remains of two slightly raised star patterns; nail holes	1:8
26	PT5 814	Throne Hall, portico, .25 above floor, Plot GF 30	Knob	Bronze, patinated	Hollow, suggesting doorknob, but no lateral perforation for fastening	1:4
27	PT5 835	Palace D, W. room below building, Plot IF 11	Wall(?) peg	Blue composition	Disk with remnants of one rectangular and one cylindrical process	1:4
28	PT6 167	Treasury, Vestibule 50, in N. doorway, 1.75 above sill	Bar	Bronze, patinated	Scroll pattern on broad end of tapering object	1:4
29	PT5 510	Doubtful (Palace D?)	Furniture(?) element	Bronze, patinated	Design of rosettes and knobs, perforation, two dowels	1:4
30	PT5 779	Treasury, Room 43, Plot HF 35	Angle brace	Iron, oxidized	Nails through both faces	1:4
31	PT4 1079	Throne Hall, portico, Plot GF 31	Clamp(?) fragment	Bronze, patinated	Flutes on face	1:4
32	PT4 1100	Throne Hall, portico, Plot GF 30	Furniture(?) element	Bronze, patinated	Two sides vertically fluted, one side horizontally fluted, fourth side plain; perforation through broad sides	1:8
33	PT6 67	Treasury, Room 46, near floor, Plot HF 27	Casing fragment	Bronze, patinated	Rivets through overlapping sides	1:8
34	PT6 346	Treasury, Hall 62, floor, Plot IF 18	Socket	Bronze, patinated	Perforation through two opposite sides; base flanges pierced; two overlapping sides riveted	1:8
35	PT7 6	Apadana, S. courtyard, Plot HE 52	Ornamental nail	Bronze, patinated	Unit of door(?) ornamentation	1:4
36	PT6 648	Treasury, Room 83, in S. doorway, Plot IG 25	Ornamental nail	Iron, oxidized	Unit of door(?) ornamentation	1:4
37	PT6 638	Treasury, Room 83, Plot IG 25	Ornamental nail	Yellow gold; bronze, patinated	Concavo-convex gold head, bronze shaft	1:4
38	PT6 53	Treasury, Vestibule 50, Plot HG 11	Ornamental nail	Yellow gold; bronze, patinated	Gold-capped plano-convex head, plain bronze shaft	1:4
39	PT5 836	Palace D, W. room below building, Plot IF 11	Ornamental rivet?	Yellow gold; bronze, patinated	Gold head in form of 12-petaled rosette, tubular bronze shaft	1:4
40	PT4 227	Treasury, Room 24, near N. doorway, Plot HG 72	Ornamental nail	Light gray silver; bronze, patinated	Silver-capped circular head, plain shaft of bronze with square cross section	1:4
41	PT7 140	Apadana, Room 19, floor, Plot HE 32	Ornamental nail	Yellow gold	Plano-convex head	1:4
42	PT5 348	Treasury, Hall 38, refuse	Ornamental tack	Yellow gold	Square cross section, convex head	1:4
43	PT6 391	Treasury, Courtyard 29, Plot IG 02	Ornamental nail	Purplish-gray silver	Square cross section, plano-convex head	1:4
44	PT7 131	Apadana, main hall, Plot HE 13	Ornamental nail	Bronze, patinated	Semiglobular head	1:4



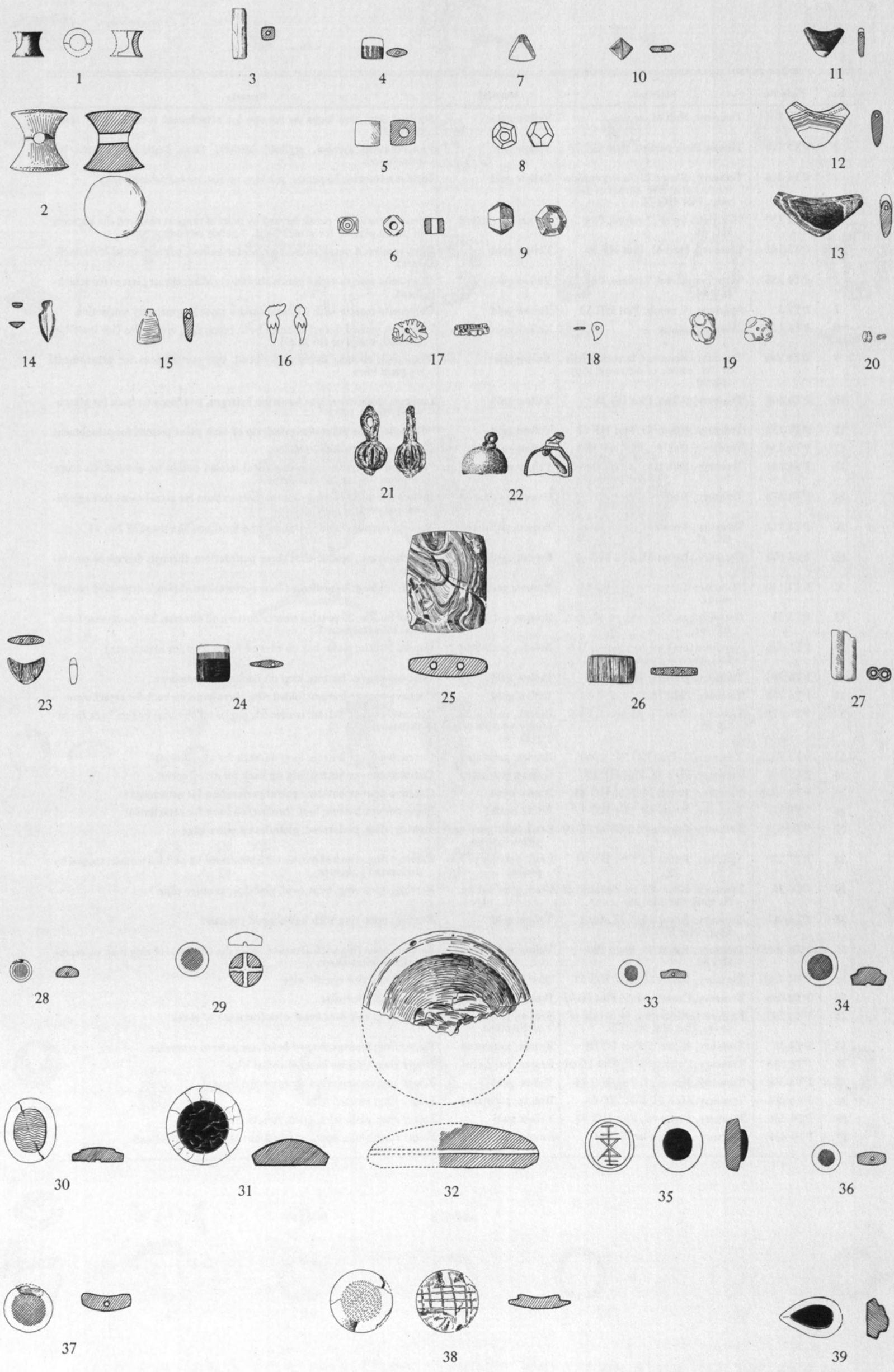
MISCELLANEOUS ORNAMENTAL OBJECTS

No.	Field No.	Find-Spot	Material	Remarks
1	PT5 89	Throne Hall, portico, Plot GF 32, NE. corner	Blue lapis lazuli	Couchant bovine; two grooves on base, incomplete lengthwise perforation
2	PT5 651	Treasury, Hall 38, at S. wall, Plot HF 47	Mottled green and gray serpentine	Hawk pendant; traces of red with yellow center in eye sockets, ring on back
3	PT6 443	Treasury, Vestibule 76, floor, Plot IG 22	White frit with greenish-gray edge at top	Egyptian sacred eye; perforated
4	PT6 313	Treasury, Room 56, Plot HF 77	Yellow gold	Ring of connected globules; four (of ten?) units preserved. Scale, 1:1
5	PT6 376	Treasury, Corridor 69, at N. wall, Plot IF 29	Yellow gold	Bottle-shaped pendant; ring on top, ribs with minute granules radiating from spheroid base. Scale, 1:1
6	PT6 435	Treasury, Hall 73, NW. corner, Plot IF 29	Yellow gold	Pendant; three triangles composed of minute granules decorate inverted conoid base; upper part composed of loops topped by cap and ring. Scale, 2:1
7	PT3 280	"Garrison Street," Plot HG 95, center E.	Yellow gold	Short cylindrical bead; composed mainly of small globules in two sizes. Scale, 2:1
8	PT6 117	Treasury, Hall 41, Plot HF 68	Yellow gold, light yellow frit, blue lapis lazuli	Composite globular pendant; alternating frit and lapis lazuli segments; top with suspension ring, base, and radiating divisions consist of gold; three lapis lazuli segments and traces of frit segments preserved. Scale, 1:1
9	PT6 651	Treasury, Room 83, in E. doorway, Plot IG 25	Yellow gold, green turquoise, blue lapis lazuli	Composite globular bead; alternating turquoise and lapis lazuli segments; gold dividing walls and central cylinder ending in truncated conoid caps. Scale, 1.5:1
10	PT4 544a	Treasury, Room 33, surface layer, Plot HG 41, SE. corner	Yellow gold, blue-green turquoise, yellow stone	Composite oval; two suspension rings, frame, and dividing walls of gold; lunate yellow stone inlay; turquoise fills half of rest, inlay of second half missing. Scale, 1:1
11	PT5 128	Treasury, Room 40, Plot HG 22	Frit	Oculate ring bead; purplish-red eye dots flush with surface, gray lines, white ground
12	PT4 432	Treasury, refuse, Plot IG 14, N. center	Frit	Oculate spheroid bead; white eye rings, rest light yellowish brown
13	PT3 394	Treasury, refuse, Plot HG 84	Yellow gold	Bead; segmented cylinder attached to globe with 6-petaled rosette of granules at bottom
14	PT4 456	Treasury, Room 33, Plot HG 41	Red-brown carnelian	Spheroid bead; three sets of white etched concentric circles
15	PT3 381	Treasury, Room 11, Plot HG 73	White and black onyx, polished	Spheroid bead
16	PT4 223a	Treasury, Room 23, Plot HG 51	Green glass	Spheroid bead; wheel-cut(?) facets; 8-petaled rosette on flattened side
17	PT6 720	Treasury, refuse	Red-brown carnelian	Biconvex bead; white rays etched on either face. Scale, 1:1
18	PT4 807	Treasury, Room 33, floor, Plot HG 41	Pink quartz	Biconvex bead
19	PT6 340	Treasury, Room 59, in niche formed by blocked doorway, Plot HG 90	Yellow gold	Biconoid bead; hollow
20	PT4 926	Treasury, Room 33, floor, Plot HG 42	Banded black and white translucent onyx, polished	Oblong bead
21	PT4 559	Treasury, Room 33, Plot HG 41	Banded brown and white translucent onyx	Oblong bead; remnant of patinated bronze wire in perforation
22	PT3 382	Treasury, Room 11, floor, Plot HG 73	Banded dark brown and white translucent onyx, polished	Oblong bead
23	PT6 193	Treasury, Vestibule 50, Plot HG 01	Green turquoise, polished	Oblong bead
24	PT4 21e	"Garrison Street," in niche of Treasury enclosure, Plot IG 05	Dark purplish-red translucent amethyst	Oblong bead, hexagonal cross section
25	PT6 332e	Treasury, Room 57, Plot HF 87	Brown-red translucent carnelian	Oblong bead, triangular cross section
26	PT6 29	Treasury, Room 48, Plot HG 10	Creamy-white chalk	Barrel bead
27	PT4 286	Treasury, Ramp 25, Plot HG 73	Yellow gold	Barrel bead; hollow, crushed; vague incised design
28	PT4 100	Treasury, Portico 19, Plot HG 52	Brown baked clay, smooth	Barrel bead; eight flutes, lengthwise perforations through center and eight ridges
29	PT5 138	Treasury, Room 39, Plot HF 49	White and light brown chalk(?), polished	Barrel bead; fluted
30	PT6 69	Treasury, Hall 41, Plot HF 58	Dark bluish-green translucent glass	Barrel bead; fluted
31	PT6 657	Treasury, Room 83, Plot IG 25	Grayish-blue lapis lazuli	Barrel bead; collared, fluted body. Scale, 1:1
32	PT6 98	Treasury, Vestibule 50, Plot HG 01	Mottled maroon and white calcareous stone	Barrel bead; collared
33	PT5 803	Treasury, Hall 38, fill of niche in S. wall, Plot HF 47	Pink calcareous stone	Hemispheroid bead
34	PT5 62	Throne Hall, portico, Plot GF 35	Purple translucent amethyst	Plano-convex bead
35	PT6 10	Treasury, Room 48, Plot HG 11	Orange-red translucent carnelian, highly polished	Plano-convex bead
36	PT7 125	Apadana, Room 10, floor, Plot HF 24	Light yellow-brown frit	Scaraboid bead; radiating lines incised on base
37	PT4 493	Treasury, Courtyard 29, Plot HG 93	Greenish-blue turquoise	Conoid bead; pierced obliquely
38	PT4 560	Treasury, Room 33, Plot HG 41	Grayish-brown shell	Conoid bead; pierced base of natural shell
39	PT5 2	Treasury, Corridor 31, Plot HG 40	Opaque red glass with green spots	Pear-shaped bead
40	PT3 250	Garrison quarters, Yard 21, Plot HG 76	Dark red stone	Drop-shaped pendant
41	PT5 173	Throne Hall, portico, Plot GF 24, NE.	Yellow amber with dark veins, polished	Discoid bead
42	PT6 257	Treasury, Hall 41, floor, Plot HF 77	Yellow gold	Discoid bead; hollow, crushed, form reconstructed
43	PT5 6	Throne Hall, portico, Plot GF 25	Opaque red glass with green surface	Discoid bead or inlay; beveled sides
44	PT5 281	Treasury, Hall 41, Plot HF 59	Yellow gold	Two connected rings, one projection on each
45	PT6 204	Treasury, Room 51, Plot HG 02	Glass with green and light blue iridescence	Annulate bead, rectangular cross section
46	PT5 652	Treasury, Hall 38, Plot HF 48	Opaque red glass with light and dark green surface	Annulate bead
47	PT6 393	Treasury, Courtyard 29, Plot IG 03	Blue lapis lazuli, polished	Cylindrical bead
48	PT3 307	"Garrison Street," Plot HG 75	Greenish-blue composition	Cylindrical bead
49	PT4 813	Treasury, Room 33, floor, Plot HG 41	Green turquoise with dark specks, polished	Cylindrical bead; silver wire with purplish-gray patina in perforation
50	PT7 369	Treasury, Room 88, imbedded in W. wall	Black bitumen?	Cylindrical bead(?); incised zigzag design
51	PT4 139	"Garrison Street," Plot IG 16	Orange coral	Pendant; solid cylinder tied to patinated bronze wire
52	PT3 20	Garrison quarters, Yard 20, Plot HG 86	Yellow gold	Cylindrical bead; parallel rows of granulations, additional perforation through center of short axis
53	PT4 978	Treasury, Hall 38, Plot HG 22	Bluish-green glass	Cylindrical bead, hexagonal cross section
54	PT4 319	Treasury, Room 8, NW. corner, Plot HG 83	Yellow gold	Double semicylindrical bead; ribbed



BEADS AND PENDANTS (SEE TABLE III). SCALE, 1:2 UNLESS OTHERWISE NOTED

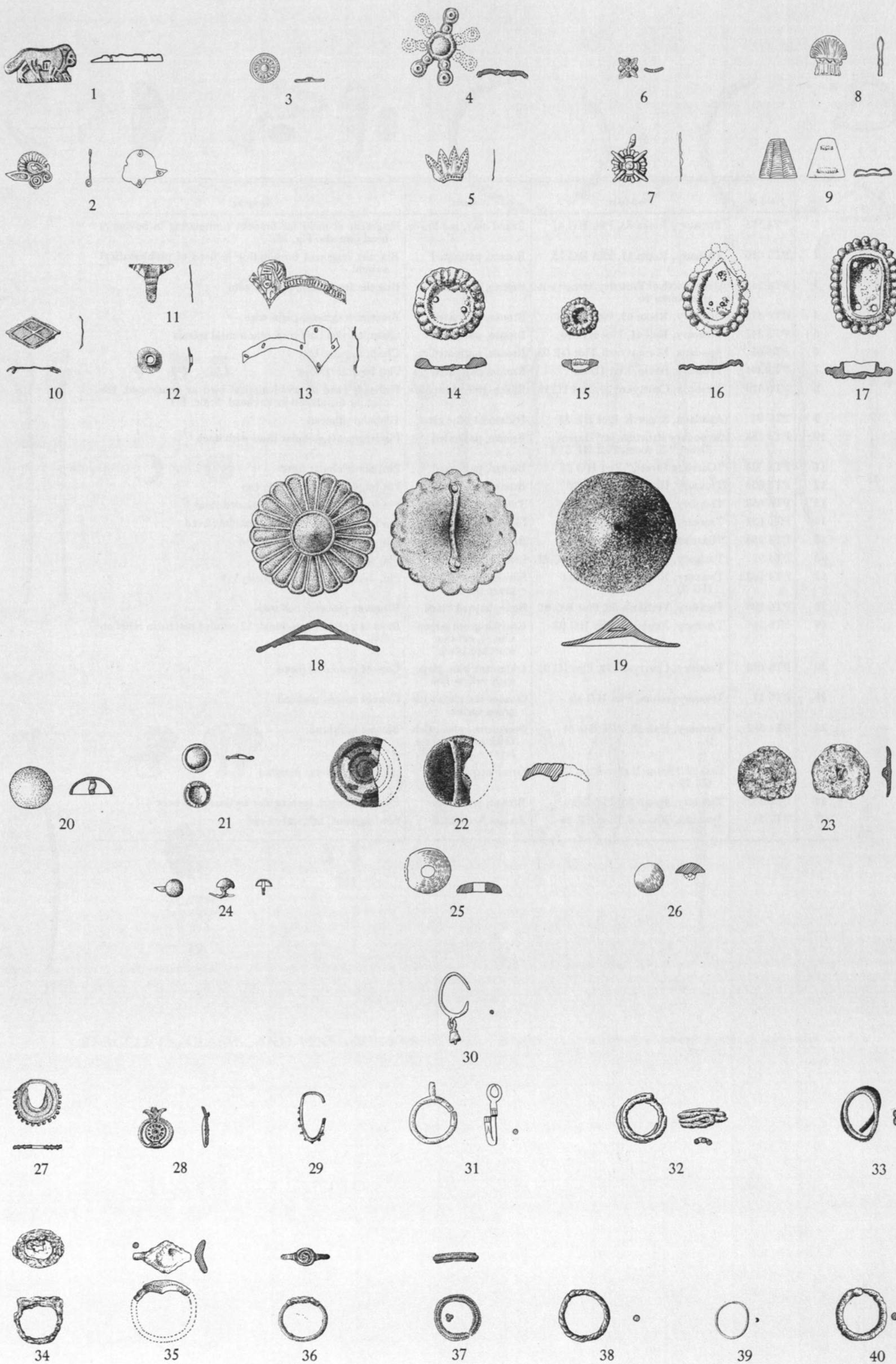
No.	Field No.	Find-Spot	Material	Remarks
1	PT6 363	Treasury, Hall 62, Plot HG 90	Opaque red glass	Spool-shaped bead
2	PT6 138	Treasury, Room 47, Plot HG 10	Opaque red glass with green surface	Spool-shaped bead; perforated through short axis
3	PT6 436	Treasury, Hall 73, near NE corner, Plot IG 21	White calcareous stone, polished	Oblong bead, rectangular cross section
4	PT3 35	Garrison quarters, Alcove 10, Plot HG 86	Dark red-brown and grayish-white translucent sardonyx(?)	Rectangular bead, elliptical cross section
5	PT4 71	Treasury, Portico 19, Plot HG 52	Cream-colored stone, smooth	Cubical bead
6	PT5 282	Treasury, Hall 41, Plot HF 59	Cream-colored stone	Cubical bead; centered circlet in relief on four sides, traces of red paint
7	PT4 229	"Garrison Street," refuse, Plots HG 34 and 44	Red-brown translucent carnelian	Pyramidal bead
8	PT3 287	Treasury, Room 3, Plot HG 95	Dark blue lapis lazuli	Bipyramidal bead, faceted, pentagonal plan
9	PT5 649	Treasury, Hall 38, Plot HF 36	Dark green stone, polished	Bipyramidal bead, faceted, hexagonal plan
10	PT6 407g	Treasury, Courtyard 29, Plot IG 03	Red-brown translucent carnelian	Quadrangular bead, flat
11	PT6 696	Treasury, Hall 73, Plot IG 30	Brown and white translucent onyx, polished	Lunate-triangular bead
12	PT3 80	Garrison quarters, Alcove 10, floor, Plot HG 86	Banded red-brown and smoky-white translucent agate, polished	Lunate-triangular bead; perforation angular and parallel to upper edge
13	PT6 4	Treasury, Room 47, Plot HG 10	Banded red-brown, yellowish-brown, and white translucent agate, highly polished	Lunate-triangular bead; perforation like that of No. 12
14	PT6 603	Treasury, Courtyard 29, Plot IG 03	Red-brown translucent carnelian, polished	Dagger-shaped pendant; medial ridge on convex face
15	PT5 783	Treasury, Hall 38, Plot HF 36	White translucent agate with light gray bands, polished	Celt-shaped pendant
16	PT3 105	Eastern fortification, Moat 28, Plot HG 89	Light yellow frit	Bud-shaped pendant; fragmentary
17	PT5 702	Treasury, Hall 38, Plot HF 29	Light bluish-green turquoise	Serrated bead
18	PT4 57	Treasury, Room 13, Plot HG 53	Bluish-green turquoise	Ovoid bead, flat
19	PT5 245	Throne Hall, portico, Plot GF 25, NW	Purple amethyst	Oval bead; three knobs, evenly spaced, at each end
20	PT4 239	"Garrison Street," refuse, Plot HG 34	Yellow gold	Bead or spacer; two ovals connected side by side
21	PT3 226	Garrison quarters, Yard 20, Plot HG 97	Bronze, patinated	Bell pendant; oval, slotted, with suspension ring
22	PT6 210	Treasury, Room 51, floor, Plot HG 02	Bronze, patinated	Bell pendant; spheroid, with suspension ring; clapper attached to ring
23	PT6 273	"Garrison Street," refuse, Plot HG 02	Orange translucent carnelian	Lunate spacer; two perforations
24	PT6 677Gb	Treasury, Hall 73, Plot IG 20	Banded black, grayish-brown, and white translucent onyx	Rectangular spacer, elliptical cross section; two perforations
25	PT6 454a	Treasury, Room 81, floor, Plot IG 33	Mottled gray and light gray translucent agate	Rectangular spacer, roughly elliptical cross section; two perforations
26	PT6 677Ga	Treasury, Hall 73, Plot IG 20	Brown-red translucent carnelian	Rectangular spacer; five perforations
27	PT4 794	Treasury, Room 33, Plot HG 41	Banded white, gray, and orange agate(?)	Double cylindrical spacer; two perforations
28	PT6 402	Treasury, Courtyard 29, Plot IG 03	Red and white sardonyx, top polished	Eye stone; plano-convex, circular; diametric perforation
29	PT6 417	Treasury, Courtyard 29, Plot HG 92	Brown and white onyx, top polished	Eye stone; plano-convex, circular; beveled side, unperforated, cross-shaped groove in base
30	PT4 886	Treasury, Room 33, floor, Plot HG 41	Dark gray and white onyx, top polished	Eye stone; plano-convex, oblong; gray part raised, unperforated, groove in base
31	PT4 955	Treasury, Room 33, floor, Plot HG 42	Dark brown and white onyx, top polished	Eye stone; plano-convex, circular; beveled side, unperforated
32	PT5 502	Treasury, refuse, Quadrant HG	Dark gray and white onyx, top polished	Eye stone; plano-convex, circular; diametric perforation
33	PT6 455	Treasury, Room 81, Plot IG 33	Dark brown and white onyx, top polished	Eye stone; plano-convex, circular; brown part raised, diametric perforation
34	PT4 903	Treasury, Room 33, Plot HG 41	Brown and bluish-white onyx, top polished	Eye stone; plano-convex, circular; brown part raised, beveled side, unperforated, groove in base
35	PT3 69	Garrison quarters, Room 16, Plot HG 86	Dark brown and white onyx	Eye stone; plano-convex, circular; brown part raised, beveled side, unperforated, symbol incised in base
36	PT6 347	Treasury, Hall 62, Plot IF 18	Brown and white onyx, one face polished	Eye stone; biconvex, circular; diametric perforation
37	PT6 389	Treasury, Courtyard 29, Plot IG 02	Brown and white onyx, polished	Eye stone; concavo-convex, circular; diametric perforation
38	PT6 33	Treasury, Hall 41, Plot HG 70	Orange and bluish-white sardonyx(?)	Eye stone; concavo-convex, circular; orange part raised, unperforated, incised checkerboard pattern on base
39	PT4 906	Treasury, Room 33, floor, Plot HG 41	Black and bluish-white onyx, top polished	Eye stone; plano-convex, ovate; black part raised, beveled side, unperforated



BEADS, PENDANTS, SPACERS, AND EYE STONES (SEE TABLES III-IV). SCALE, 1:2

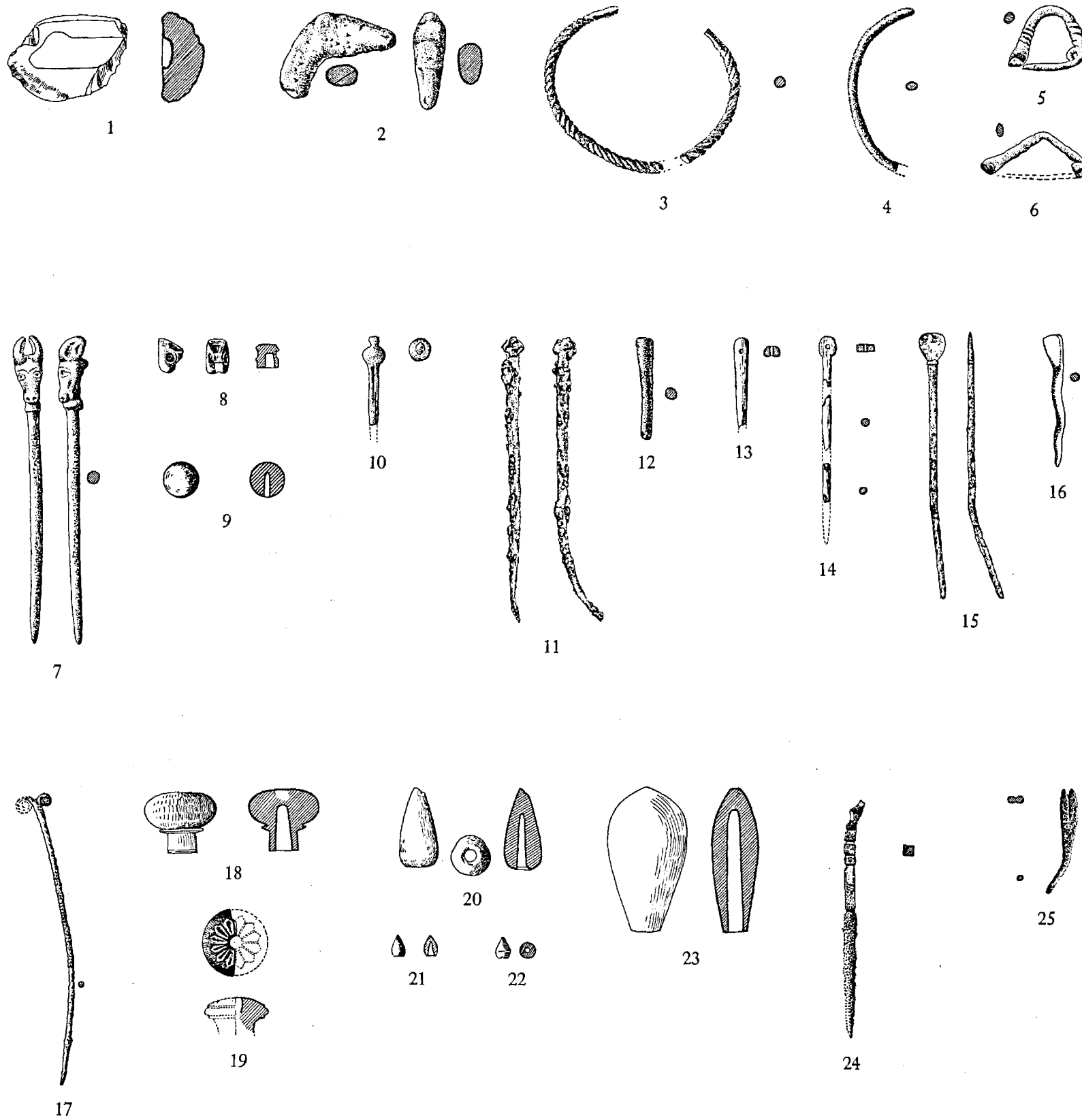
No.	Field No.	Find-Spot	Material	Remarks
1	PT6 704	Treasury, Hall 41, refuse	Yellow gold	Stylized lion; two loops on reverse for attachment (see also Fig. 14A). Scale, 1:1
2	PT5 114	Throne Hall, portico, Plot GF 31	Yellow gold	Problematical symbol, stylized bird(?); three loops on reverse for attachment
3	PT4 514	Treasury, Room 22, in depression for socket at SW. corner of doorway, Plot HG 71	Yellow gold	Solid rosette with 16 petals; one loop on reverse for attachment
4	PT4 150	"Garrison Street," refuse, Plot HG 44	Bronze, patinated	Open rosette with 7 petals formed by pairs of tangent centered circles; ends of petals pierced for attachment, 4 petals reconstructed
5	PT5 142	Treasury, Hall 41, Plot HF 59	Yellow gold	Open rosette, 4 petals preserved; center hollow, edges pierced for attachment
6	PT4 238	"Garrison Street," refuse, Plot HG 34	Yellow gold	Composite rosette with 8 petals alternately alike; center pierced for attachment
7	PT7 3	Apadana, S. porch, Plot HE 52	Yellow gold	Composite rosette with 20 petals and 4 rays; fragmentary projection
8	PT4 1104	Treasury, refuse	Yellow gold	Palmette; incised design alike on both faces; flat, open sides (for insertion of band, strap, or the like?)
9	PT4 206	Treasury, Room 22, in socket hole at SW. corner of doorway, Plot HG 71	Yellow gold	Trapezoid; obverse fluted and ribbed, two perforations for attachment on plain back
10	PT6 668	Treasury, refuse, Plot IG 25	Yellow gold	Lozenge, subdivided into 4 smaller lozenges; two loops on back for attachment. Scale, 1.5:1
11	PT6 232	Treasury, Room 53, Plot HF 57	Yellow gold	"Triangle," one point elongated; tip of each point pierced for attachment
12	PT6 254	Treasury, Hall 41, Plot HF 58	Yellow gold	Disk; center raised and pierced
13	PT6 341	Treasury, Hall 62, Plot HG 90	Yellow gold	"Garland"; fragment; problematical incised design on obverse, six loops on plain reverse for attachment
14	PT4 473	Treasury, Room 33, Plot HG 51	Bronze, patinated	Brooch; circular; beaded rim; two perforations for attachment through depressed central part
15	PT4 912	Treasury, Room 33, floor, Plot HG 41	Bronze, patinated	Brooch; circular; beaded rim; two perforations like those of No. 14
16	PT4 592	Treasury, Room 33, Plot HG 42	Bronze, patinated	Brooch; ovate; beaded rim; three perforations through depressed central part
17	PT4 149	"Garrison Street," Plot HG 44, refuse	Bronze, patinated	Brooch; oblong; beaded rim; four perforations through depressed central part
18	PT3 34	Garrison quarters, Alcove 10, Plot HG 86	Bronze, patinated	Conoid buckle; 20-petaled rosette pattern on obverse; bar on reverse forms loop for attachment
19	PT7 376	Northern tomb (of Artaxerxes II or III), floor of passage	Bronze, patinated	Conoid buckle; plain; bar on reverse forms loop for attachment
20	PT5 793	Treasury, Hall 38, Plot HF 46	Yellow gold	Concavo-convex button; loop on back for attachment
21	PT6 708	Treasury, Hall 73	Yellow gold	Concavo-convex button; folded rim; three loops on back for attachment
22	PT6 471	Treasury, Hall 73, Alcove a, Plot IG 40	Bronze, patinated, covered with yellow gold foil	Concavo-convex button; concentric circles on obverse; bar on back for attachment
23	PT3 265	Treasury(?), Plot HG 95, refuse	Bronze, patinated	Concavo-convex button; loop on back for attachment
24	PT5 107	Treasury, Hall 38, Plot HF 19	Bronze, patinated	Concavo-convex button; pin on back for attachment
25	PT4 1044	Treasury, Room 34, Plot HG 41	Brown bone	Concavo-convex button; central perforation for attachment
26	PT5 377	Treasury, Room 40, Plot HG 12	White chalk?	Plano-convex button; loop (broken) on back for attachment
27	PT6 628	Treasury, Courtyard 29, Plot IG 02	Lead, light gray and yellow patina	Earring; disk, perforated, globules on outer edge
28	PT7 118	Apadana, Room 12, Plot HE 34	Lead, grayish-yellow patina	Earring; ring attached to disk with impressed 12-petaled rosette, topped by perforated palmette
29	PT6 36	Treasury, Room 44, on remnant of N. wall, Plot HF 25	Lead, gray patina	Earring; open ring, bent oval, globules on outer edge
30	PT4 987	Treasury, Room 36, 1.35 above floor, Plot HG 32	Yellow gold	Earring; open ring with bell-shaped pendant
31	PT4 1065b	Treasury, Room 36, floor, Plot HG 32	Yellow gold	Earring; open ring with attached loop; the two ends of ring may represent stylized feline heads
32	PT4 1006	Treasury, Room 35, Plot HG 32	Bronze, patinated	Earring; spiraled double wire
33	PT6 630	Treasury, Courtyard 29, Plot IG 02	Bronze, patinated	Earring; spiraled wire
34	PT3 285	Eastern fortification, in debris of tower, Plot HG 98, NE.	Bronze, patinated; white stone	Finger ring; elliptical bezel with fragment of stone
35	PT4 38	Treasury, Room 5, Plot IG 04	Bronze, patinated	Finger ring; lozenge-shaped bezel, no pattern traceable
36	PT6 683	Treasury, Courtyard 29, Plot IG 01	Bronze, patinated	Finger ring; circular bezel of coiled wire
37	PT3 358	Treasury, Room 11, Plot HG 74	Yellow gold	Finger ring composed of three ribbed bands
38	PT5 258	Treasury, Hall 41, Plot HF 49	Bronze, patinated	Finger ring; twisted wire
39	PT6 356	Treasury, Room 64, Plot HG 91	Yellow gold	Finger ring; plain wire, open, lunate cross section
40	PT4 431	Treasury, refuse, Plot HG 81	Bronze, patinated	Finger ring; plain, open, one bulbous and one pointed end





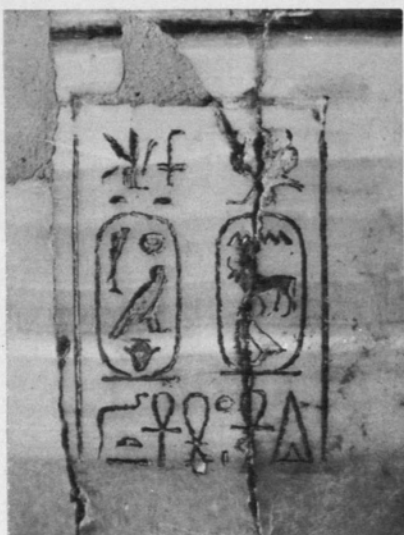
FABRIC ORNAMENTS, BUCKLES, BUTTONS, EARRINGS, AND FINGER RINGS (SEE TABLES V-VI)  
SCALE, 1:2 UNLESS OTHERWISE NOTED

No.	Field No.	Find-Spot	Material	Remarks
1	PT4 585	Treasury, Room 33, Plot HG 41	Baked clay, red-brown	Fragment of mold for bracelet terminating in bovine(?) head (see also Fig. 16)
2	PT3 410	Treasury, Room 11, Plot HG 73	Bronze, patinated	Bracelet fragment terminating in head of problematical animal
3	PT6 242	Street north of Treasury, trench outside Room 46	Bronze, patinated	Bracelet fragments; twisted wire
4	PT6 373	Treasury, Room 65, Plot IG 00	Bronze, patinated	Bracelet fragment; plain wire
5	PT5 342	Treasury, Hall 41, Plot HG 60	Bronze, patinated	Clasp; curved bow with ornamental spirals
6	PT5 65	Apadana, N. courtyard, Plot GE 03	Bronze, patinated	Clasp; angular bow
7	PT3 391	Treasury, refuse, Plot IG 05	Bronze, patinated	Pin; bovine(?) head
8	PT6 419	Treasury, Courtyard 29, Plot IG 11	Bluish-green turquoise	Pinhead; head of problematical bird or quadruped, triangular depression in forehead. Scale, 1:1
9	PT7 91	Apadana, S. porch, Plot HE 33	Iridescent blue glass	Globular pinhead
10	PT5 284	Secondary structure in "Harem Street," S. room, Plot HF 35	Bronze, patinated	Pin fragment; globular head with knob
11	PT3 303	"Garrison Street," Plot HG 75	Bronze, patinated	Pin; semiglobular head
12	PT5 804	Treasury, Hall 38, Plot HF 28	Bronze, patinated	Pin fragment; flat circular top
13	PT6 658	Treasury, Room 83, Plot IG 25	Tan bone	Pin fragment; perforated rounded head
14	PT6 652	Treasury, Room 83, Plot IG 25	Light tan bone	Pin fragments; perforated spatulate head
15	PT3 256	"Garrison Street," Plot HG 95	Bronze, patinated	Pin; spatulate head. Scale, 1:4
16	PT4 92	Treasury, Courtyard 17, Plot HG 52	Lead, gray patina	Pin; spatulate head
17	PT4 1033	Treasury, Room 35, floor, Plot HG 32	Silver-copper alloy, green patina	Pin; double-scroll head. Scale, 1:4
18	PT6 198	Treasury, Vestibule 50, Plot HG 01	Bone, burned black	Biconvex pinhead; collared
19	PT6 214	Treasury, Room 51, Plot HG 02	Grayish-green serpentine(?), exterior scorched black	Biconvex pinhead; collared, 12-petaled rosette in relief on top
20	PT6 684	Treasury, Courtyard 29, Plot IG 01	Iridescent blue glass with yellow film	Convex conoid pinhead
21	PT6 17	Treasury, refuse, Plot HG 10	Opaque red glass with green surface	Convex conoid pinhead
22	PT4 582	Treasury, Hall 38, Plot HG 31	Opaque red glass with thick green surface layer	Biconoid pinhead
23	PT4 1099	East of Throne Hall, refuse, Plot GF 79	Green serpentine	Inverted pyriform pinhead
24	PT6 457	Treasury, Room 83, Plot IG 15	Bronze, patinated	Pin; segmented, rectangular sections, top bent
25	PT7 51	Apadana, Room 6, Plot HE 26	Bronze, patinated	Pin fragment; bifurcate head

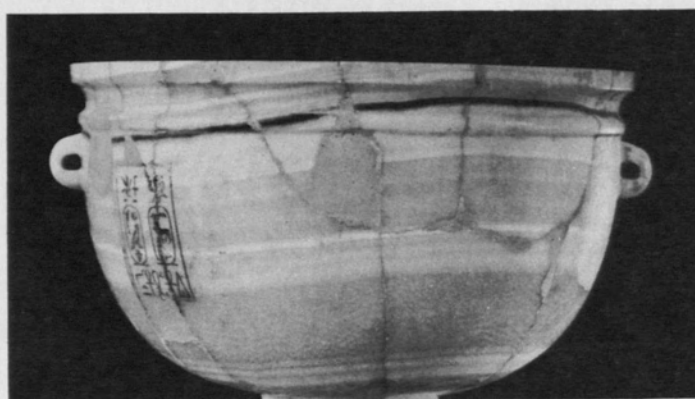


BRACELETS, CLASPS, AND PINS (SEE TABLE VII). SCALE, 1:2 UNLESS OTHERWISE NOTED

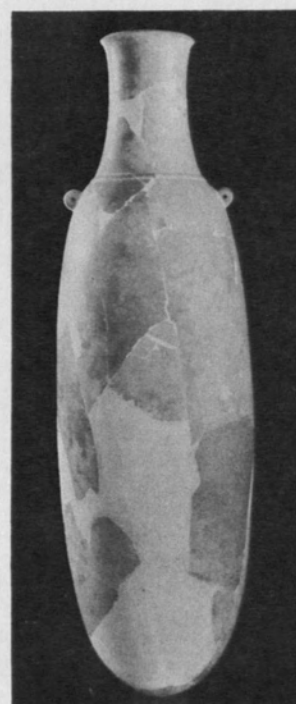
No.	Field No.	Find-Spot	Form	Material	Remarks	Scale
1	PT5 103	Hall 41, Plot HG 50, center S., near surface	Bowl	Banded creamish-yellow, white, and gray translucent alabaster, polished	Incised cartouches of Nekau. Left handle and parts of body restored, base missing; see also Pl. 48:2	<i>a</i> , 1:1 <i>b</i> , 1:3
2	PT5 622	Hall 41, Plots HG 50, center W., and HF 59, SW.	Bottle	Dark and light shades of blue composition, polished	Right lug handle and parts of body restored. Beveled rim, ridge on shoulder, pointed bottom; see also Pl. 48:3	1:8
3	PT4 1070	Hall 38, Plot HG 21, SW. corner	Vessel stand?	Creamish-tan translucent alabaster, obverse polished, reverse roughened by striations	Incised cartouche of Amasis, traces of blue paint between hieroglyphs and red on lowest character; see also Pl. 48:5	3:4
4	PT5 817	Hall 38, floor, Plot HF 37, near center	Plate	Cream and white translucent alabaster	Body and handles (one certain) restored, base uncertain. Incised cartouches of Amasis on rim top; see also Pl. 48:6	<i>a</i> , 1:1 <i>b</i> , 1:4
5	PT6 27	Hall 41, Plot HF 68, SE.	Lid	Banded yellow, white, and brown calcareous stone	Fragmentary incised cartouche of Amasis	3:4
6	PT4 416	Corridor 31, Plot HG 50, near center	Jar	Cream-colored alabaster	Incised hieroglyphs; see also Pl. 48:7	3:4
7	PT5 52 and 217	Hall 38, scattered in Plots HF 29 and HG 12, 20, 30	Composite vessel (or vessels)?	Yellowish-cream translucent alabaster, exterior polished	Cosmetic bottles with solid stem fractured at end ( <i>a-b</i> ); fragment with lion's head above lug handle ( <i>c</i> ); fragment bearing incised cartouche of Amasis ( <i>d-e</i> ), with projection which was once joined to another vessel; see also Pl. 48:8	<i>a-d</i> , 1:3 <i>e</i> , 3:4



1a



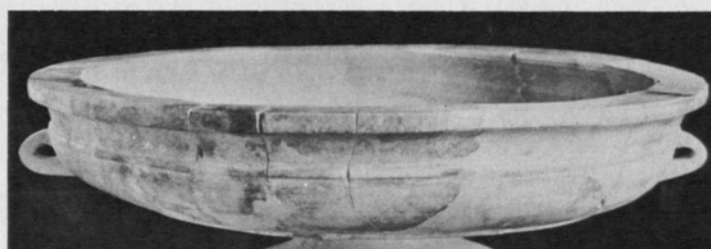
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2



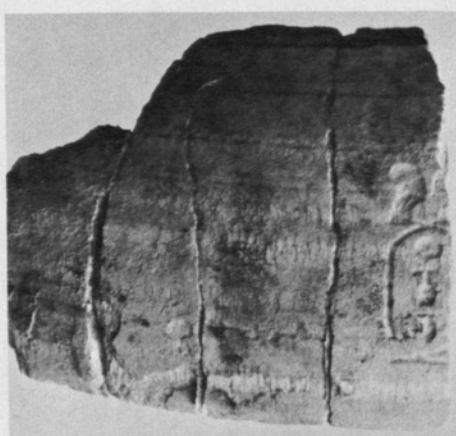
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4b



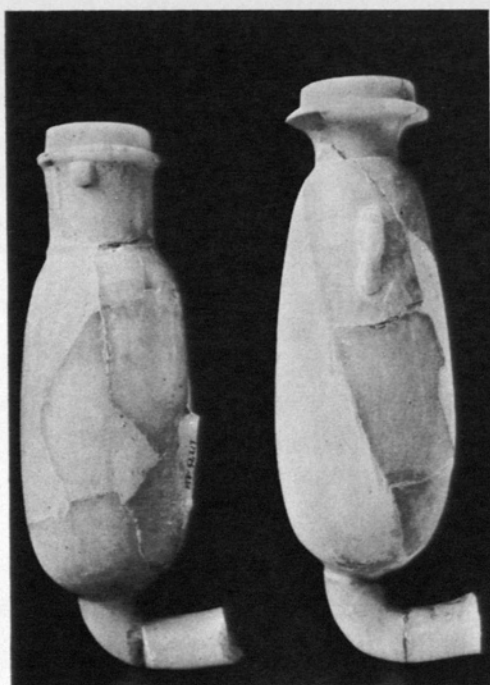
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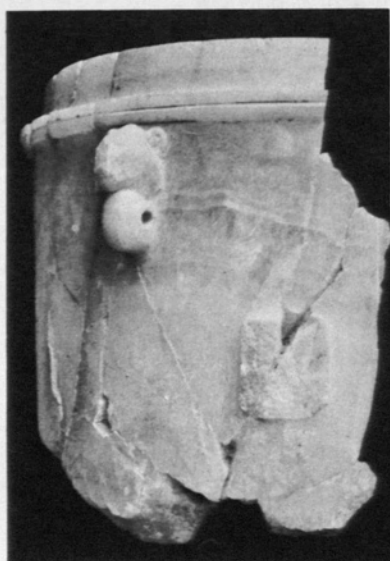


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7a

7b



7c



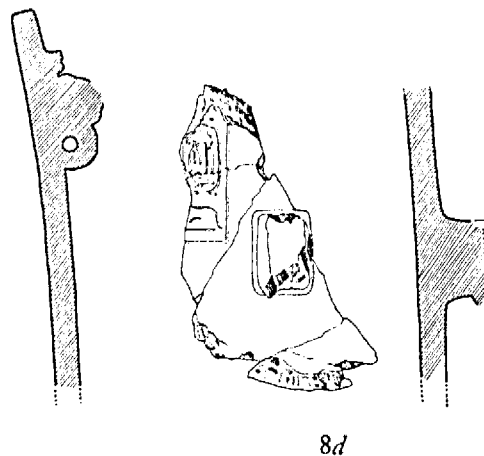
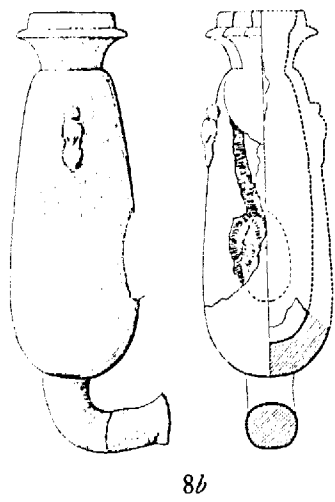
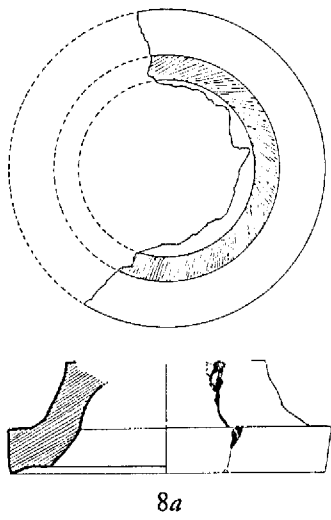
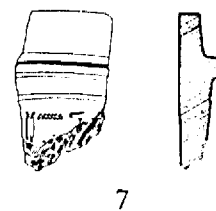
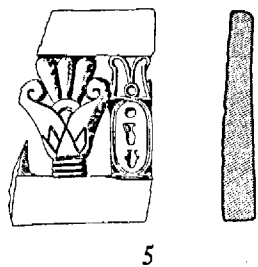
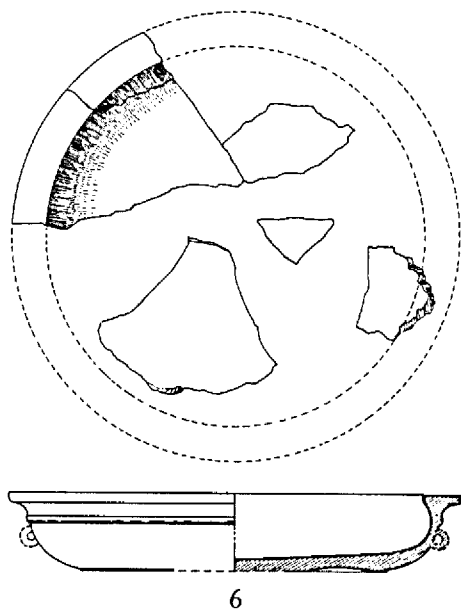
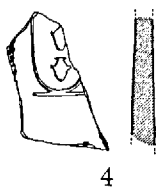
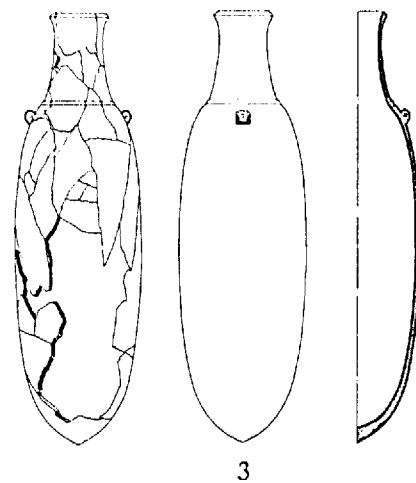
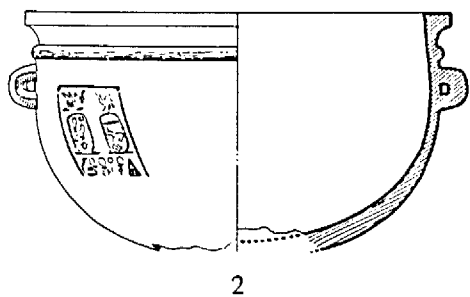
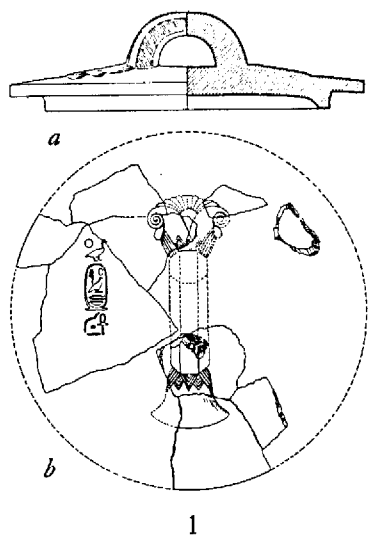
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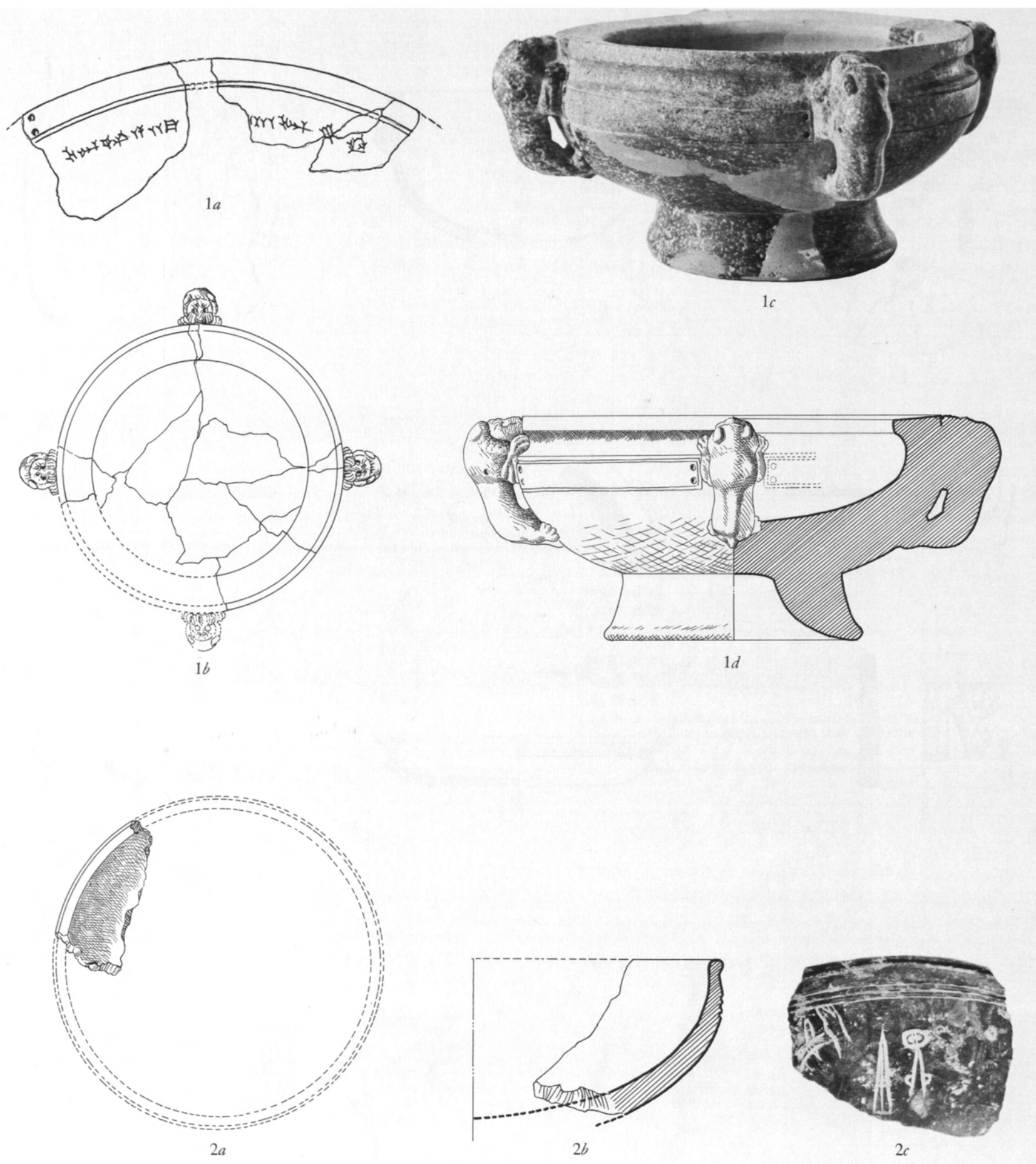
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PRE-ACHAEMENID EGYPTIAN VESSELS OF STONE AND COMPOSITION, FROM THE TREASURY

No.	Field No.	Find-Spot	Material	Remarks	Scale
1	PT6 183 and 245	Hall 41, Plots HF 68, center E., and IIF 69, SW. and center N.	Gray, cream, and brown calcareous stone, polished	Lid with incised cartouche of Psamtik; lotus and papyrus symbols in relief at upper and lower ends (on drawing <i>b</i> ) of handle. Reconstructed cross section and top view	1:4
2	PT5 103			See Pl. 47:1	1:4
3	PT5 622			See Pl. 47:2	1:12
4	PT5 739	Hall 38, Plot HF 29, center N.	Light tan translucent alabaster, ex- terior polished	Fragment with part of incised cartouche of Amasis	1:4
5	PT4 1070			See Pl. 47:3	1:4
6	PT5 817			See Pl. 47:4	1:6
7	PT4 416			See Pl. 47:6	1:4
8	PT5 52 and 217			See Pl. 47:7. Drawings of base ( <i>a</i> ), cosmetic bottle ( <i>b</i> ), frag- ment with lion's head ( <i>c</i> ), fragment with cartouche of Amasis ( <i>d</i> )	1:4



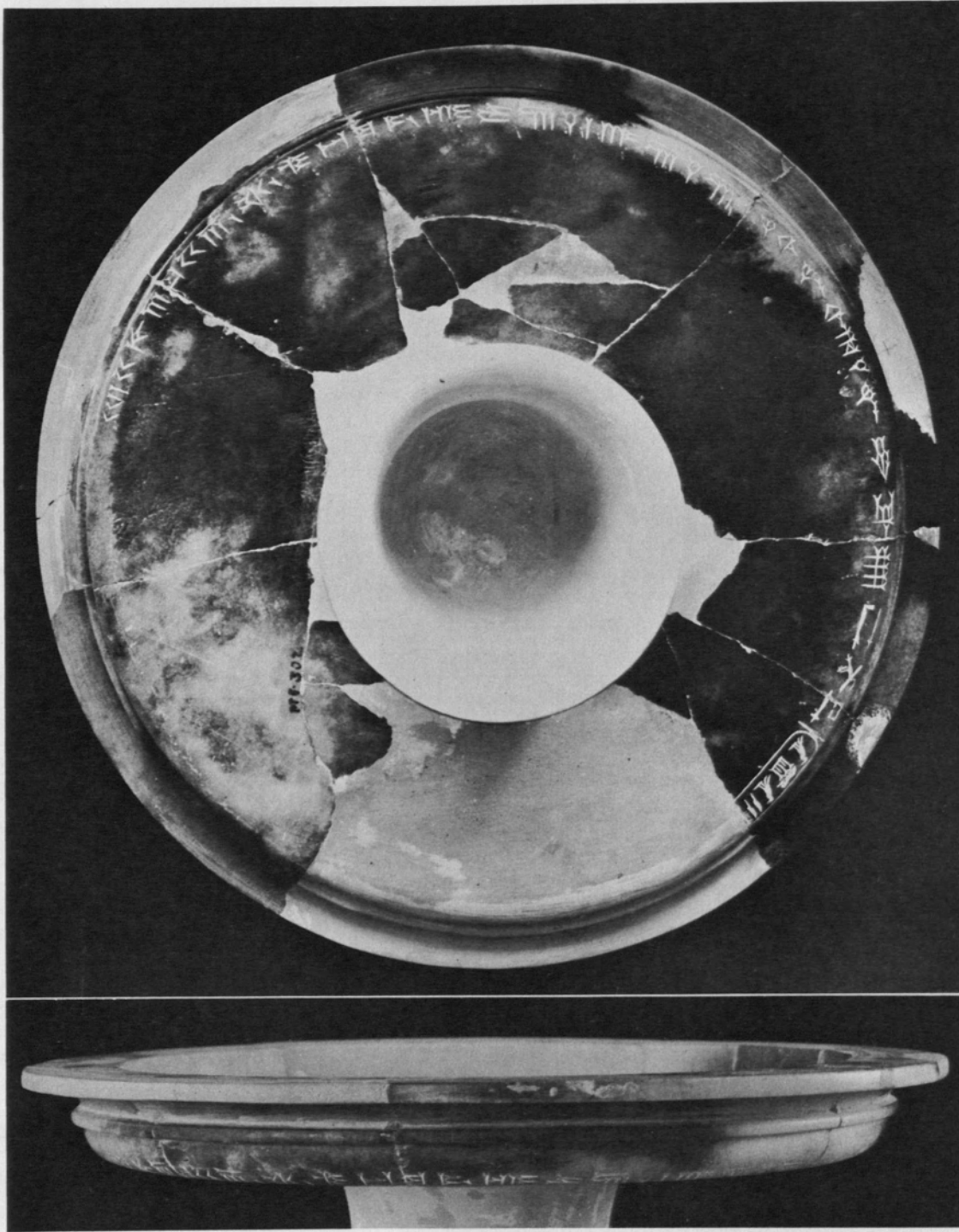
PRE-ACHAEMENID EGYPTIAN VESSELS OF STONE AND COMPOSITION, FROM THE TREASURY



STONE BOWL OF ASHURBANIPAL AND STONE SHERD WITH HITTITE INSCRIPTION, FROM THE TREASURY

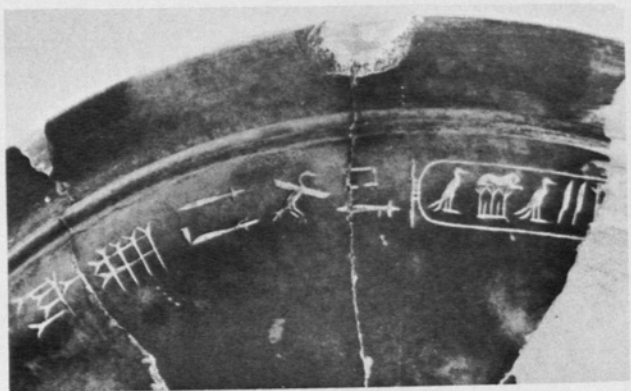
No.	Field No.	Find-Spot	Form	Material	Remarks	Scale
1	PT4 368, PT5 156 and 244	Corridor 31, Plot HG 50, SE. corner; Hall 41, Plots HG 40, 1-1.50 above floor, HF 59, W. center, HF 69, S. center	Footed bowl	Black and white speckled granite(?) with yellowish-brown patches, polished	Incised cuneiform inscription of Ashurbanipal on exterior body; four lion handles	a, ca. 1:2 b, 1:3 c-d, 1:2
2	PT6 246	Hall 41, Plot HF 69, cen- ter S.	Bowl	Red and bluish-gray mottled hema- tite, polished, metallic luster	Incised Hittite hieroglyphs on exterior	a, 1:2 b-c, 3:4





INSCRIBED STONE PLATE OF XERXES (PT5 302; SEE PLS. 51:1, 52:1), FROM THE TREASURY. FOOT AND PARTS OF BODY RESTORED. BOTTOM AND SIDE VIEWS. SCALE, 1:2

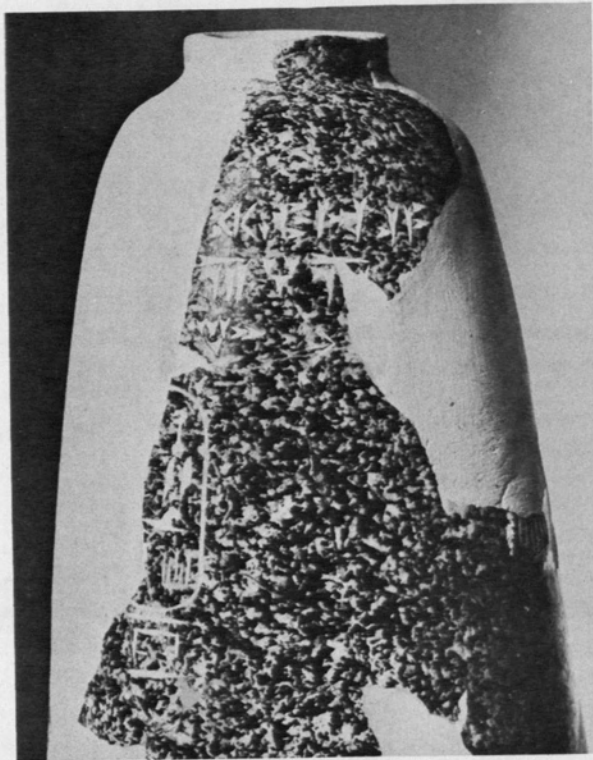
No.	Field No.	Find-Spot	Form	Material	Remarks	Scale
1	PT5 302	Hall 41, NE. corner, floor, Plot HG 40	Footed plate	Cream, brown, and black (scorched) translucent calcareous stone, polished	Close-up of part of incised quadrilingual inscription of Xerxes on exterior; see also Pls. 50 and 52:1	3:4
2	PT5 303 and 305	Hall 41, NE. corner, floor, Plot HG 40 and NW. corner of Plot HG 50	Footed plate	Cream, brown, and gray translucent calcareous stone, polished	Incised quadrilingual inscription as on No. 1 (see Pl. 50). Parts of body and lower foot restored; side view and close-up of part of inscription; see also Pl. 52:2	<i>a</i> , 1:2 <i>b</i> , 3:4
3	PT4 306	Corridor 31, floor, Plot HG 71, center S.	Bottle	Dark gray and white speckled granite, highly polished	Quadrilingual inscription as on No. 1 (see Pl. 50), but modified and arranged differently; incised projection. Part of body restored; close-up of inscription and side view; see also Pl. 52:4	<i>a</i> , <i>ca.</i> 3:4 <i>b</i> , 1:2
4	PT5 307	Hall 41, floor, Plot HF 49, center S.	Plate	Bluish-green composition, hard, glasslike, smooth	Incised Egyptian inscription of Xerxes and beginning of his name in OP, probably part of quadrilingual inscription as on No. 1 (see Pl. 50). Close-up of inscription; see also Pl. 52:7	1:1
5	PT6 483	Hall 41, Plots HF 77 and HG 60	Footed bowl with two handles	Dark gray and white speckled granite, polished	Incised inscription, presumably quadrilingual as on No. 1 (see Pl. 50). Parts of body, one handle and half of second restored; side view; see also Pl. 52:3	1:3



1



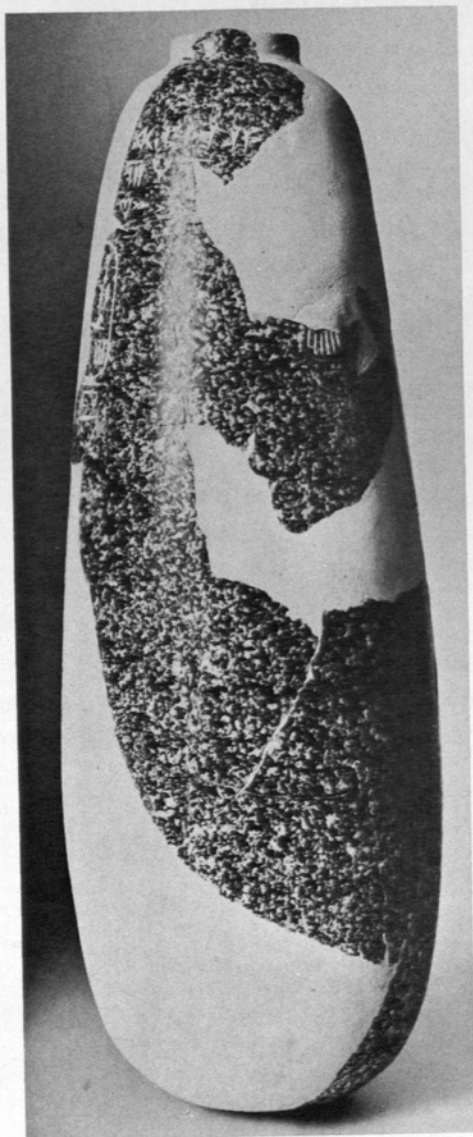
2a



3a



2b



3b



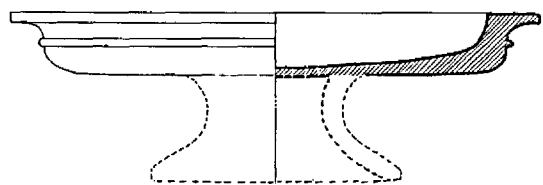
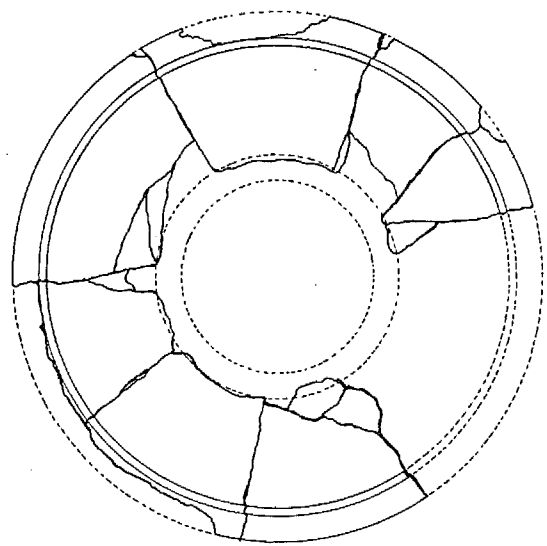
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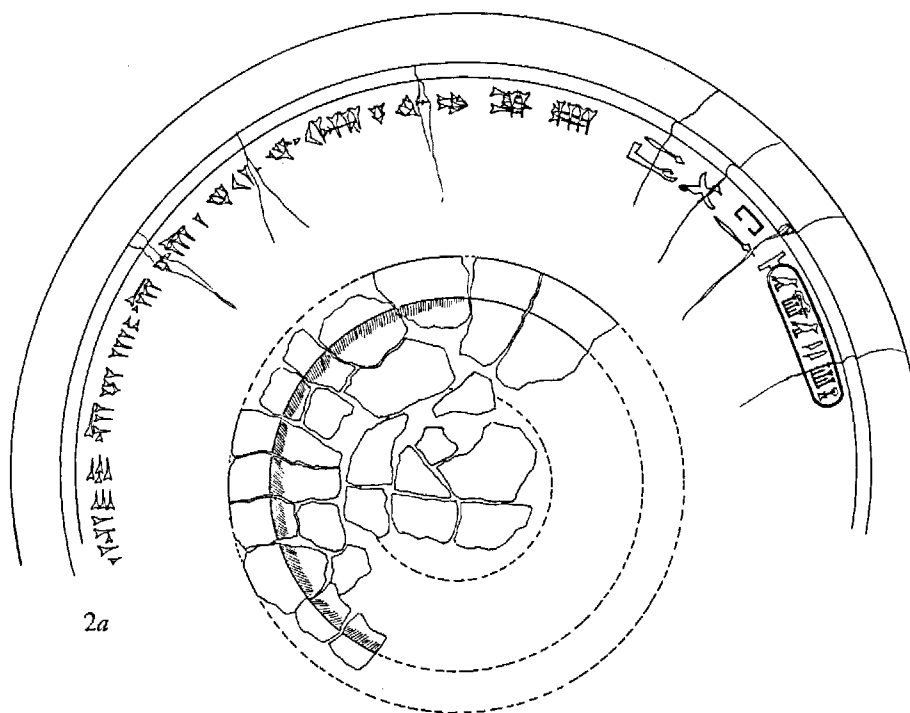
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INSCRIBED XERXES VESSELS OF STONE AND COMPOSITION, FROM THE TREASURY

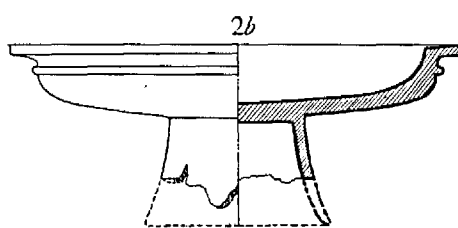
No.	Field No.	Find-Spot	Material	Remarks	Scale
1	PT5 302			See Pls. 50 and 51:1. Bottom view and side view with half-section	1:4
2	PT5 303 and 305			See Pl. 51:2. Bottom ( <i>a</i> ) and top ( <i>b</i> ) views, side view with half-section ( <i>c</i> )	<i>a</i> , 1:2 <i>b-c</i> , 1:4
3	PT6 483			See Pl. 51:5. Side views with fragments of inscriptions and with half-section	1:4
4	PT4 306			See Pl. 51:3. Side view with half-section	1:4
5	PT6 426	Treasury	Yellowish-cream alabaster, smooth	Shoulder fragment of bottle or jar; superposed OP and El. characters	1:2
6	PT6 189 and 567	Hall 41, Plot HF 69, center and SW. corner	Dark grayish-brown dioritic stone, polished	Plate; incised Egyptian inscription of Xerxes on exterior, presumably part of quadrilingual inscription as on No. 1; ring base. Reconstructed drawings: bottom view and side view with half-section	1:4
7	PT5 307			See Pl. 51:4. Reconstructed drawings: top view and side view with half-section	1:4



1

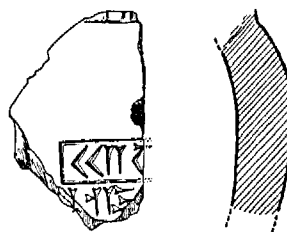
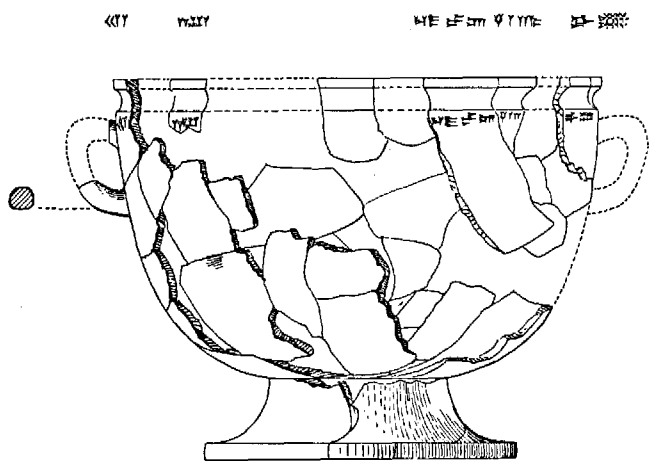


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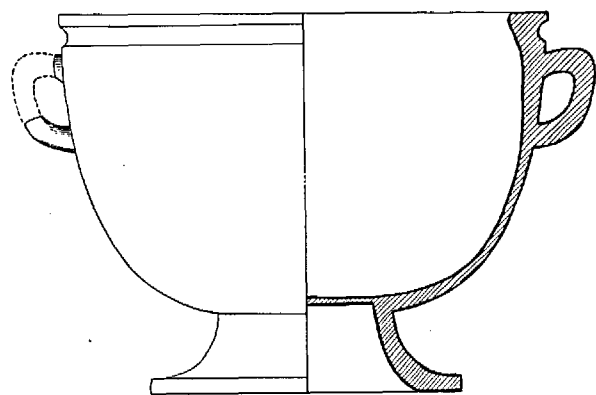


2b

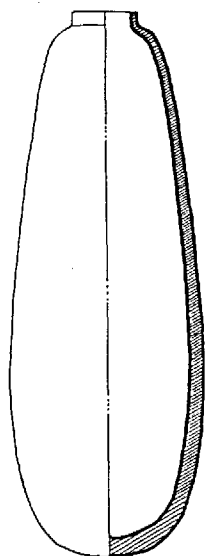
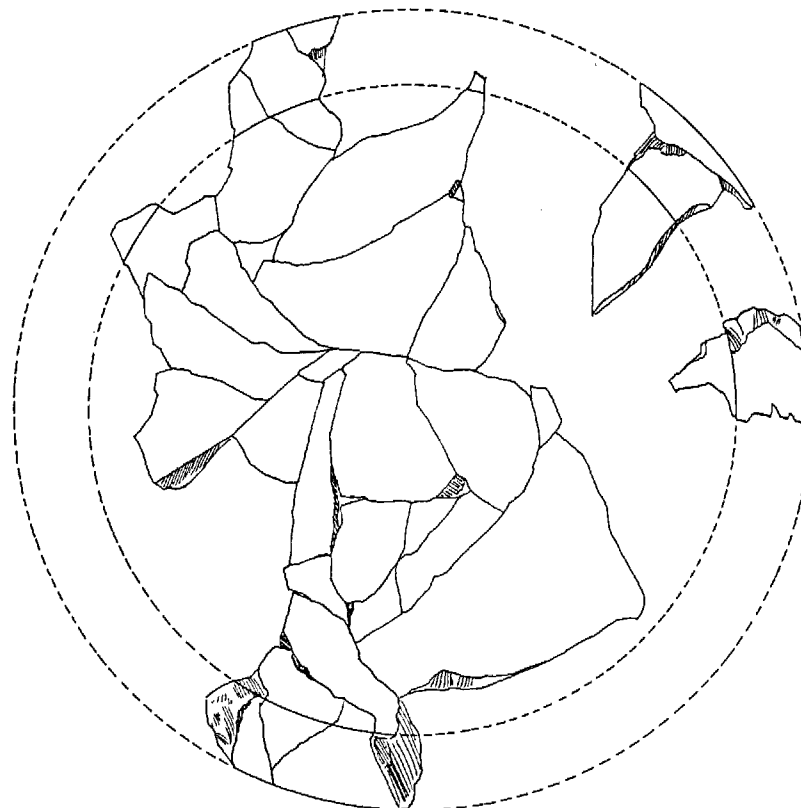
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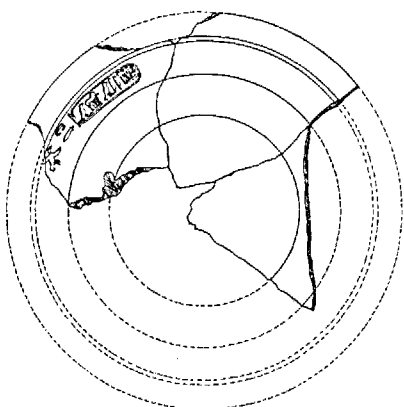
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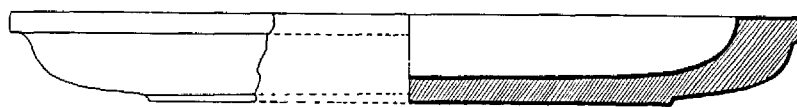
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4



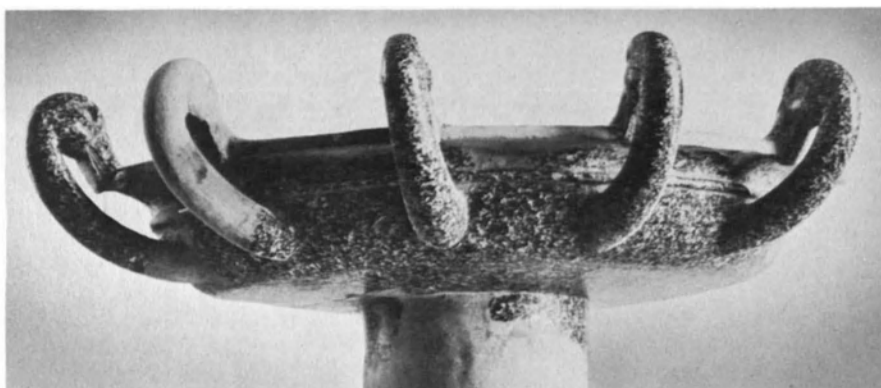
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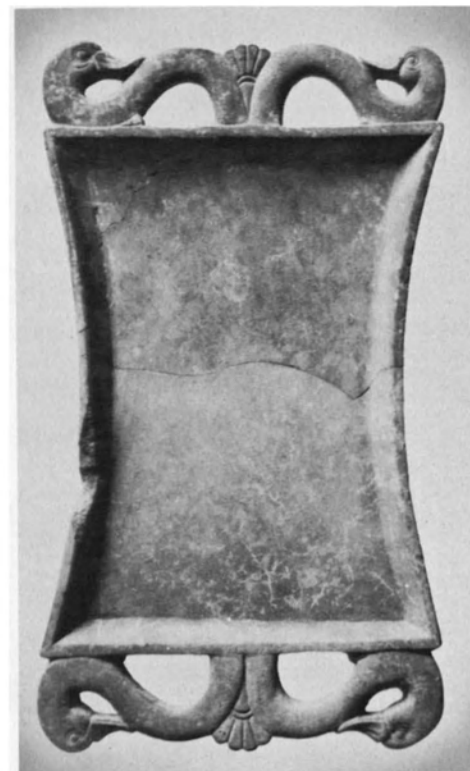
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INSCRIBED XERXES VESSELS OF STONE AND COMPOSITION, FROM THE TREASURY

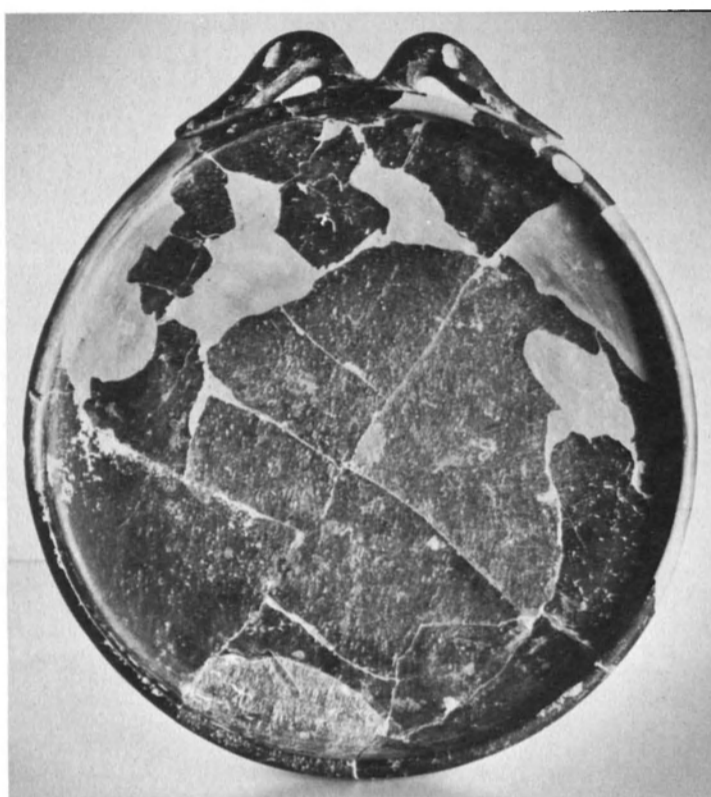
PLATE 53



1



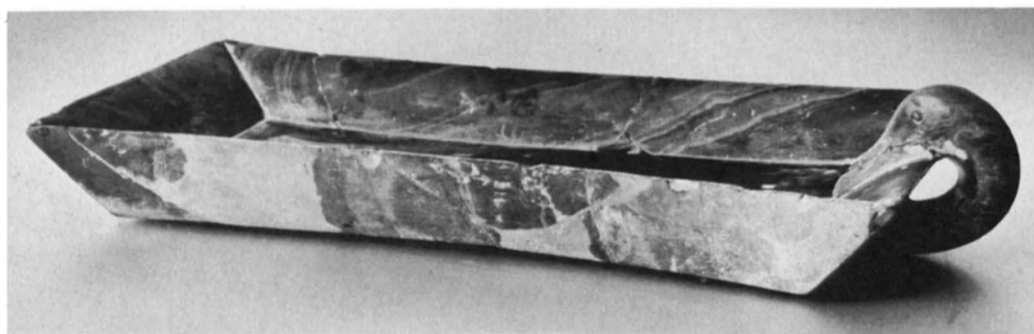
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3



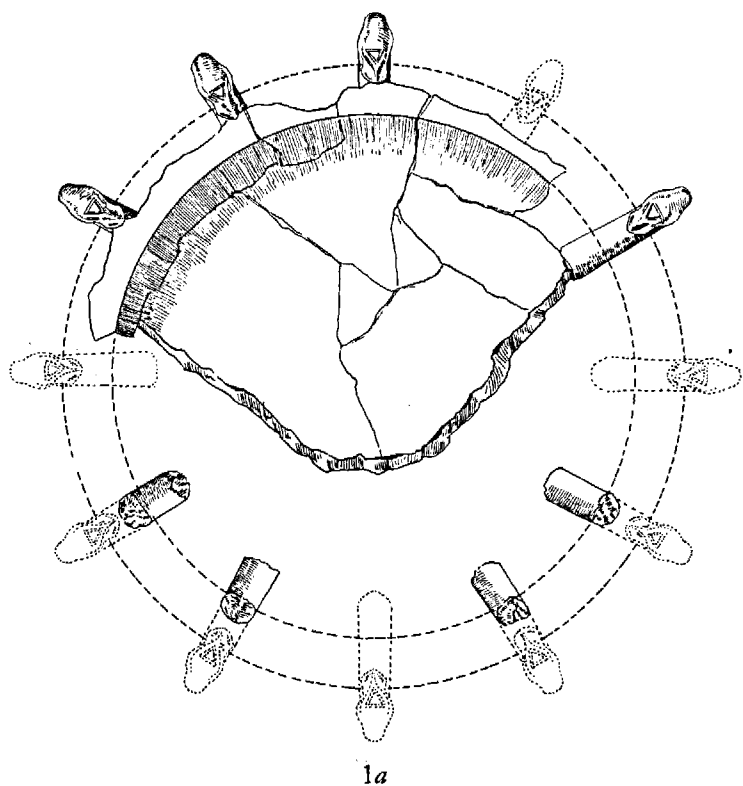
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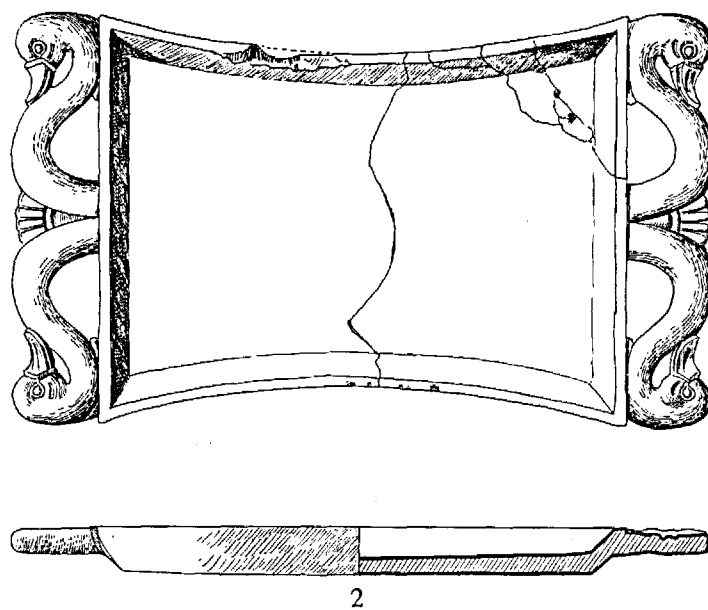
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ELABORATE ACHAEMENID STONE VESSELS, FROM THE TREASURY

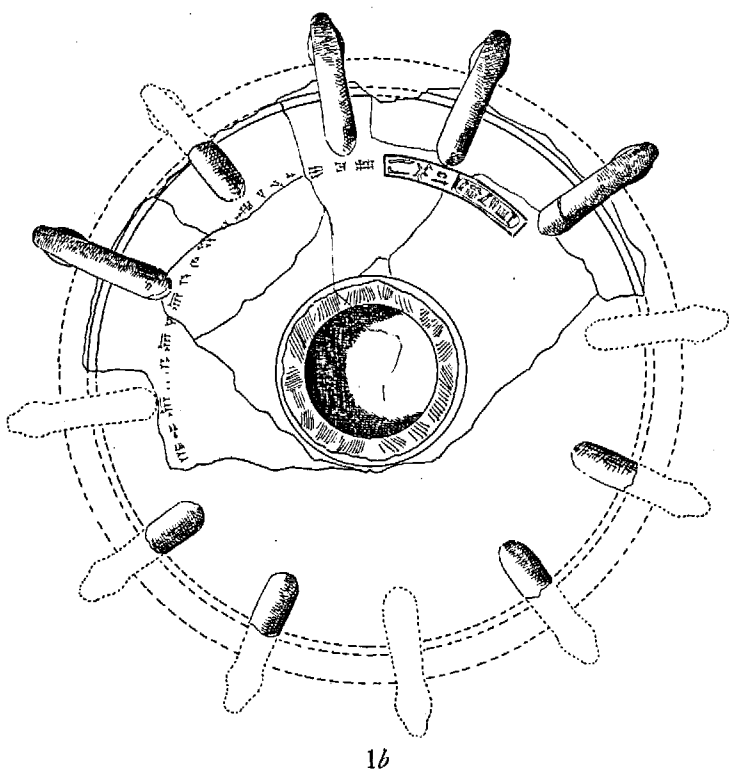
No.	Field No.	Find-Spot	Form	Material	Remarks	Scale
1	PT5 155, 164, 191, 230, 235	Hall 41, NE. corner, Plots HG 40 and 50 (1-2 m. above floor), HF 49; Room 39, center, 1.50 above floor, Plot HF 49	Footed plate with twelve swan handles	Black and white speckled granite, polished	Incised quadrilingual inscription of Xerxes. Parts of body, handles, and foot restored; side view; see also Pl. 54:1	1:3
2	PT5 726	Hall 38, .17 and .30 above floor, Plot HF 47, near NW. corner	Tray	Gray calcareous stone, smooth	Two handles in form of paired swan heads and necks, joined by palmette; top view; see also Pl. 54:2	1:4
3	PT6 236	Hall 41, Plot HF 77, near NE. corner	Footed plate	Greenish-black serpentine, polished	One handle in form of two adorsed duck heads. Patches of body and foot restored	1:3
4	PT6 278	Hall 41, Plot HF 68, center S.	Tray?	Greenish-black serpentine, polished	Handle terminating in parrot head; side view; see also Pl. 54:4	1:2
5	PT4 1071, PT5 735	Hall 38, Plots HG 21, SE., and HF 29, SE., floor	Tray	Banded purplish-brown, yellow, and red-brown stone, low polish	One handle in form of duck's head; side view; see also Pl. 54:3	ca. 1:3



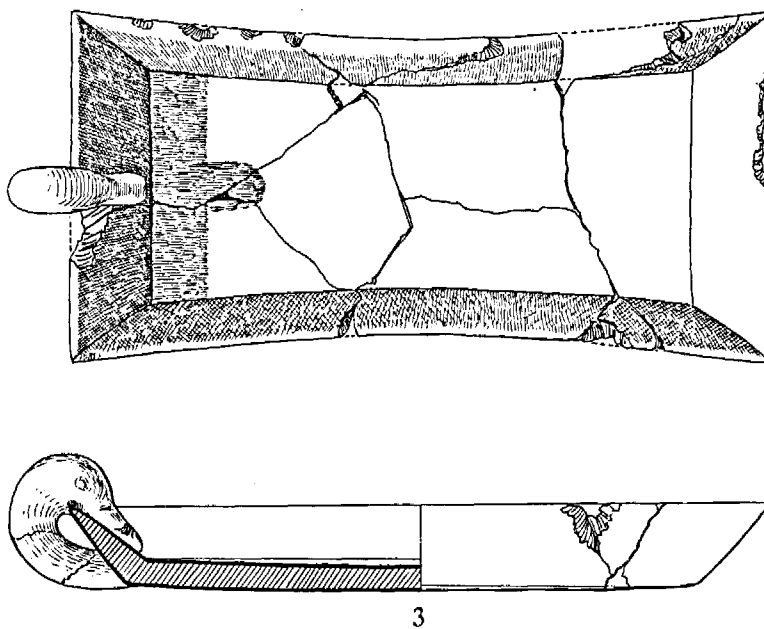
1a



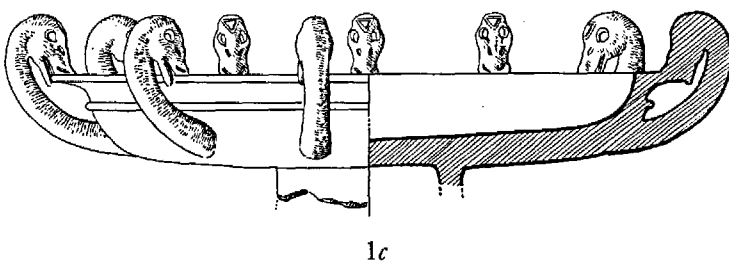
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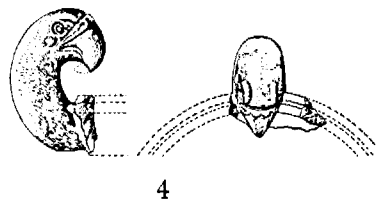
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1c



4

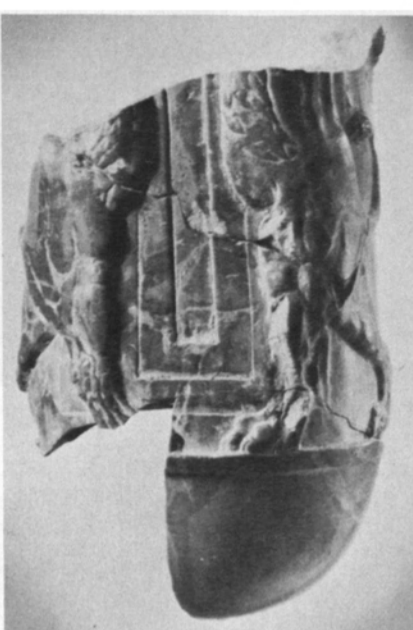
ELABORATE ACHAEMENID STONE VESSELS, FROM THE TREASURY. SCALE, 1:4

No.	Field No.	Remarks
1	PT5 155, 164, 191, 230, 235	See Pl. 53:1. Views of top (a), bottom (b), and side with half-section (c)
2	PT5 726	See Pl. 53:2. Views of top and side with half-section
3	PT4 1071, PT5 735	See Pl. 53:5. Views of top and side with half-section
4	PT6 278	See Pl. 53:4. Views of side and top

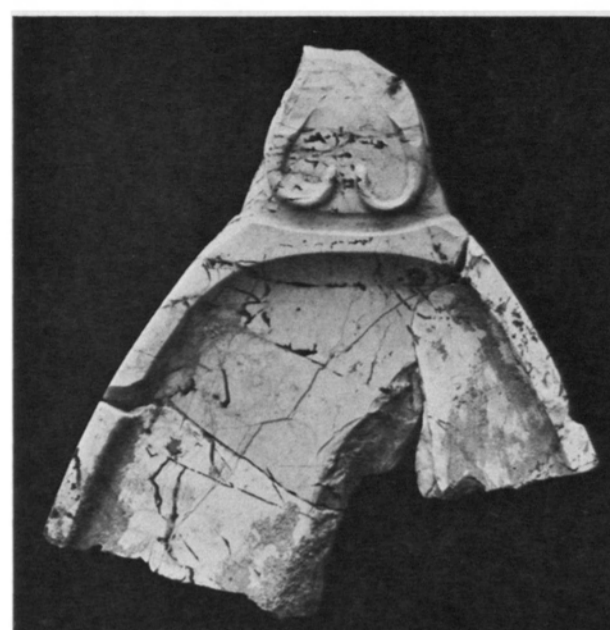
## PLATE 55



1a



1b



2



3

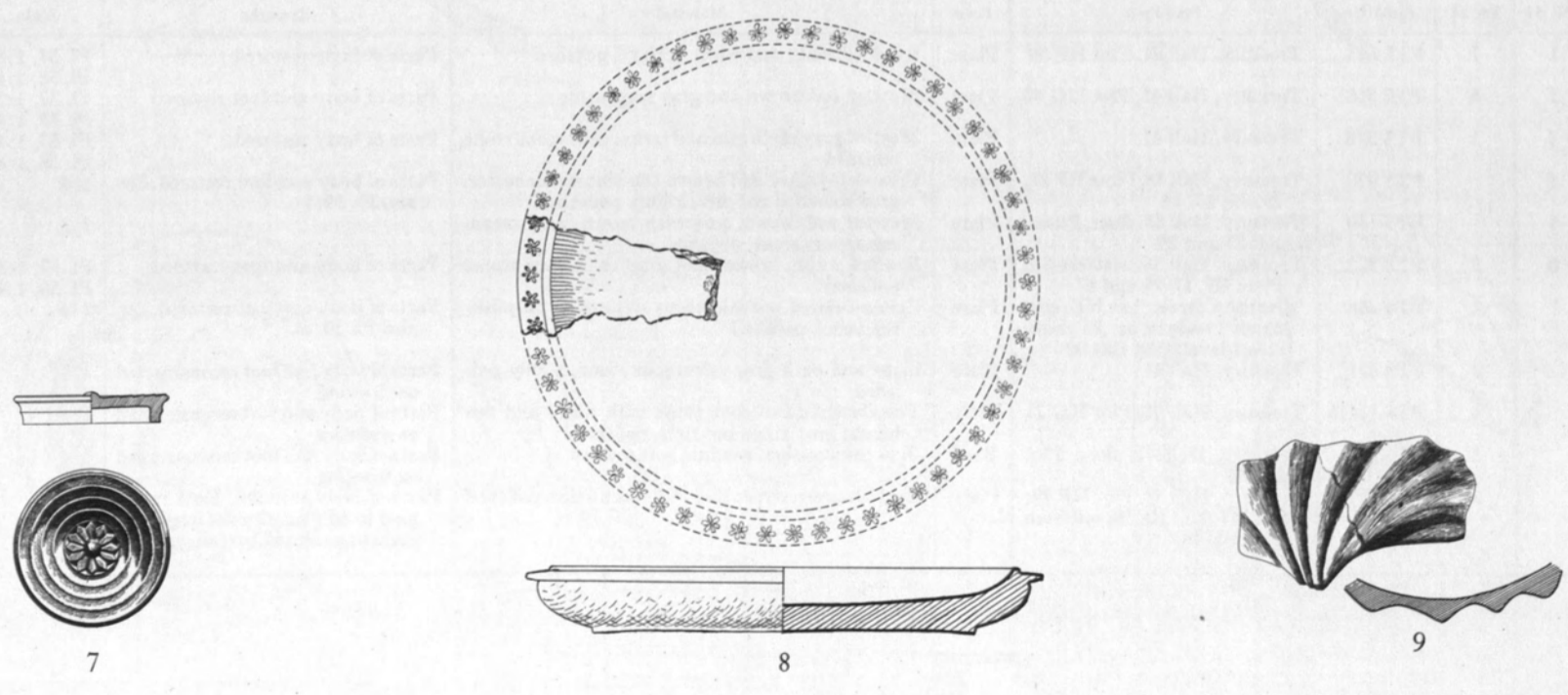
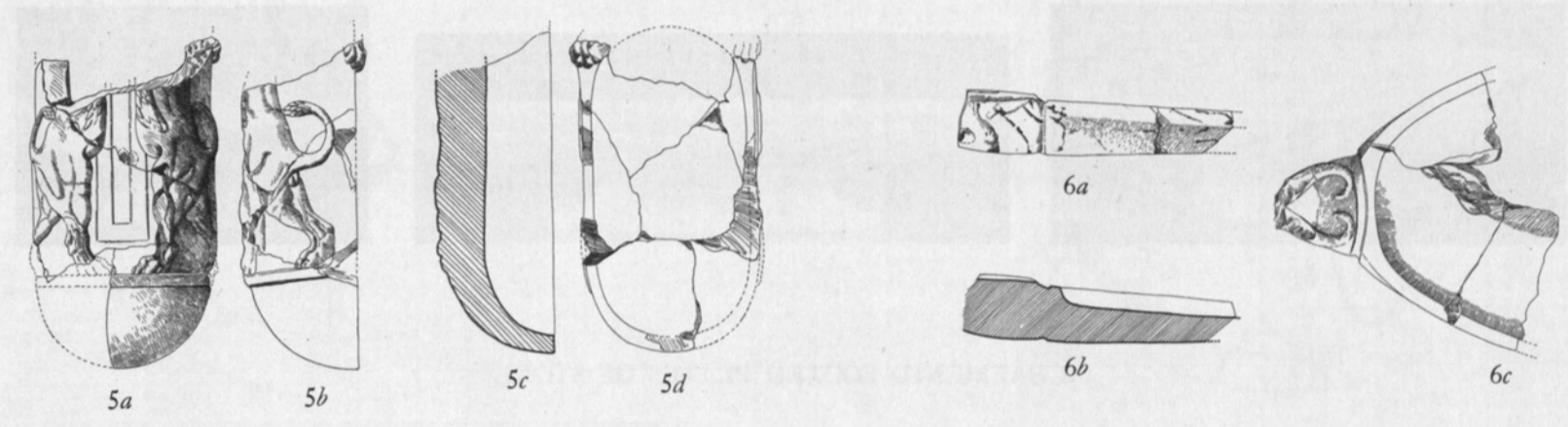
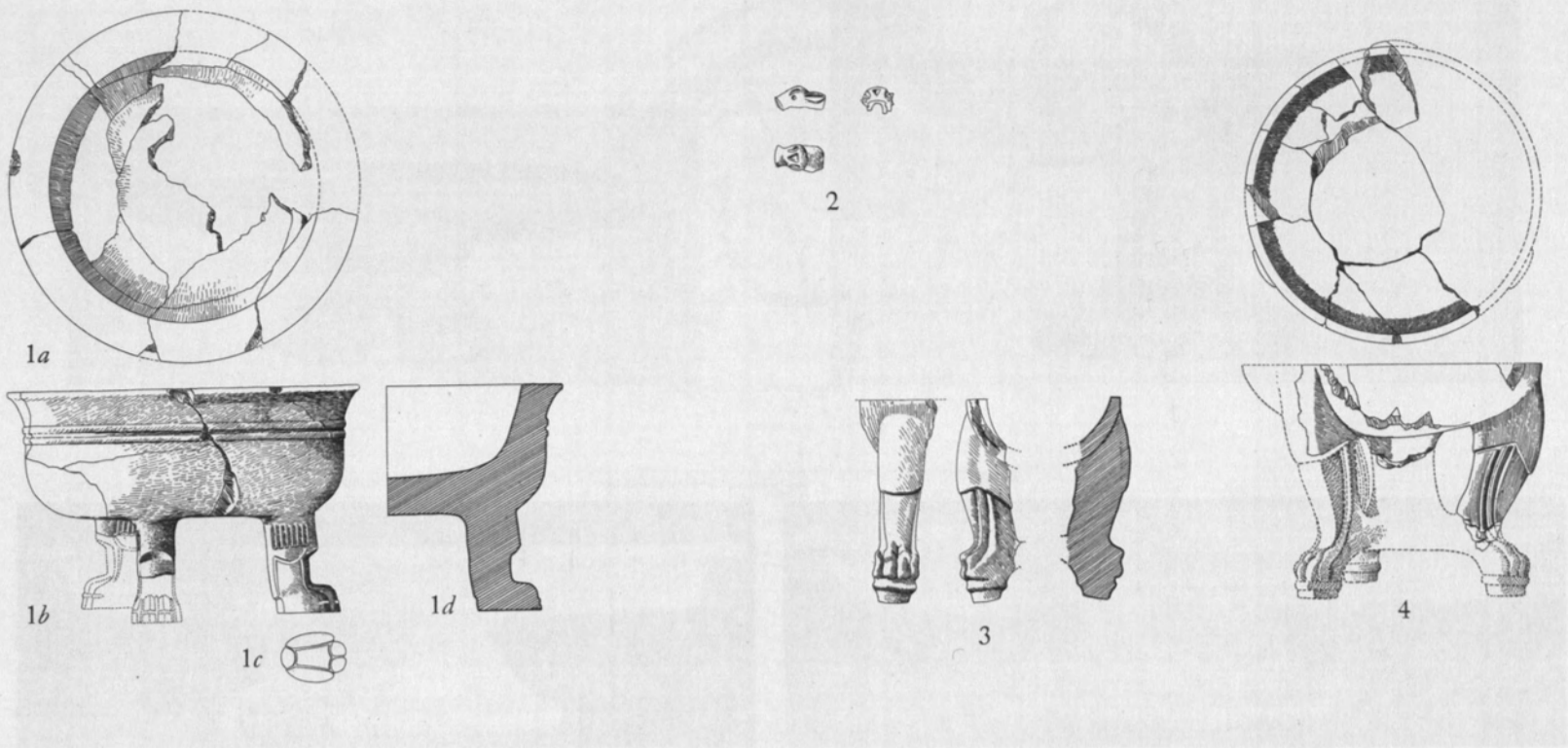


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## ELABORATE ACHAEMENID STONE VESSELS, FROM THE TREASURY

Pl. 55	Pl. 56	Field No.	Find-Spot	Form	Material	Remarks	Scale of Photographs
1	5	PT5 687	Treasury, Hall 38, Plots HF 29, NE., and HF 37	Lid	Mottled red and light brown stone, polished	Parts of two erect lions in relief on opposite sides of panel. Views of top (Pls. 55:1, 56:5a), side (Pl. 56:5b), and bottom (Pl. 56:5d), cross section (Pl. 56:5c)	1:2
2	6	PT6 31	Treasury, Hall 41, on top of column base I3, Plot HG 70	Plate or tray	Cream and light tan non-calcareous stone with maroon veins, polished	Handle in form of cervine head (mutilated); horns preserved. Views of top and side, cross section	1:2
3	1	PT5 10	Treasury, Room 39, Plot HG 40	Tripod bowl	Green chert with black (scorched) stains, polished	Squat, heavy bowl with three leonine legs. Parts of body and two legs restored. Views of side, top, half-section, and bottom of paw	1:2
4	4	PT6 528	Treasury, Hall 41, Plot HF 57	Tripod bowl	Black and grayish-green serpentine, polished	Three leonine legs; three-flanged central support. Parts of body, support, and legs restored; views of side and top	ca. 2:5
	2	PT5 186	Treasury, Hall 38, Plot HG 20, NE.	Zoomorphic spout	White marble(?), smooth	Bovine(?) head; hollow; triangular depression in forehead. Views of side, top, and front	
	3	PT5 433	Harem, service quarters, Room 7, NW., Plot HF 24	Tripod bowl	Black serpentine, highly polished	Lion's leg and part of vessel. Views of front and side, cross section	
	7	PT6 202	Treasury, Room 51, S. doorway, Plot HG 02	Lid	Gray and black (scorched) noncalcareous stone, polished	Twelve-petaled rosette and concentric grooves cut in lid top. Views of top and side with half-section	
	8	PT6 207	Treasury, Hall 41, Plot HF 68, SW.	Plate	Blue composition, soft surface	Impressions of 6-petaled rosettes on rim. Reconstructed drawings of top and side with half-section	
	9	PT4 129	Treasury, Courtyard 17, Plot HG 62, center E.	Dipper?	Cream-colored translucent alabaster, polished	Imitation of shell. Bottom view and cross section	





ELABORATE ACHAEMENID VESSELS OF STONE AND COMPOSITION. SCALE, 1:4

## PLATE 57



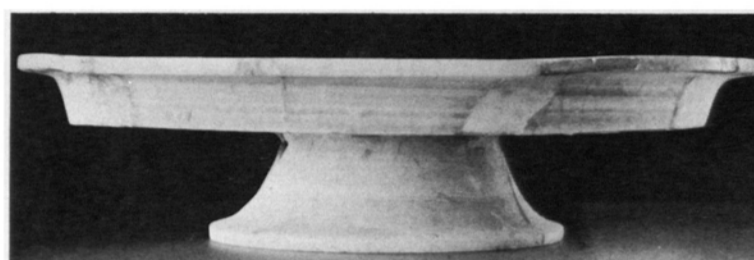
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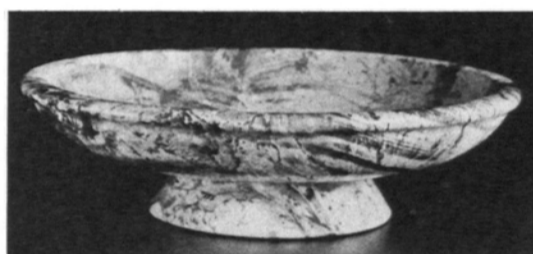
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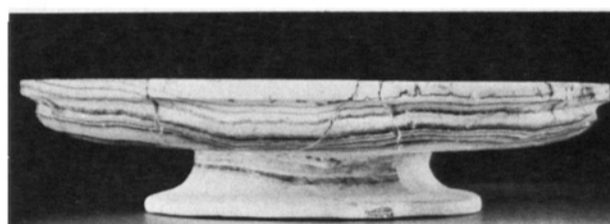
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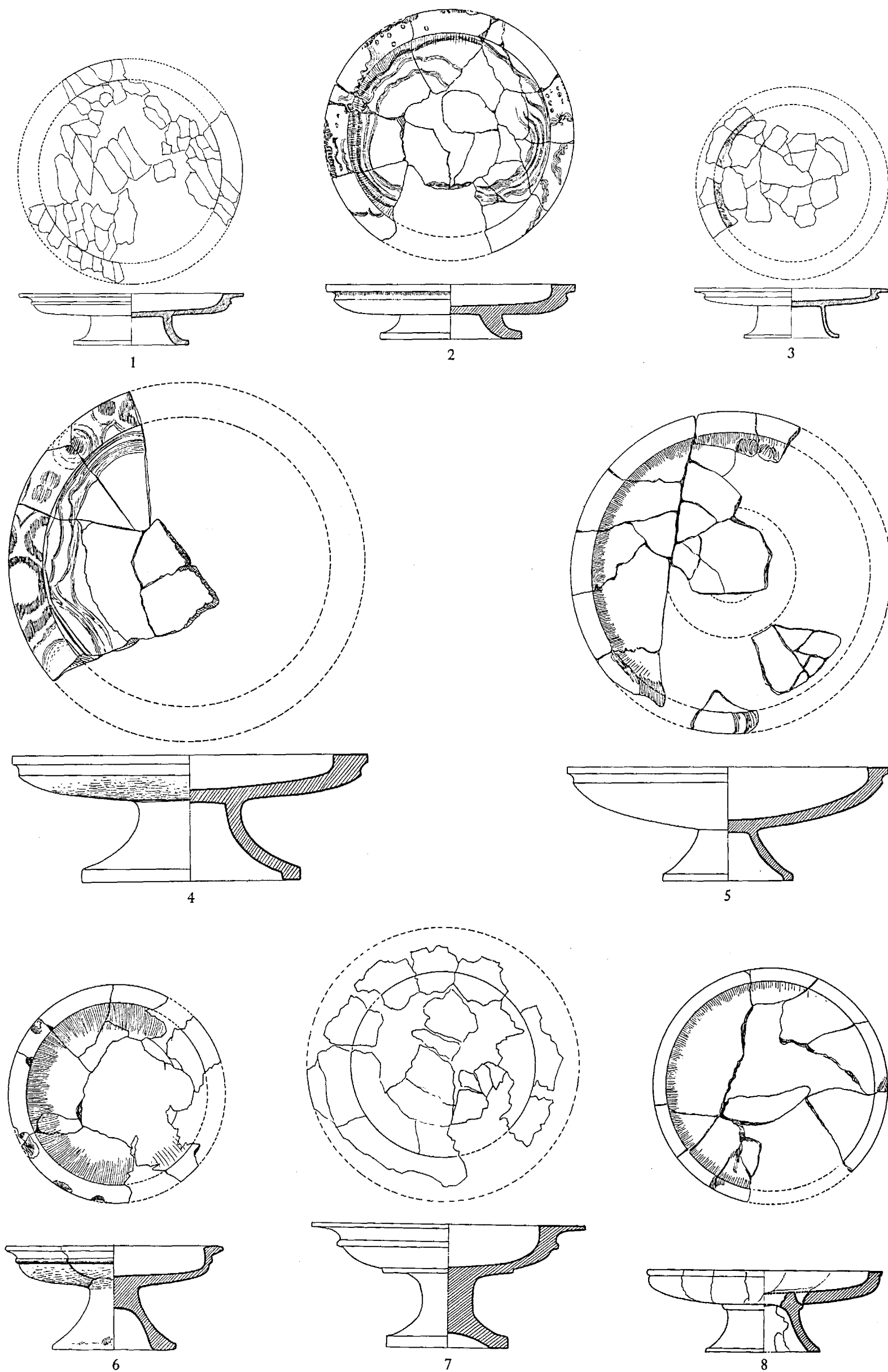
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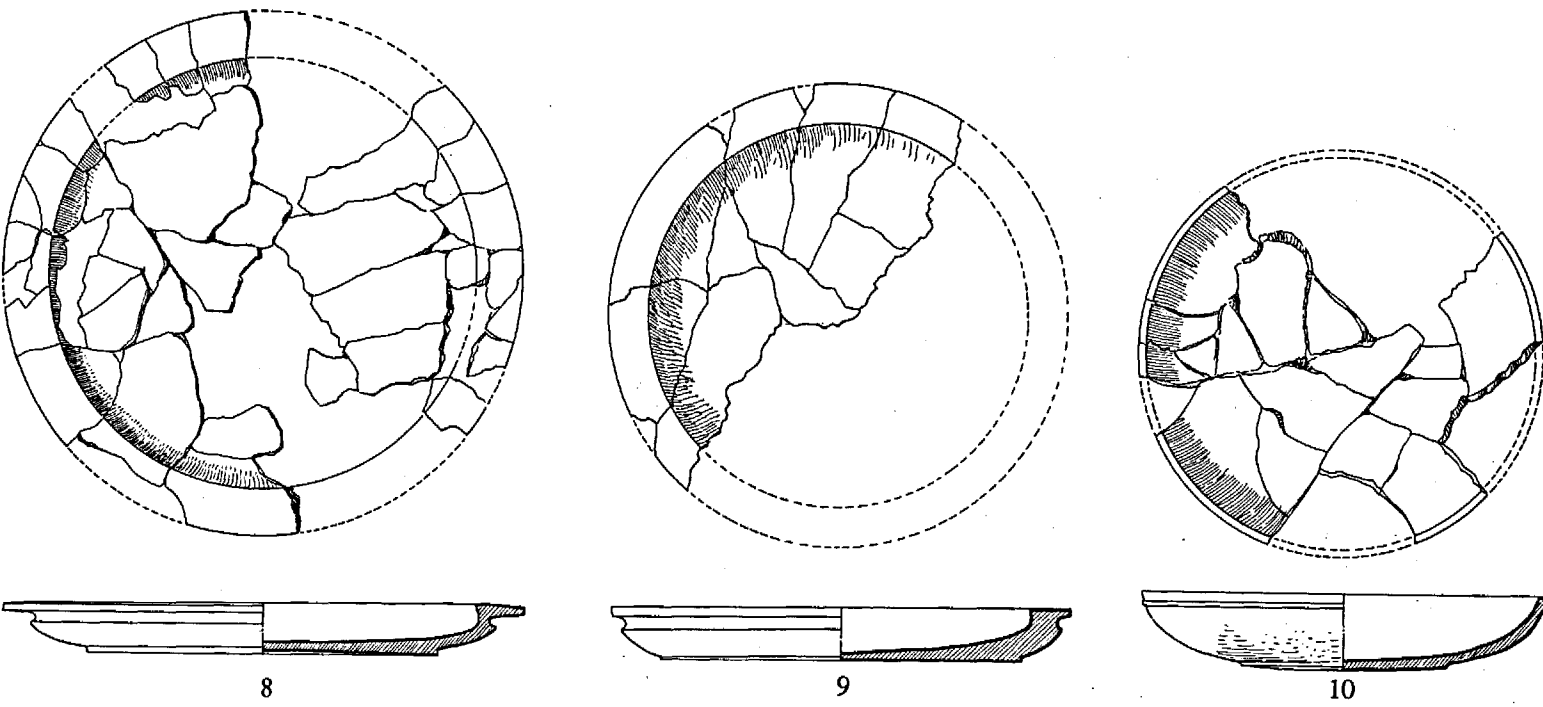
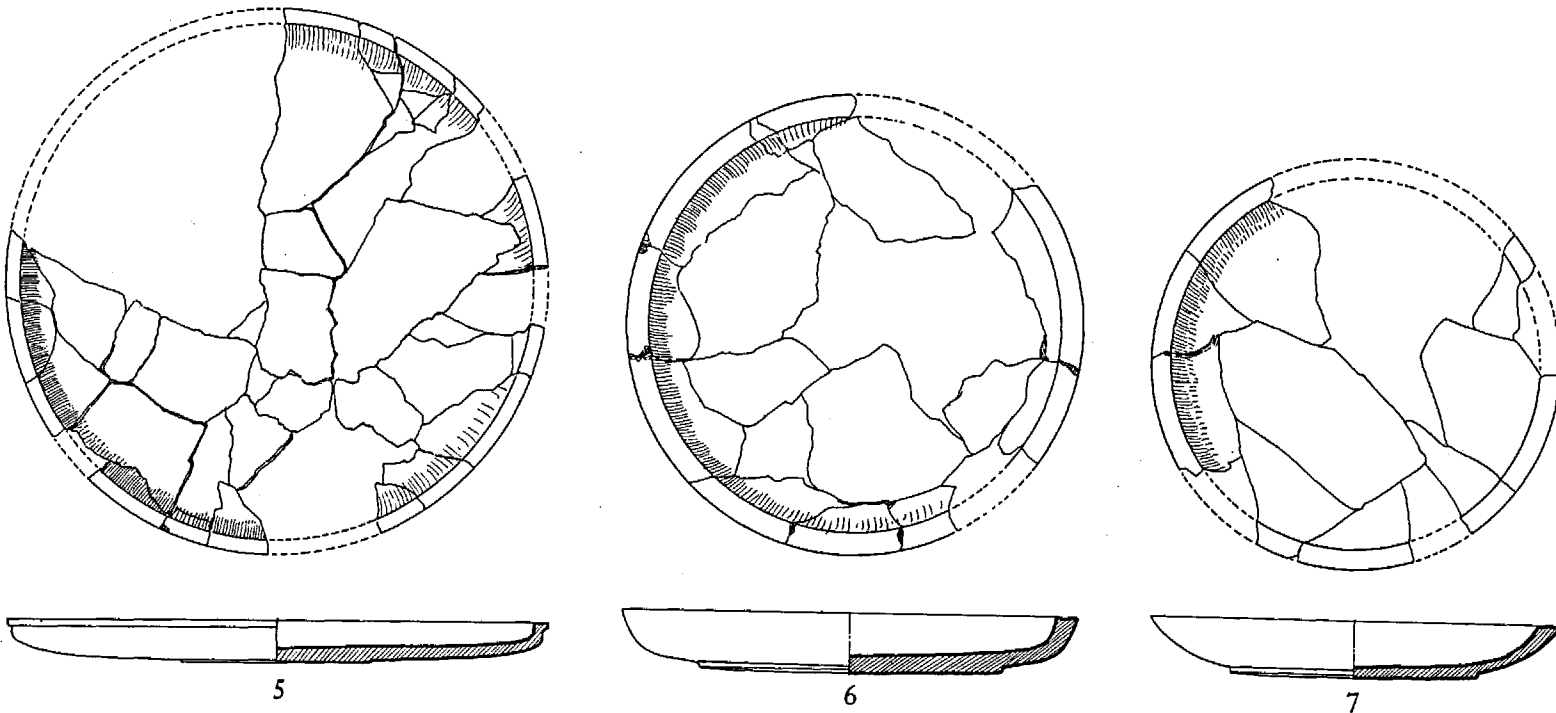
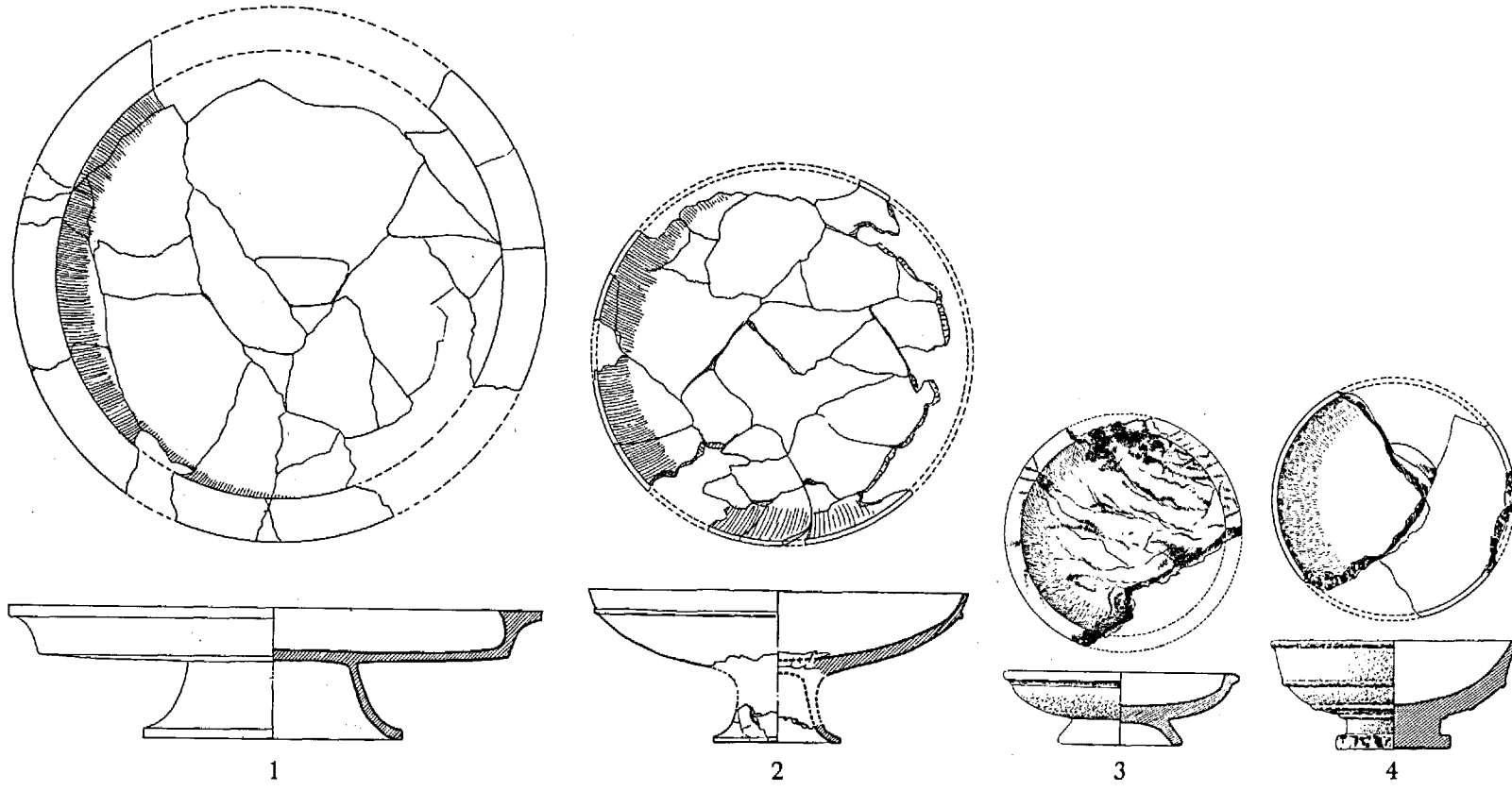
## ACHAEMENID FOOTED PLATES OF STONE

Pl. 57	Pl. 58	Field No.	Find-Spot	Form	Material	Remarks	Scale
1	7	PT5 513	Treasury, Hall 41, Plot HF 59	Plate	Speckled black and white granite, polished	Parts of body restored	Pl. 57, 1:3
2	8	PT6 518	Treasury, Hall 41, Plot HG 60	Plate	Mottled red-brown and gray serpentine	Parts of body and foot restored	Pl. 58, 1:4 Pl. 57, 1:3
3	1	PT5 520	Treasury, Hall 41	Plate	Mottled grayish-brown and cream calcareous stone, polished	Parts of body restored	Pl. 58, 1:4 Pl. 57, 1:4 Pl. 58, 1:8
4		PT5 920	Treasury, Hall 38, Plots HF 27, 29, 39, 47, 48	Plate	Creamish-yellow and brown translucent alabaster, gray scorched patches, highly polished	Parts of body and foot restored. See also Pl. 59:1	1:3
5		PT5 130	Treasury, Hall 38, floor, Plots HF 27 and 29	Plate	Mottled red-brown, yellowish-brown, and cream calcareous stone, polished		1:3
6	2	PT5 922	Treasury, Hall 38, scattered in Plots HF 27-29 and 47	Plate	Banded white, brown, and gray calcareous stone, polished	Parts of body and foot restored	Pl. 57, 1:3 Pl. 58, 1:4
7		PT6 266	"Garrison Street," at NE. corner of Treasury, ca. .75 above street level, Plot HG 02	Plate	Cream-colored noncalcareous stone with purplish-red veins, polished	Parts of body and foot restored. See also Pl. 59:3	1:3
	3	PT5 521	Treasury, Hall 41	Plate	Light and dark gray calcareous stone, highly polished	Parts of body and foot reconstructed on drawing	1:8
	4	PT4 1141b	Treasury, Hall 38, Plot HG 21	Plate	Translucent calcareous stone with white and tan bands, gray rings and dots, polished	Parts of body and foot reconstructed on drawing	1:4
	5	PT6 252	Treasury, Hall 41, floor, Plot HF 88	Bowl	Blue composition, smooth, soft surface	Parts of body and foot reconstructed on drawing	1:4
	6	PT5 851	Treasury, Hall 38, Plot HF 29; Hall 41, Plot HF 59; soil from Plot HF 48	Plate	Grayish-green serpentine with black veins, polished	Parts of body restored. Data in regard to find-locations of fragments perhaps confused by restorers	1:4



ACHAEMENID FOOTED PLATES OF STONE AND COMPOSITION BOWL, FROM THE TREASURY

No.	Field No.	Find-Spot	Form	Material	Remarks	Scale
1	PT5 920				See Pl. 57:4	1:4
2	PT6 506	Treasury, Hall 41, Plot HG 60	Footed plate	Grayish-green serpentine, dark scorched stains, polished	Parts of body and foot restored	1:4
3	PT6 266				See Pl. 57:7	1:4
4	PT5 837	Treasury, Hall 38, Plot HF 29, center	Footed bowl	Grayish-white stone, chalky surface	Parts of body and foot restored	1:4
5	PT6 556	Treasury, Hall 41, refuse	Plate	Mottled gray and grayish-green serpentine, polished	Partly restored	1:6
6	PT6 501	Treasury, Hall 38, Plots HF 47-48	Plate	Yellowish-tan serpentine with black and brown veins, smooth	Partly restored	1:4
7	PT6 502	Treasury, Hall 38, Plots HF 37-38	Plate	Greenish-gray serpentine with black veins, smooth	Partly restored	1:4
8	PT6 538	Treasury, Hall 41, refuse	Plate	Light tan translucent alabaster, polished	Partly restored	1:4
9	PT5 158	Treasury, Hall 41, 1-1.50 above floor, Plot HG 40	Plate	Black and white speckled granite, highly polished	Drawing reconstructed	1:4
10	PT6 545	Treasury, Hall 41, Plot HF 59	Plate	Mottled dark gray and green serpentine, polished	Partly restored	1:4

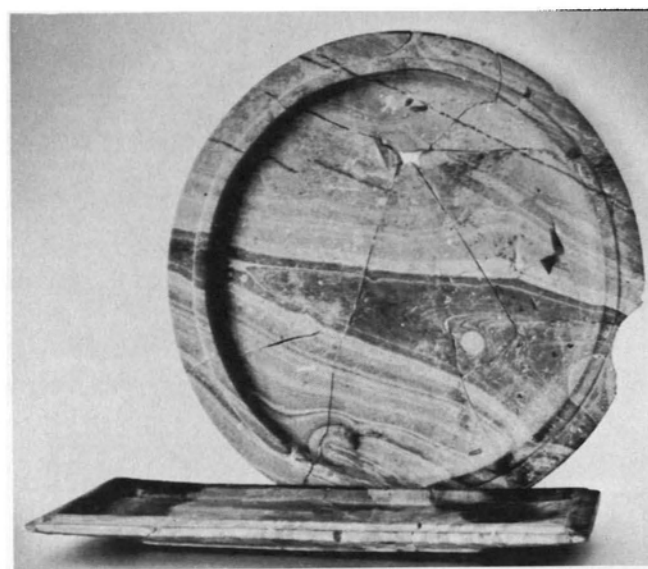


ACHAEMENID STONE PLATES AND BOWL

PLATE 60



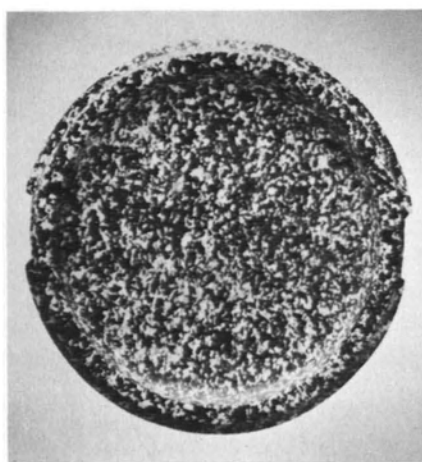
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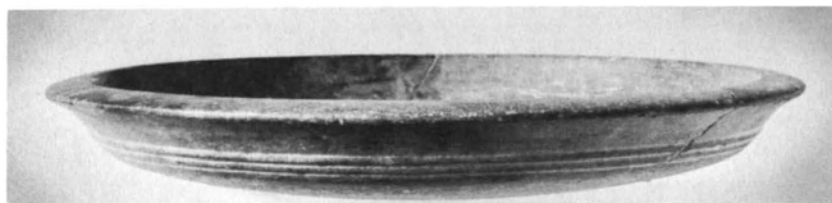
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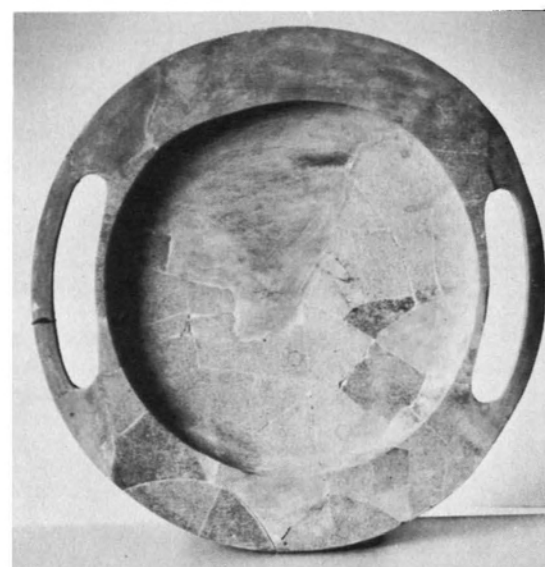
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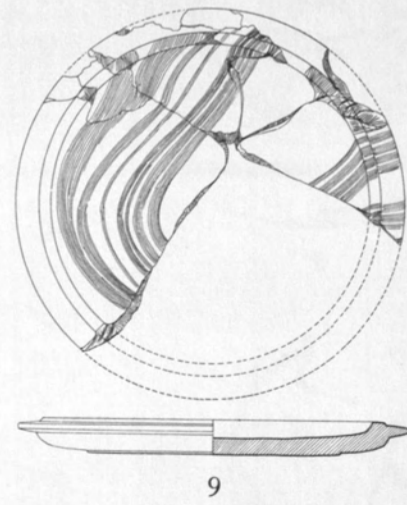
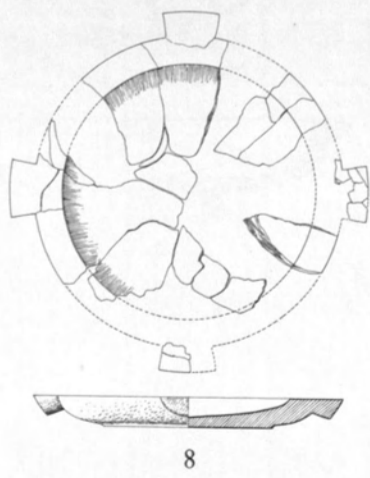
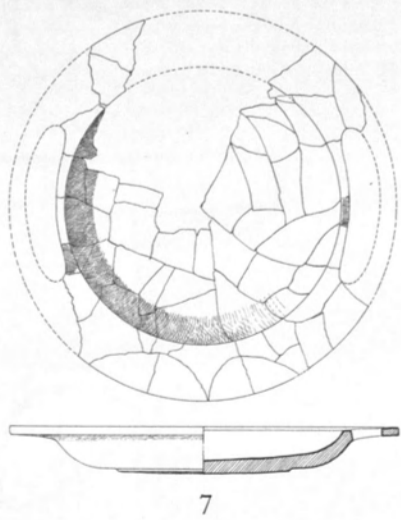
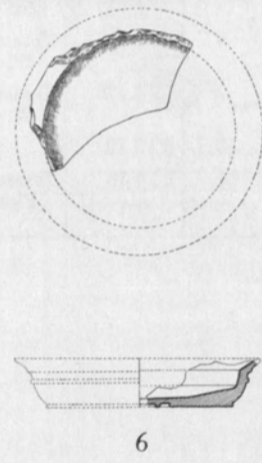
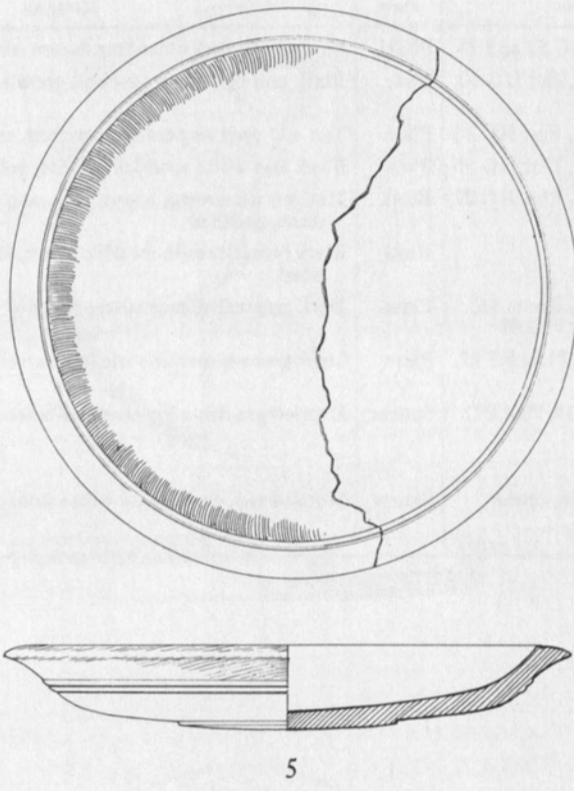
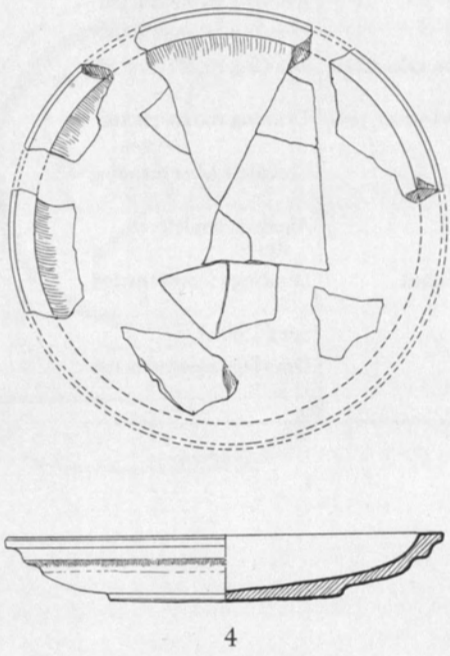
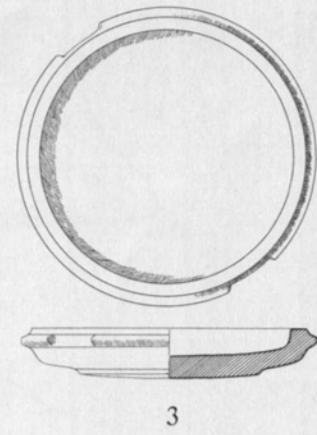
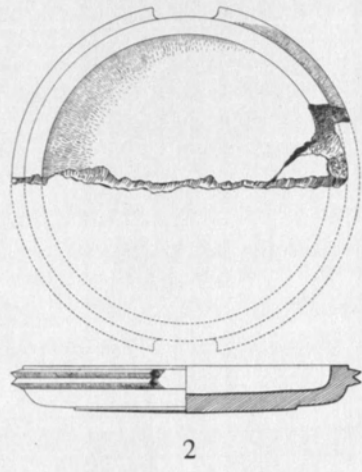
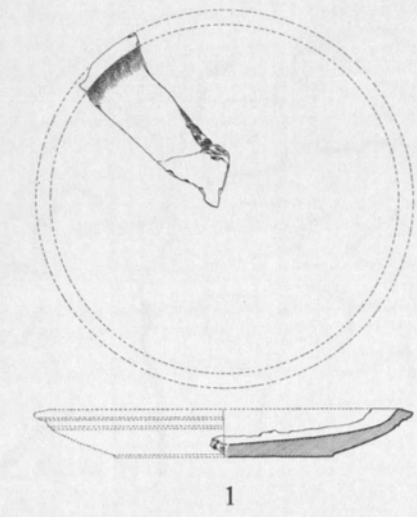
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6

ACHAEMENID STONE VESSELS

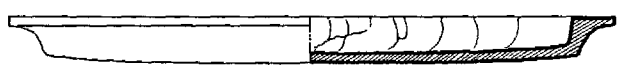
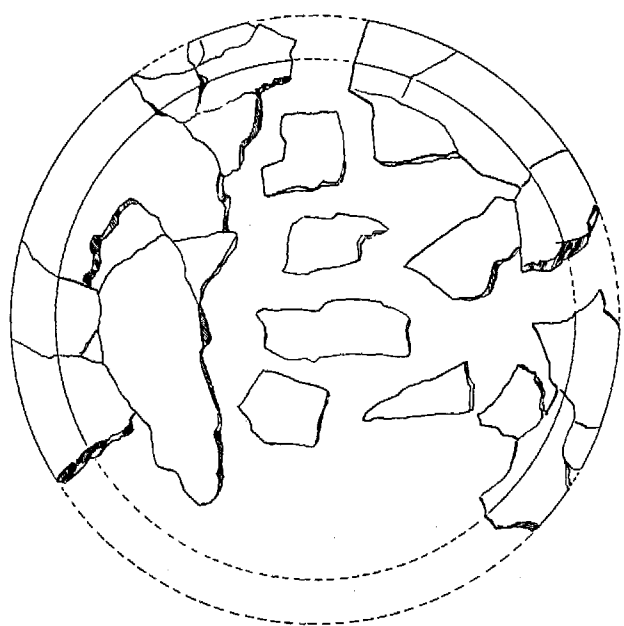
Pl. 60	Pl. 61	Field No.	Find-Spot	Form	Material	Remarks	Scale
	1	PT4 89	Treasury, Courtyard 17, Plot HG 52, SE.	Plate	White calcareous stone with red-brown veins, polished	Drawing reconstructed	1:4
1		PT6 508	Treasury, Hall 41, Plots HF 68-69 and HG 60	Plate	Banded buff and purplish-red calcareous stone	Partly restored; for almost identical form see Pl. 61:9	1:6
	2	PT6 32	Treasury, Hall 41, on column base I3, Plot HG 70, SW.	Plate	Gray calcareous stone, low polish	Drawing reconstructed	1:4
2		PT4 1024, PT5 99, PT5 929	Treasury, Hall 38, scattered in Plots HG 21, 30, 31 (floor). Tray in Plots HF 29 and 38	Plate (PT4 1024, PT5 99) and tray (PT5 929)	Calcareous stone. Plate: banded in tan, red-brown, and purplish-brown shades, smooth. Tray: yellowish brown and maroon, polished	Plate almost complete; for almost identical form see Pl. 61:9. Tray partly restored; for similar form see Pl. 64:3	ca. 1:6
3		PT3 79	Garrison quarters, Alcove 10, floor, Plot HG 86	Saucer with open spout	White translucent gypsum?	Partly restored. See also Pl. 62:10	1:2
4	3	PT5 129	Treasury, Hall 38, Plot HF 29, center N.	Plate	Speckled black and white granite, smooth	Complete	Pl. 60, 1:3 Pl. 61, 1:4
	4	PT5 925	Treasury, Hall 38, Plots HF 27 and 29	Plate	Mottled cream, yellowish-brown, and maroon calcareous stone, polished	Drawing reconstructed	1:3
5	5	PT6 211	Treasury, Room 51, floor at center E. wall, Plot HG 02	Plate	Grayish-green steatite, gray scorched stains, smoothed-over chisel marks	Complete after mending	Pl. 60, 1:3 Pl. 61, 1:4
	6	PT4 358	Treasury, Passage 26, S. end, Plot HG 83	Plate	Bluish-green composition	Drawing reconstructed	1:4
6	7	PT5 924	Treasury, Hall 38, scattered in Plots HF 29, 36-38, 48	Plate	Gray and grayish-green finely speckled calcareous(?) stone, polished, surface slightly disintegrated	Partly restored; fractures indicate grips at opposite sides	Pl. 60, 1:6 Pl. 61, 1:8
	8	PT6 531	Treasury, Hall 41, Plots HF 59, 68 and HG 60	Plate	Gray serpentine, smooth	Drawing reconstructed. Handles formed by four projections	ca. 1:12
	9	PT5 923	Treasury, Hall 38, Plots HF 27-28	Plate	Yellowish-brown, brown, and maroon calcareous stone, polished	Drawing reconstructed	1:8



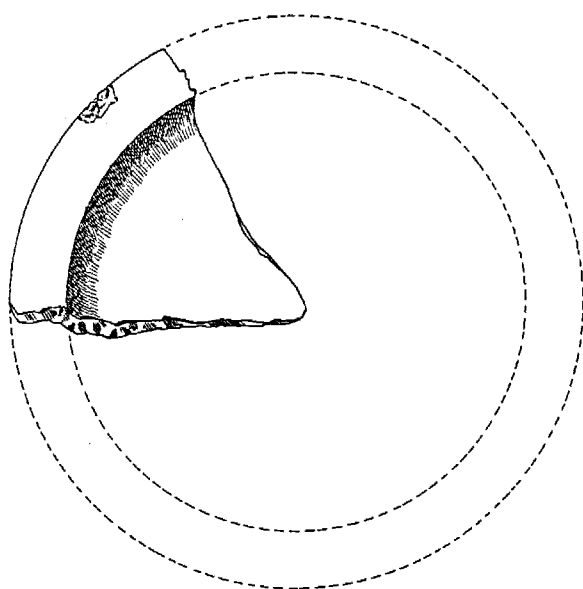
ACHAEMENID FOOTLESS PLATES OF STONE, FROM THE TREASURY

No.	Field No.	Find-Spot	Form	Material	Remarks
1	PT4 532	Treasury, Plots HG 51 and 71	Plate	Banded tan and white translucent alabaster, polished	Drawing reconstructed
2	PT4 1050	Treasury, Hall 38, Plot HG 10, on W. line	Plate	Black and light gray speckled granite, highly polished	Drawings reconstructed
3	PT6 516	Treasury, Hall 41, Plot HG 60	Plate	Tan and gray serpentine, scorched, smooth	Drawing reconstructed
4	PT5 517	Treasury, Hall 41, Plot HG 50	Plate	Black and white speckled granite, polished	Drawing reconstructed
5	PT4 1141a	Treasury, Hall 38, Plot HG 21	Bowl	Mottled red-brown, brown, tan, and light yellow calcareous stone, polished	Drawing reconstructed
6	PT6 564	Treasury	Bowl	Black hematite with metallic luster, red stains and veins, polished	Drawing reconstructed
7	PT3 144	Garrison quarters, Room 16, SE. corner, Plot HG 87	Plate	Dark gray calcareous stone, polished	Complete after mending
8	PT5 855	Treasury, Hall 38, Plots HF 27, 29, 37	Plate	Light green serpentine with black veins, polished	Almost complete; re-stored
9	PT4 120	Treasury, Portico 19, Plot HG 52, center	Saucer	Mottled grayish-white and red-brown stone, polished	Drawings reconstructed
10	PT3 79				See Pl. 60:3
11	PT4 18	Treasury, Room 16, center, Plot HG 53	Saucer	Mottled red, cream, and white stone, polished	Drawings reconstructed

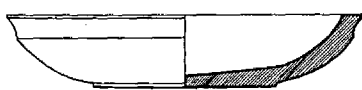
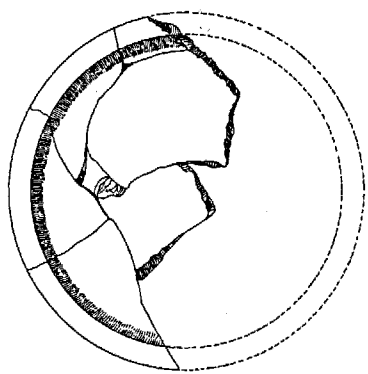




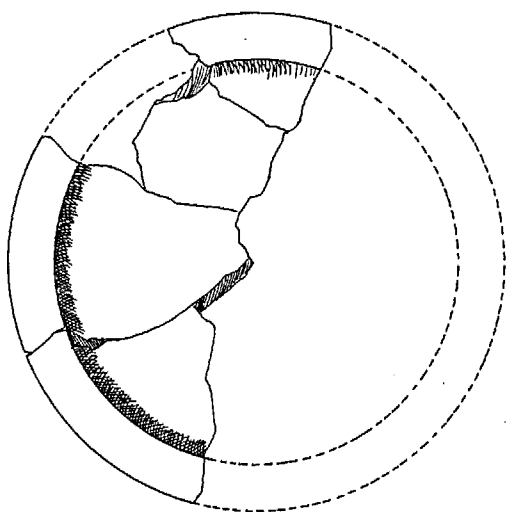
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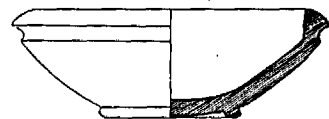
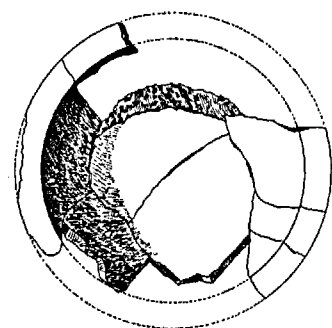
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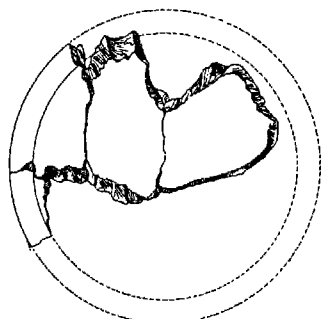
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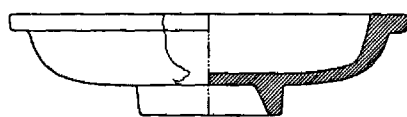
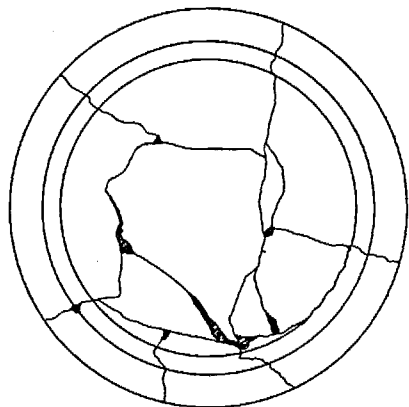
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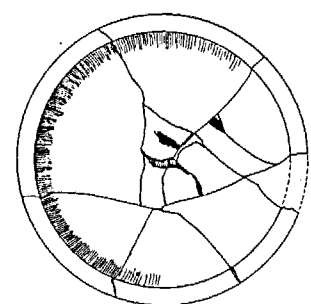
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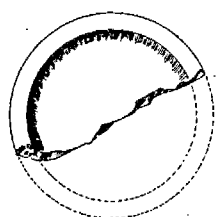
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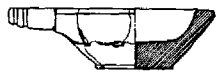
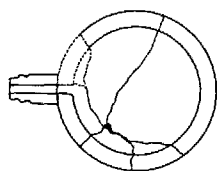
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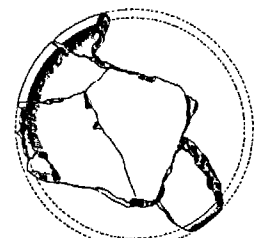
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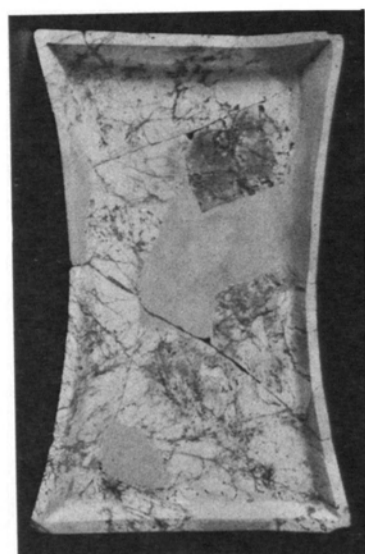


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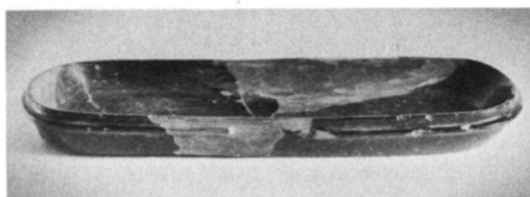


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## PLATE 63



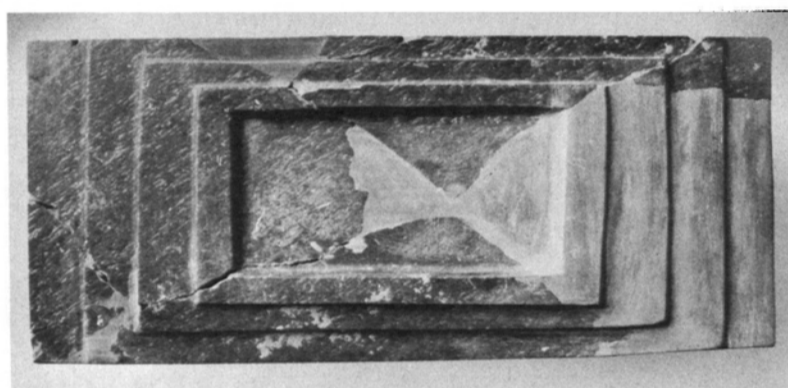
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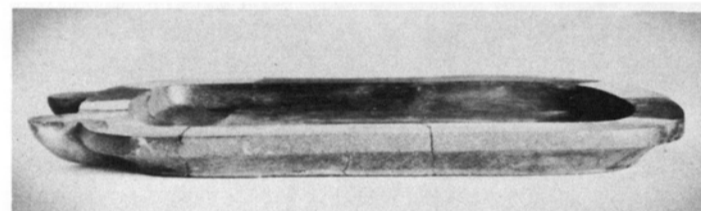
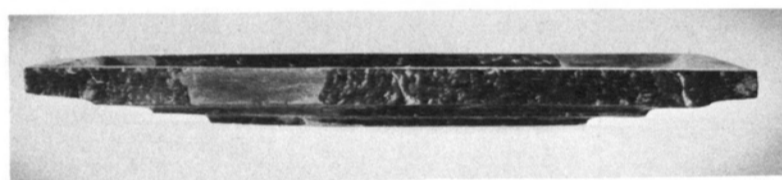
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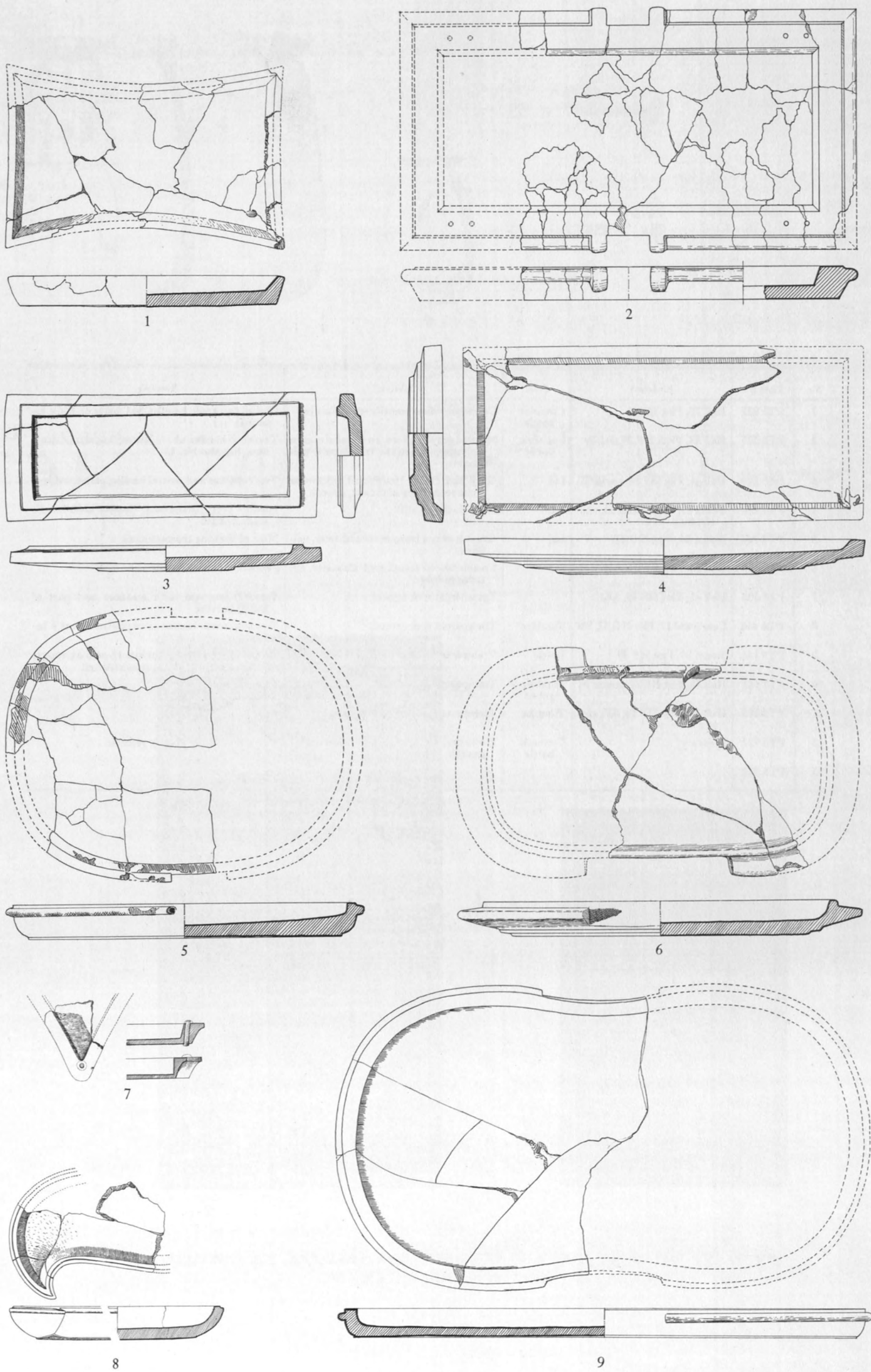


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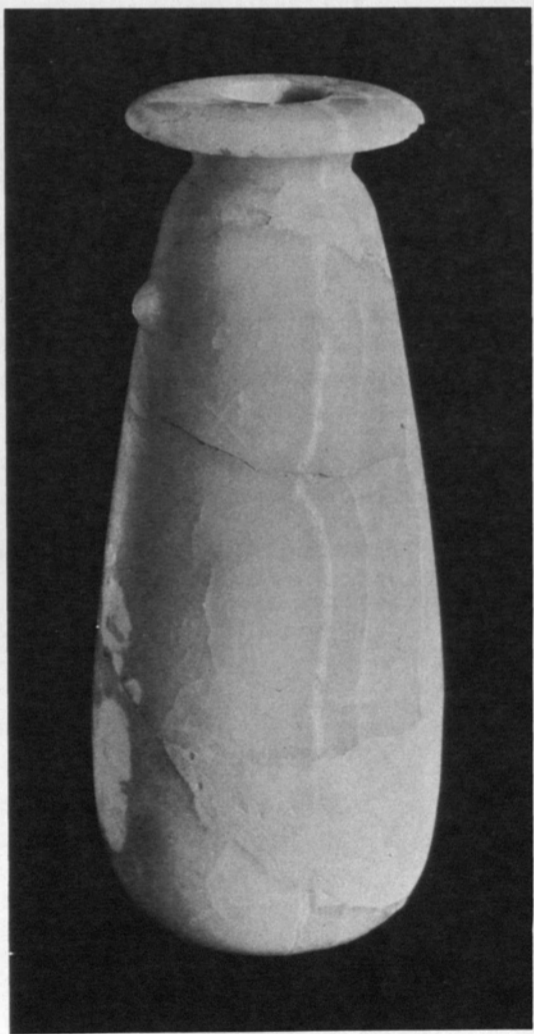
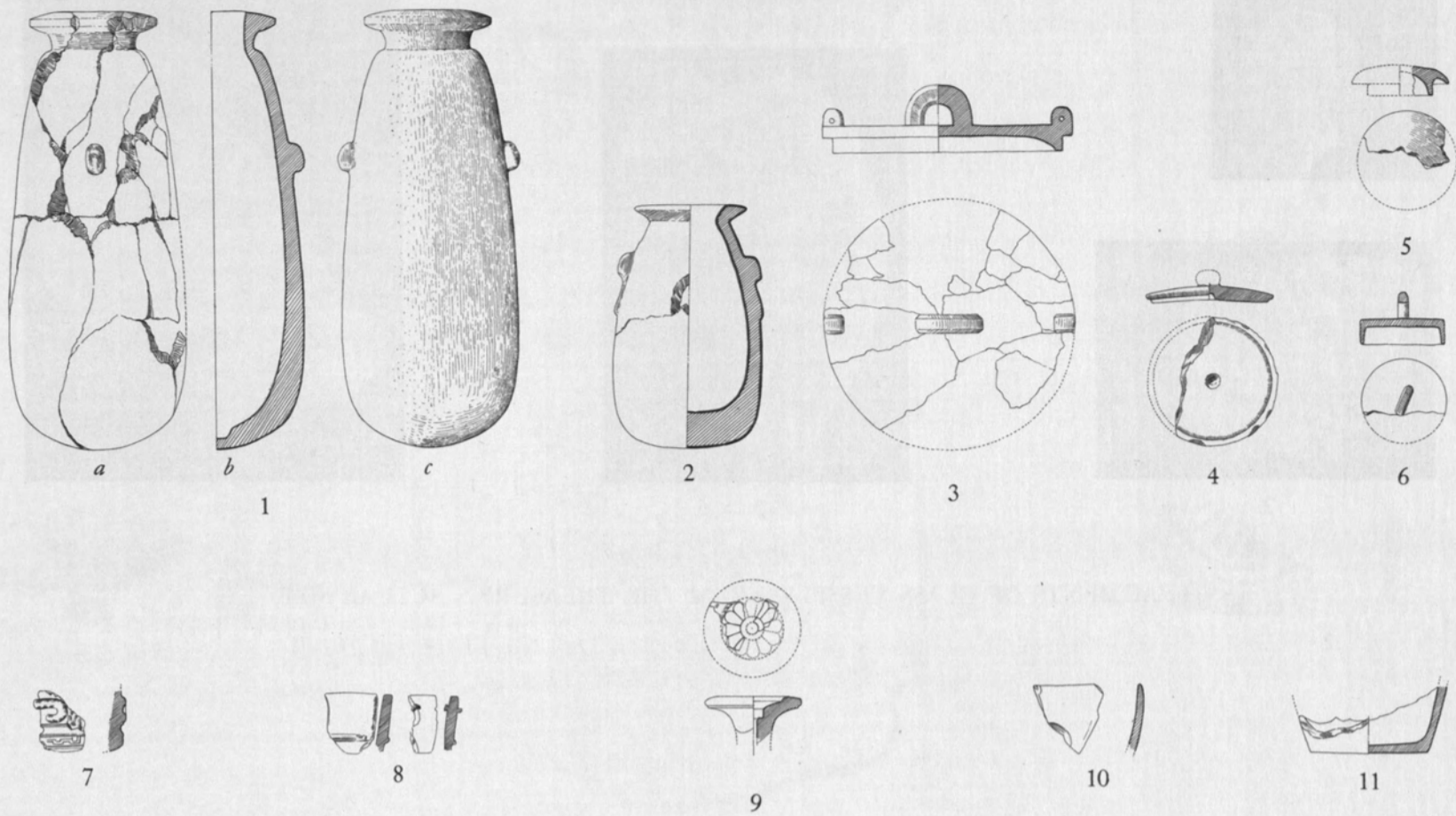
ACHAEMENID STONE TRAYS, FROM THE TREASURY. SCALES, 1:4 AND (NO. 5) 1:6

Pl. 63	Pl. 64	Field No.	Find-Spot	Material	Remarks
1	1	PT5 927	Hall 38, scattered in Plots HF 27, 29, 56	Mottled cream and yellowish-brown calcareous stone with maroon dots, smooth	Partly restored
2		PT5 322	Hall 41, NE. corner, floor, Plot HG 40	Black serpentine(?), polished	Partly restored
	2	PT5 162	Hall 41, Plot HG 40	Cream and gray calcareous stone, polished	About one-third of drawing reconstructed. Pairs of vertical holes in walls
3	3	PT6 507	Hall 38, scattered in Plots HG 10 and HF 27-29	Buff and purple calcareous stone, smooth	Complete after mending
4	4	PT5 384	Hall 38, Plot HF 49	Mottled black and green serpentine, polished	Partly restored
5		PT5 544	Hall 41, Plot HG 50	Finely speckled greenish-gray and white dioritic stone, polished	Two projections (one restored) at one narrow side
	5	PT5 528	Hall 41, Plot HF 49	Mottled red and grayish-white marble, polished	About two-thirds of drawing reconstructed
	6	PT5 930	Hall 38, Plot HF 27	Gray, orange, and cream marble, highly polished	Drawing reconstructed
	7	PT6 234	Room 53, floor at center of S. wall, Plot HF 57	Speckled gray and white granite, polished	Fragment with gold pin or rivet
	8	PT6 566	Treasury	Mottled green and gray serpentine, polished	Fragment; partial drawing reconstructed
	9	PT5 163	Hall 41, Plot HG 50, NW. corner	Green and gray diorite(?), polished	About half of drawing reconstructed

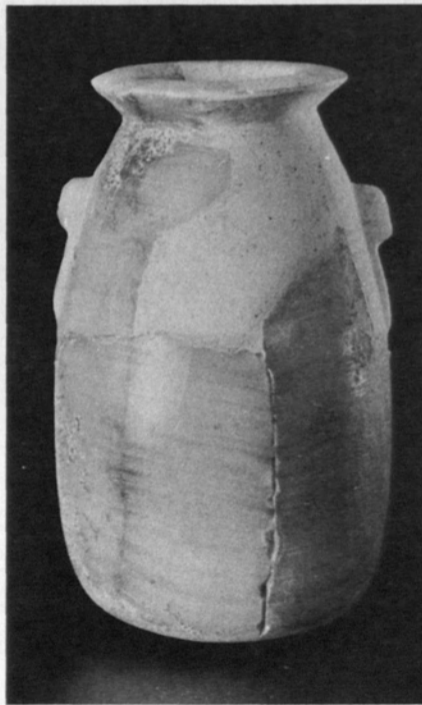


ACHAEMENID STONE TRAYS, FROM THE TREASURY. SCALE, 1:4

No.	Field No.	Find-Spot	Form	Material	Remarks
1	PT5 931	Hall 38, Plot HF 47	Cosmetic bottle	Creamish-yellow translucent alabaster	One of two knob handles and parts of body restored
2	PT5 525	Hall 38, Plots HF 29 and 39	Cosmetic bottle	Mottled grayish-green, cream, and orange alabaster, somewhat translucent, polished	Two knob handles above low rectangular projection. See also No. 13
3	PT5 279	Hall 41, Plot HF 59, center E.	Lid	Gray and cream translucent calcareous stone resembling alabaster, smooth	Two cord lugs and central handle; partly restored
4	PT4 412	Room 27(?), Plot HG 93, center, high	Lid	Grayish-tan steatite	Possibly post-Achaemenid. Central knob handle reconstructed
5	PT4 264	Room 33, Plot HG 51	Lid	Grayish-cream translucent alabaster, polished	Most of drawing reconstructed
6	PT5 709	Hall 38, Plot HF 29, center E.	Lid	Cream-colored translucent alabaster, exterior polished	Perforated central handle
7	PT5 308	Hall 41, Plot HF 49, SE.		Transparent rock crystal	Vessel(?) fragment with meander and part of tail(?) in relief
8	PT4 166	Courtyard 17, Plot HG 52, SW	Tumbler?	Transparent rock crystal	Two fragments; bronze piece pierces wall of <i>b</i> below rim
9	PT5 141	Room 39, Plot HF 49	Bottle	Transparent rock crystal, polished	Two neck fragments; incised 12-petaled rosette incloses narrow orifice; reconstructed
10	PT5 667	Hall 38, Plot HF 29, center N.	Tumbler or goblet	Transparent rock crystal	Rim fragment
11	PT5 105	Hall 38, Plot HF 19, SE. corner	Tumbler	Transparent rock crystal, polished	Base
12	PT6 722	Treasury	Cosmetic bottle	White and cream translucent alabaster, smooth	Two knob handles; partly restored
13	PT5 525				See No. 2



12



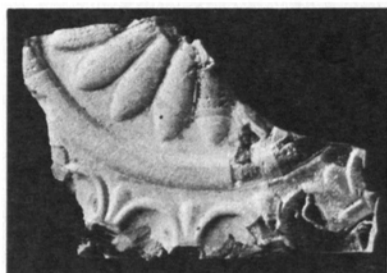
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ACHAEMENID BOTTLES, LIDS, AND TUMBLERS OF STONE, FROM THE TREASURY  
SCALES, 1:4 AND (NOS. 12-13) 1:2

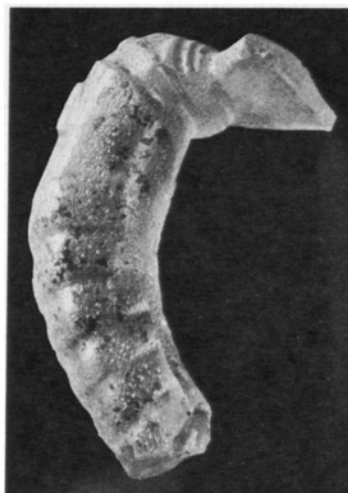
## PLATE 66



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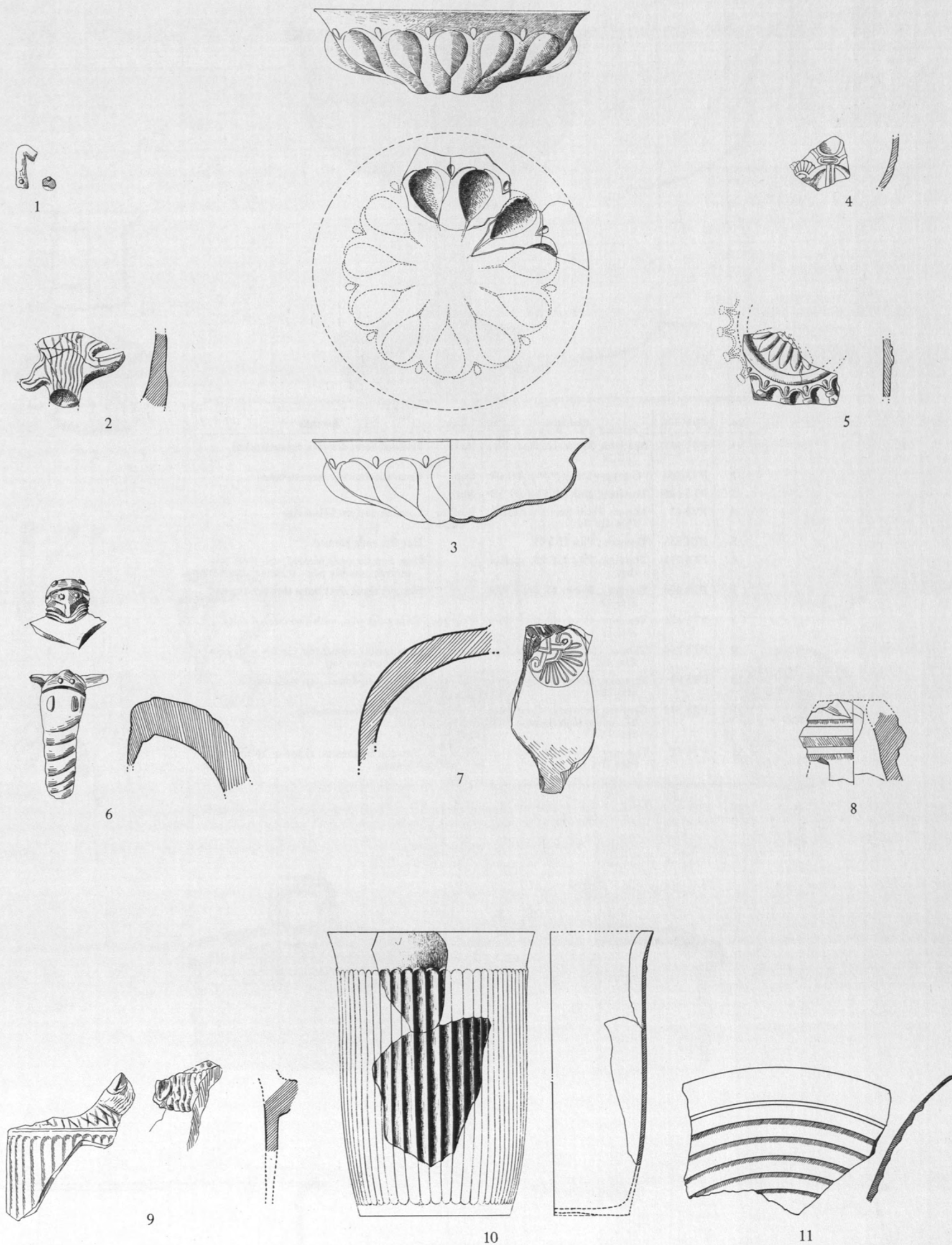
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FRAGMENTS OF GLASS VESSELS, FROM THE TREASURY. ACTUAL SIZE

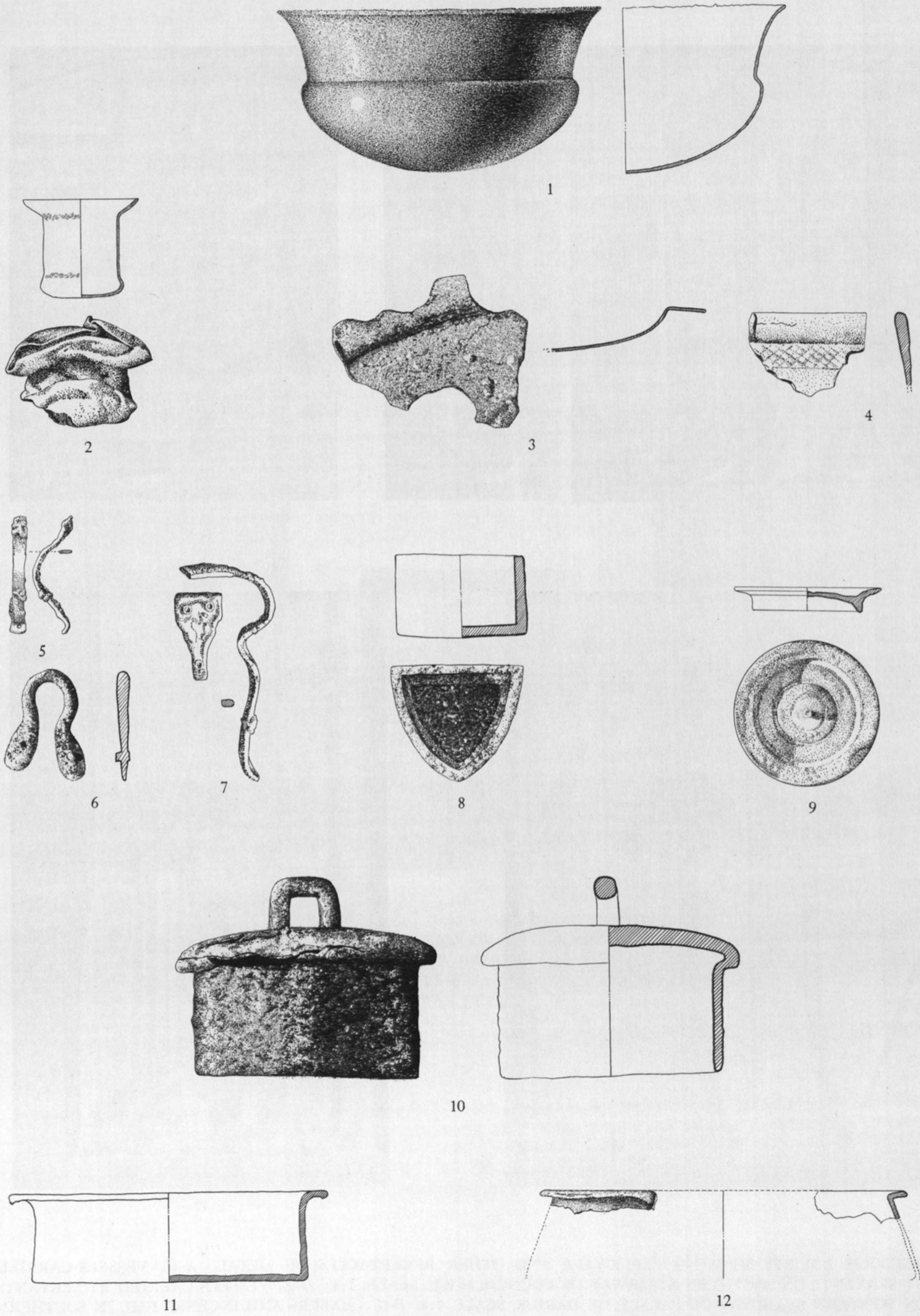
Pl. 66	Pl. 67	Field No.	Find-Spot	Form	Material	Remarks
	1	PT6 695	Room 77, NE. corner, Plot IG 22		Blue, white stains	Handle fragment; small applied yellow gold pellet
	2	PT5 643a	Hall 41, Plot HF 59		Transparent, iridescent	Ornamental projections, incised wavy lines
	3	PT6 283	Room 52, E., Plot HF 56	Bowl	Transparent, very light greenish tint, iridescent	Molded, floral pattern with concavo-convex lobes; reconstructed. Views of side, top, side with half-section
1	4	PT6 76	Hall 41, Plot HG 70		Transparent, iridescent	Molded, remnant of pattern with palmette
2	5	PT5 643b	Hall 41, Plot HF 59		Transparent, iridescent	Molded, design fragment of rosette encircled by garland
3	6	PT5 786	Hall 38, Plot HF 37, SE.	Pitcher?	Transparent, iridescent	Handle; grooved, top in form of stylized animal head(?)
4	7	PT5 772	Hall 38, Plot HF 37, center N.	Lid	Transparent, greenish tint, iridescent	Fragment of incised design with palmette
	8	PT5 247	Hall 38, Plot HG 20, center E.	Bottle	Transparent, iridescent	Neck fragment; wheel-cut horizontal grooves
	9	PT5 390	Hall 41, Plot HG 80, NE. corner		Transparent, slightly greenish, iridescent	Molded, remnant of animal head(?) above fluted portion
	10	PT6 280	Room 52, in E. doorway, Plot HF 56	Beaker	Transparent, iridescent	Wheel-cut flutes. Reconstructed side view and half-section
	11	PT5 106	Hall 38, Plot HF 19, SE. corner	Bowl	Transparent, iridescent	Wheel-cut horizontal grooves



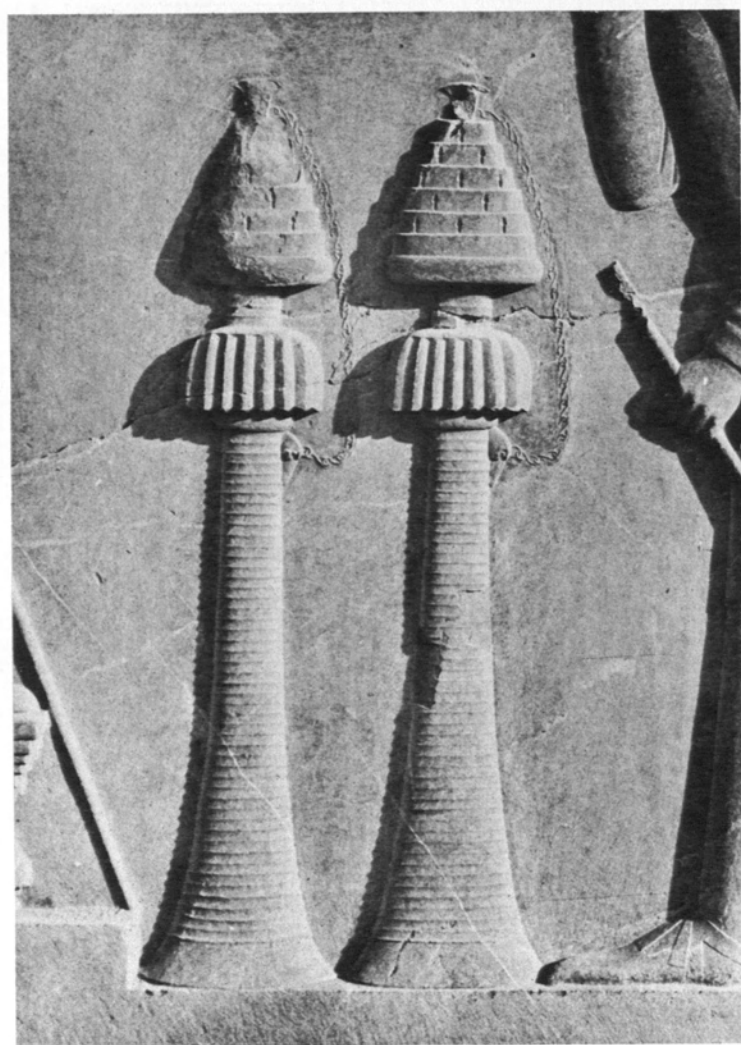
FRAGMENTS OF GLASS VESSELS, FROM THE TREASURY. SCALES, 1:2 AND (NO. 3) 1:4

No.	Field No.	Find-Spot	Form	Remarks
1	PT7 117	Apadana, Room 12, floor, Plot HE 34	Bowl	Fragmentary; drawing reconstructed
2	PT3 390	"Garrison Street," Plot IG 05	Cup	Crushed; drawing reconstructed
3	PT5 646	Treasury, Hall 41, Plot HF 59	Bowl	
4	PT5 61	Throne Hall, portico, debris, Plot GF 34	Bowl or cup	Lozenge pattern below rim
5	PT4 233	Treasury, Plot HG 61		Handle; ends pierced
6	PT6 115	Treasury, Plot HF 25, surface dirt		Loop handle; ends pierced, one rivet preserved; possibly post-Achaemenian
7	PT4 496	Treasury, Room 15, floor, Plot HG 42		Handle; three rivet holes through top end
8	PT5 471	Treasury, Room 40, floor, Plot HG 12	Crucible	Triangular plan with two curved sides
9	PT5 286	Throne Hall, portico, debris, Plot GF 31	Lid	Ornamental concentric circles with central knob on top
10	PT5 94	Treasury, Room 40, floor, Plot HG 22	Lid	Cylindrical, domed top with handle
11	PT3 333	Garrison quarters, Courtyard 14, on top of drain pipe, Plot HG 75	Basin	Complete after mending
12	PT6 11	Treasury, Room 48, doorway, Plot HG 11	Basin	Two rim fragments; shape of bottom unknown





BRONZE VESSELS. SCALES, 1:2 AND (NOS. 11-12) 1:4

*A**B**C**D**E**F**G*

PERSEPOLIS RELIEFS SHOWING TABLEWARE AND OTHER RECEPTACLES OF METAL. *A-C*. VESSELS CARRIED BY SERVANTS ON SOUTHERN STAIRWAY OF COUNCIL HALL. SCALE, 1:4. *D-E*. VESSELS CARRIED BY SERVANTS ON WESTERN STAIRWAY OF PALACE OF DARIUS. SCALE, 1:8. *F-G*. CENSERS AND INCENSE PAIL IN SOUTHERN RELIEF OF TREASURY. SCALE, 1:10

*A**B**C**D**E**F*

METAL VESSELS OFFERED AS TRIBUTE IN PROCESSION ON EASTERN STAIRWAY OF APADANA. SCALES, ABOUT 1:2 (D) AND 1:4. A. TWO BOWLS OF THE IONIAN(?) DELEGATION. B-C. TWO CUPS AND TWO BOWLS OF THE BACTRIAN(?) DELEGATION. D. ONE OF TWO VESSELS WITH BULL HANDLES OF THE SYRIAN DELEGATION. E. VESSEL WITH THREE HANDLES OF THE MEDIAN DELEGATION. F. VESSEL WITH GRIFFIN HANDLES OF THE ARMENIAN(?) DELEGATION

No.	Field No.	Find-Spot	Form	Surface	Paste	Remarks	Scale*
1	PT6 701	Treasury, Room 86, floor, Plot IG 40	Bowl	Red- and gray-brown, scorched dark gray stains, slightly granulate, exterior base and interior pitted	Grayish brown, exterior edge red-brown, medium fine, medium soft	See also Pl. 72:3	
2	PT6 472	Treasury, Vestibule 50, .25 above N. doorsill, Plot HG 01	Jar	Dark gray, scorched, originally gray-brown, granulate, wheel marks on exterior	Light gray-brown, medium fine, medium hard	Bottom slightly convex. See also Pl. 72:8	
3	PT3 171	Garrison quarters, Plot HG 86	Jar	Light red-brown, dark brown patches, wet-smoothed	Gray, medium fine, white grits, well baked	See also Pl. 72:9	
4	PT3 261	Garrison quarters, Room 11, floor, Plot HG 76	Jar	Red-brown, burnished, traces of white film	Red-brown, medium fine, well baked	Lateral spout with trefoil orifice, handle(?) missing. See also Pl. 72:11	
5	PT3 295	Garrison quarters, Yard 20, Plot HG 96	Jar or pitcher	Red-brown, wet-smoothed, horizontal striations	Light red-brown, rather fine, well baked	Trefoil orifice, handle(?) not preserved	1:6
6	PT3 193	Garrison quarters, Room 12, Plot HG 76	Pitcher	Light red slip, mostly flaked off, scorched	Light red, medium fine, well baked	Trefoil orifice, handle made of two strips with square cross section. See also Pl. 72:10	
7	PT3 294	Garrison quarters, Plots HG 87 and 96	Pitcher	Black, covered with light-colored pits	Grayish brown, medium fine, well baked	Trefoil orifice	1:6
8	PT3 216	Garrison quarters, Room 17, Plot HG 96	Canteen	Light red and tan	Red-brown, rather fine, well baked	Two lug handles, cord guide at either side, biconvex, elliptical cross section	1:4
9	PT3 145	Garrison quarters, Room 16, SE. corner, Plot HG 87	Canteen	Red-brown	Light red-brown, medium fine, well baked	Flat back, convex front, no handles. See also Pl. 72:13	
10	PT3 260	Garrison quarters, Room 11, floor, Plot HG 76	Storage jar	Red-brown, dark red-brown weathered slip, burnished	Dark gray core, red-brown edges, coarse	See also Pl. 72:14	
11	PT3 146	Garrison quarters, Plot HG 86	Bottle	Dark brown wash over red-brown, vertical burnish marks, wet-smoothed, pitted	Light tan, medium		1:8
12	PT3 147	Garrison quarters, Room 16, NE. corner, Plot HG 86	Bottle	Brown with yellow and buff shades, traces of thin brown wash, scorched at base	Light brown, medium	See also Pl. 72:16	
13	PT3 311	Garrison quarters, Yard 20, Plot HG 97	Bottle	Light red-brown, smoothed, granulate	Red-brown, medium fine, white grits	Pointed bottom. See also Pl. 72:17	

\* Where omitted, see Pl. 72 for scale of drawings.



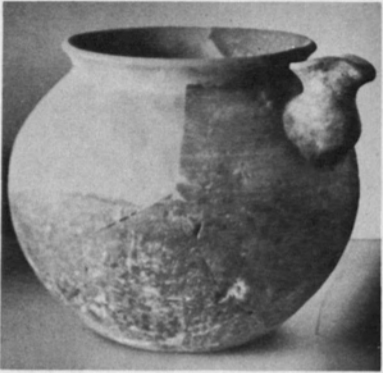
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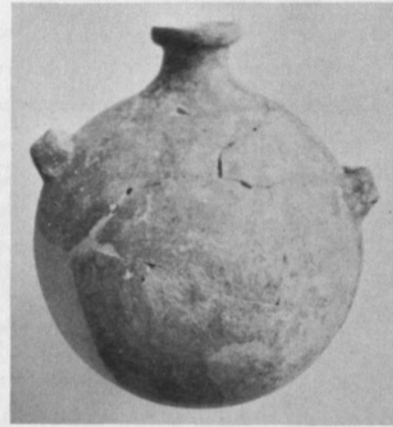
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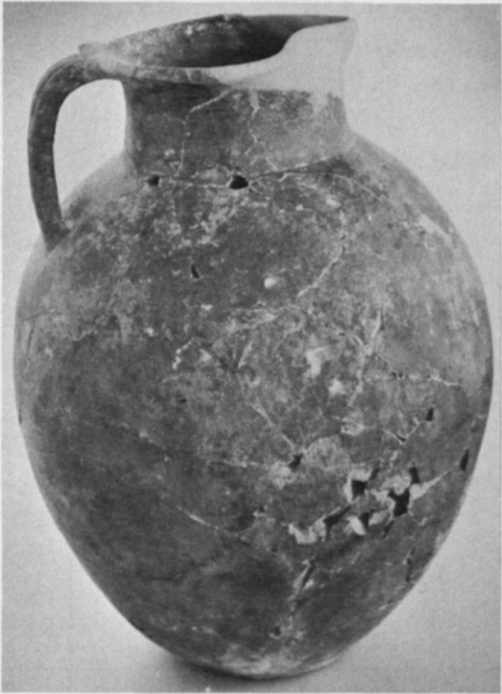
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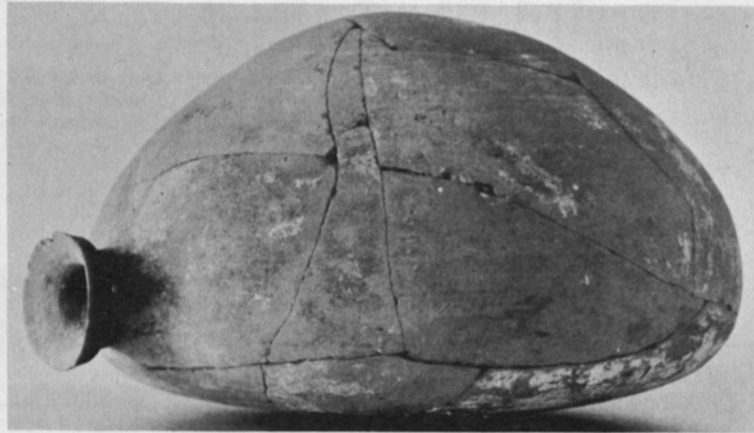
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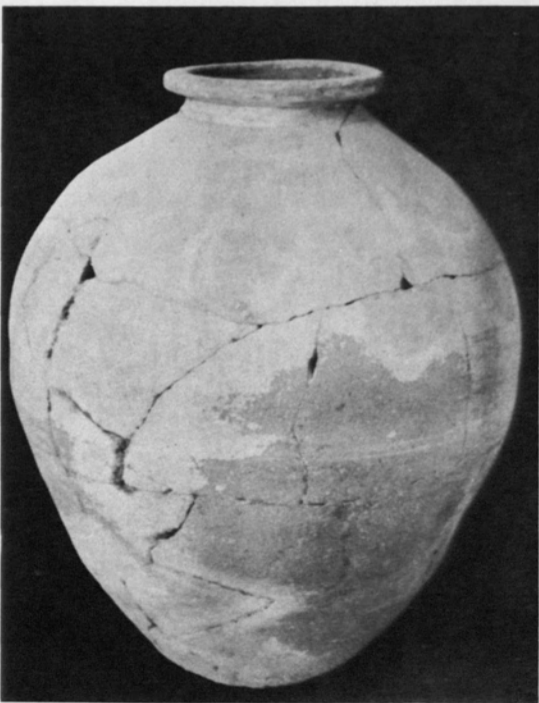
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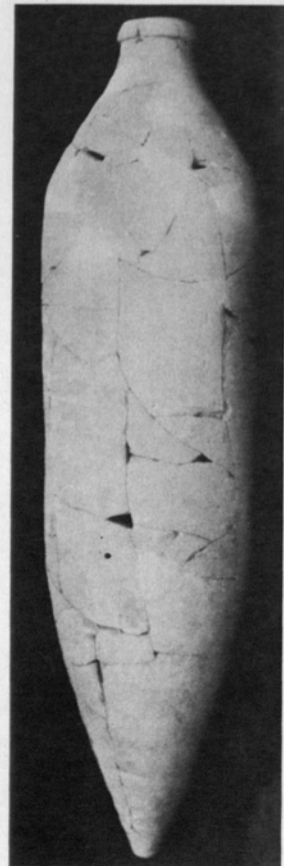
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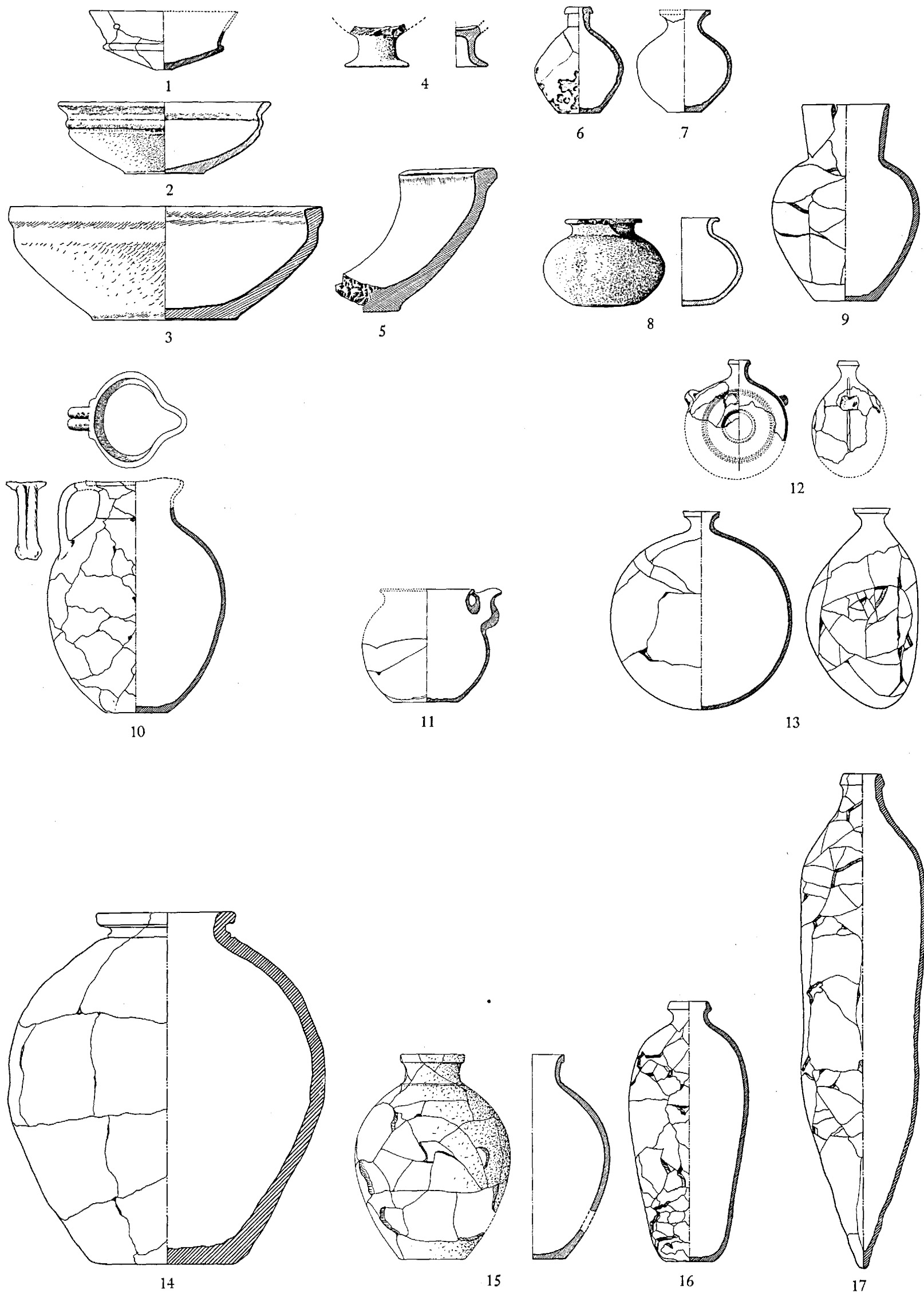


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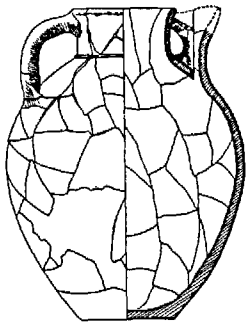
No.	Field No.	Find-Spot	Form	Surface	Paste	Remarks	Scale
1	PT3 231	"Garrison Street," Plot HG 85	Bowl	Light red, weathered burnish on outer rim and interior	Light red, fine, fairly well baked	Pronounced shoulder, small flat base	1:4
2	PT6 608	Treasury, Room 78, floor, Plot IG 23	Bowl	Grayish brown, reddish streak along groove above shoulder ridge	Grayish brown, slightly reddish, medium fine, medium hard		1:4
3	PT6 701					See Pl. 71:1.	1:4
4	PT7 145	Apadana, S. porch, Plot HE 43	Footed bowl	Light brown	Light brown	Foot only	1:4
5	PT4 1164Sb	Treasury, Plot HG 61	Bowl	Gray and brown, wet-smoothed	Gray core, red-brown edges, coarse		1:4
6	PT3 309	Garrison quarters, Room 7, floor, Plot HG 75	Bottle	Thin mat greenish-blue glaze turned largely yellow, no crackle, patches flaked off	Light yellowish brown, fine		1:4
7	PT3 232	Garrison quarters, Room 7, floor, Plot HG 85	Jar	Grayish red-brown slip, dark brown where scorched	Light brown, medium fine, well baked		1:4
8	PT6 472					See Pl. 71:2	1:4
9	PT3 171					See Pl. 71:3	1:4
10	PT3 193					See Pl. 71:6	1:8
11	PT3 261					See Pl. 71:4	1:8
12	PT3 59	Garrison quarters, Room 16, at center of S. wall, Plot HG 86	Canteen	Gray-brown slip, light and dark shades, mostly abraded, probably burnished	Gray, medium coarse, medium hard	Two lug handles, cord guide at either side, ornamental concentric wheel marks on front. Gold signet ring (PT3 60; see p. 46) found inside	1:8
13	PT3 145					See Pl. 71:9	1:8
14	PT3 260					See Pl. 71:10	1:8
15	PT7 54	Apadana, SE. tower, Vestibule 8, floor, Plot HE 15	Storage jar	Light brown shades	Light brown		1:8
16	PT3 147					See Pl. 71:12	1:8
17	PT3 311					See Pl. 71:13	1:8



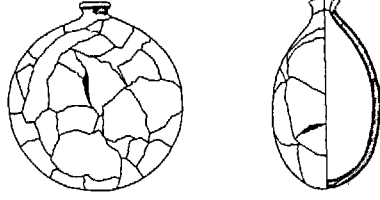
POTTERY FROM THE TREASURY, THE QUARTERS OF THE GARRISON, AND THE APADANA

No.	Field No.	Form	Surface	Paste	Remarks	Scale
1	PT5 629	Pitcher	Originally red-brown wash, darkened by smoke, vertical striations made by smoothing device	Red-brown, medium fine, medium hard	Vertical spout on shoulder, trefoil orifice (reconstructed) attached to neck, handle with circular cross section	1:8
2	PT5 633	Canteen	Grayish-brown slip, smooth	Light red-brown, medium fine, hard	Neck reconstructed	1:8
3	PT5 263	Jar	Red-brown wash or slip, partly abraded	Red-brown, rather fine, medium hard	Two fragmentary knob handles suggesting couchant animal; rim reconstructed. Found at fireplace of southern room (Plot HF 35)	1:4
4	PT5 627	Jar	Grayish-brown and in parts red-brown slip, black-outlined firing clouds with red-brown centers, smooth, slightly granulate, vertical striations made by smoothing device	Red-brown, medium fine, medium hard	Horizontal handle with rectangular cross section on shoulder, short tubular spout beside one end of handle	1:8
5	PT5 637	Bottle	Red-brown wash(?), granulate, some vertical striations	Red-brown, medium fine, hard		1:8
6	PT5 628	Bottle	Light grayish-brown wash(?), in parts orange and greenish gray	Light brown, medium fine, medium soft	Lumps of green vitrified substance with red particles adhere to partly squashed lower body, which during firing may have touched some object made of this substance (probably opaque red glass; see pp. 130-32)	1:8
7	PT5 639	Storage jar	Light red-brown and gray	Red-brown, medium coarse, hard	Moldings on neck; ten ridges reinforce body. Bottom found in southern room	1:8

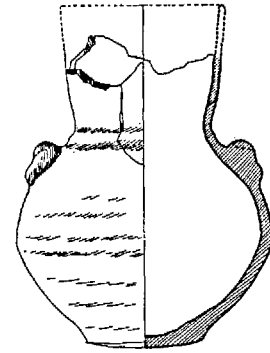




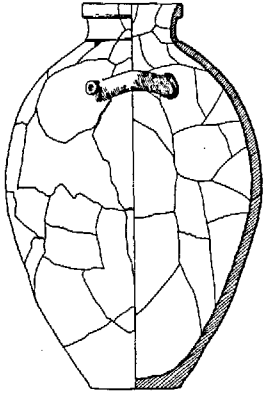
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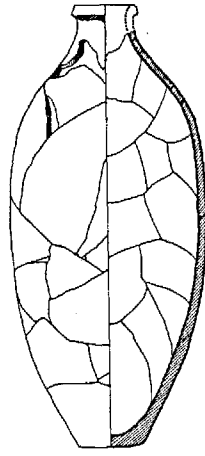
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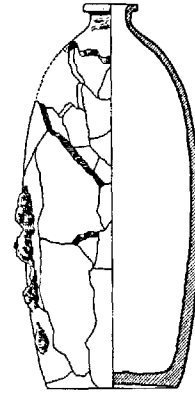
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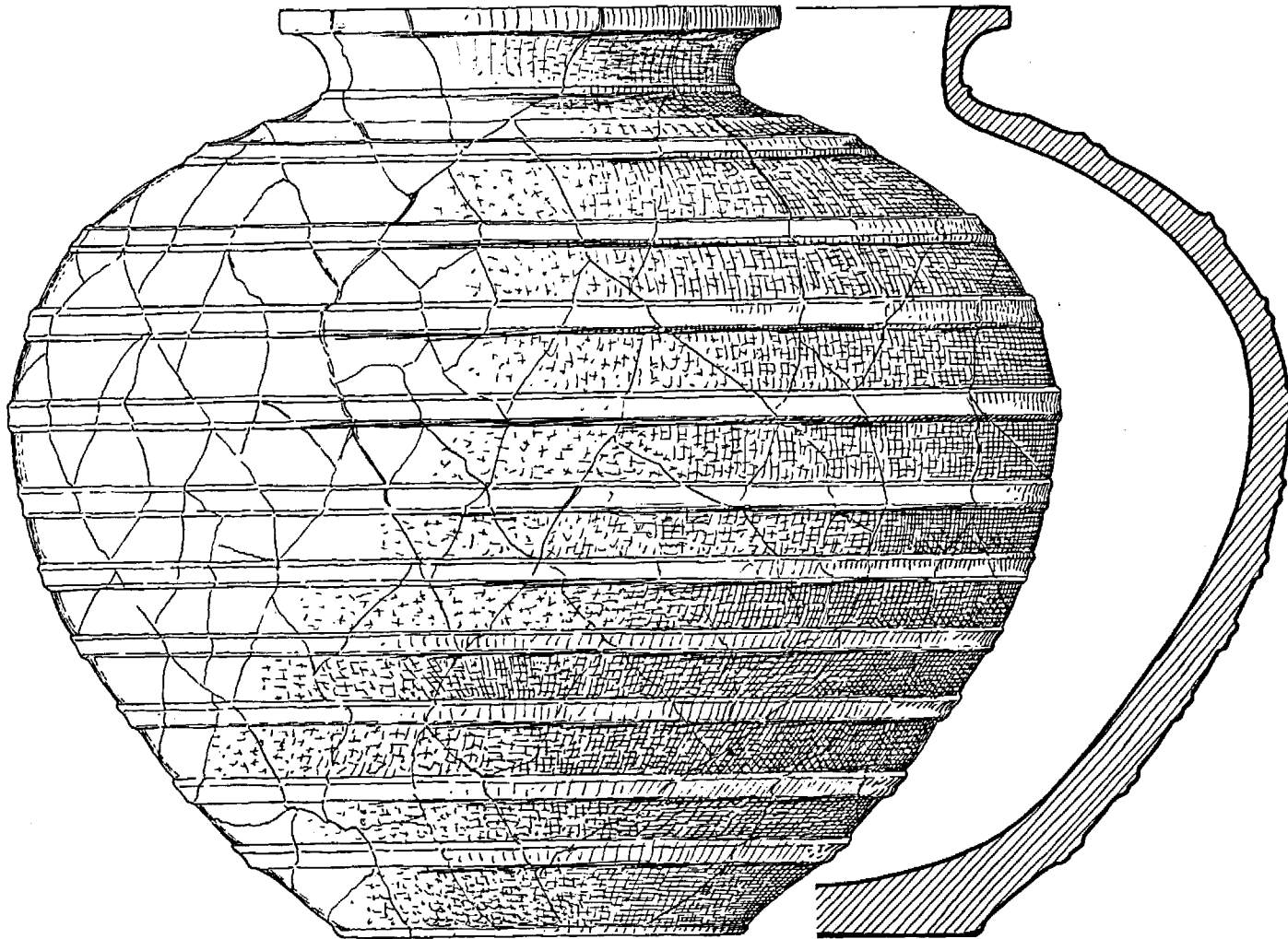
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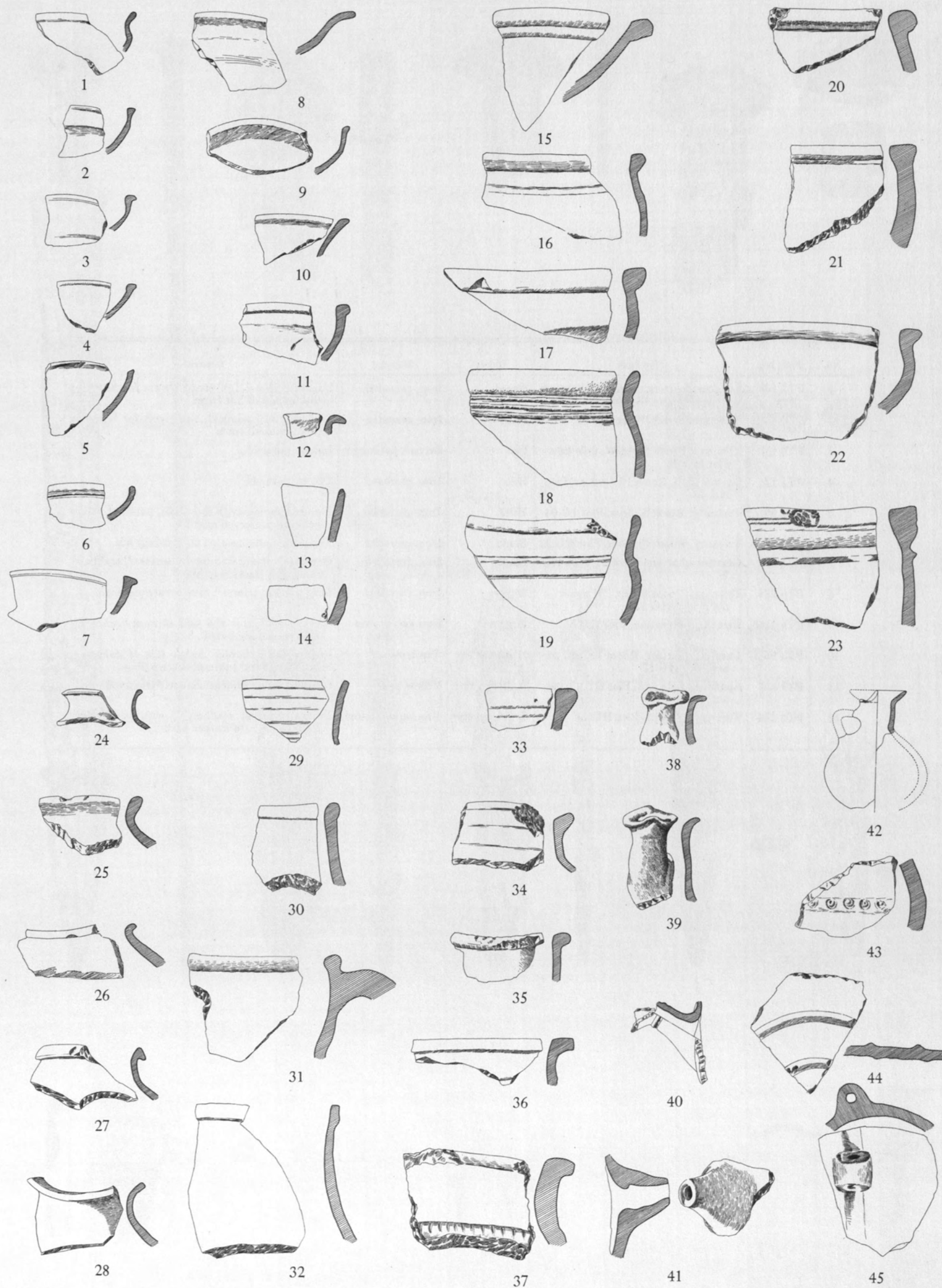
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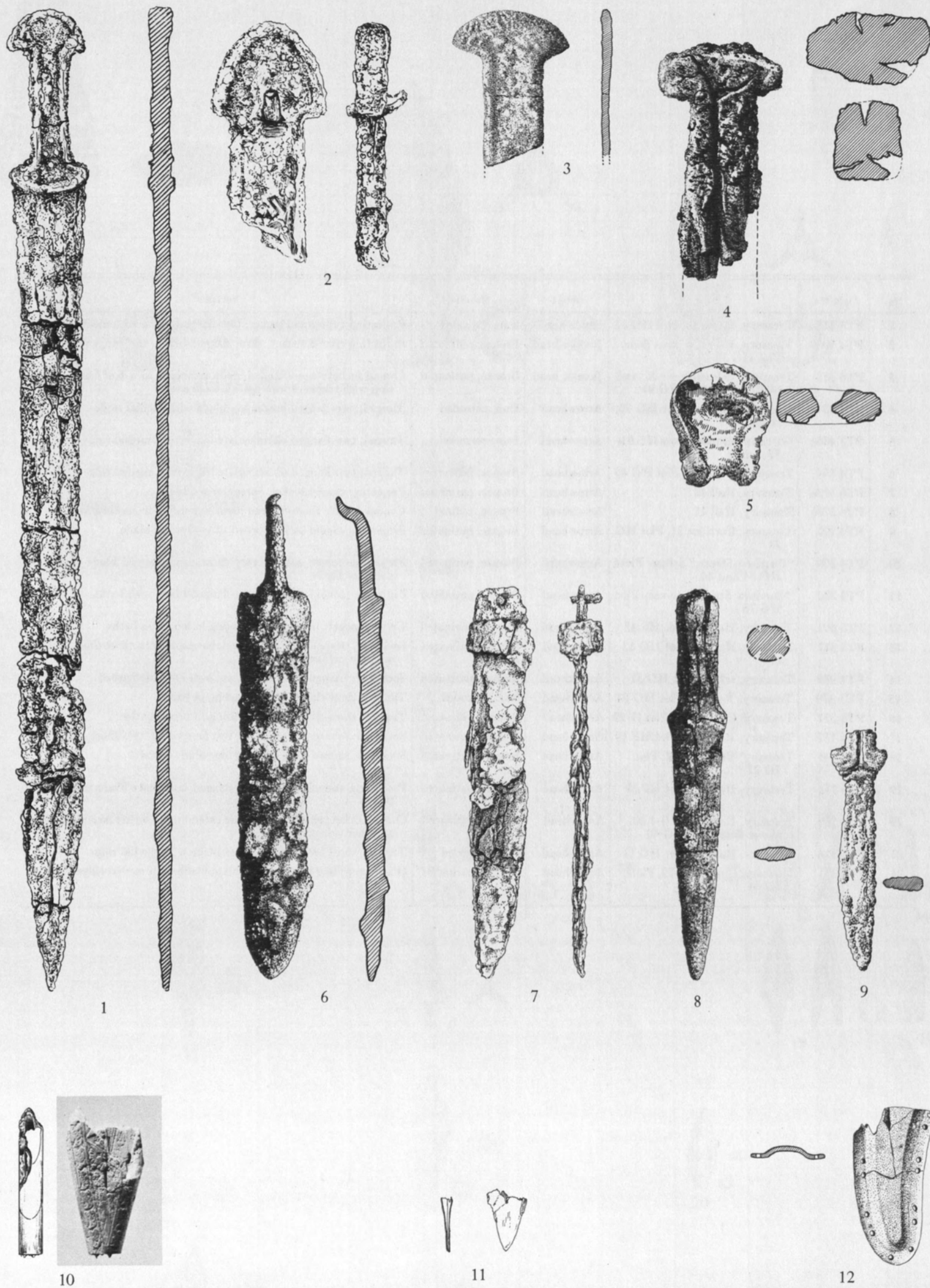
POTTERY FROM THE NORTHERN ROOM (UNLESS OTHERWISE NOTED) OF THE SECONDARY STRUCTURE IN "HAREM STREET"

No.	Field No.	Find-Spot	Surface	Paste	Remarks
1	PT3 349:1	Eastern fortification, Plot HG 78	Brown wash	Red-brown, medium fine	
2	PT3 351:9	Garrison quarters, Plot HG 86	Purplish red-brown wash	Red-brown; partly gray, medium	
3	PT3 351:5	Garrison quarters, Plot HG 86	Red-brown	Red-brown, medium fine	
4	PT3 351:6	Garrison quarters, Plot HG 86	Red-brown wash	Red-brown, medium fine	
5	PT3 351:8	Garrison quarters, Plot HG 86	Gray-brown, wet-smoothed	Light brown, slightly yellowish, medium	
6	PT3 354:10	Garrison quarters, Plot HG 96	Red-brown wash	Yellowish brown, medium fine	
7	PT3 347:3	Garrison quarters, Plot HG 75	Red-brown	Red-brown, medium fine	
8	PT3 350:5	"Garrison Street," Plot HG 85	Red-brown slip, burnished	Red-brown, medium fine	
9	PT4 1162S:2	Treasury, Plot HG 51	Gray, wet-smoothed, rough	Gray, medium coarse	
10	PT3 350:3	"Garrison Street," Plot HG 85	Light brown	Buff, medium fine	
11	PT3 348:1	Garrison quarters, Plot HG 76	Red-brown, wet-smoothed	Red-brown, medium	
12	PT3 355:4	Garrison quarters, Plot HG 97	Red-brown slip	Red-brown, medium	
13	PT3 355:5	Garrison quarters, Plot HG 97	Grayish red-brown, burnished	Dark red-brown, medium fine	
14	PT3 354:4	Garrison quarters, Plot HG 96	Red-brown, burnished	Red-brown, medium fine	
15	PT4 1161S	Treasury, Plot HG 11	Red-brown, wet-smoothed	Gray core, red-brown edges, coarse	
16	PT3 352:1	Eastern fortification, Plot HG 87	Red-brown wash	Light brown and red-brown, medium fine	
17	PT4 1162S:1	Treasury, Plot HG 51	Yellowish brown, granulate	Red-brown, coarse	
18	PT4 1151	Treasury, Plot HG 41	Light buff-brown	Light brown, medium	
19	PT3 348:2	Garrison quarters, Plot HG 76	Brown wash on exterior, interior red-brown	Gray core, red-brown edges, medium	
20	PT4 1146:4	Trench E. of Throne Hall, Plot GF 79	Red, wet-smoothed	Red-brown, medium	
21	PT4 1146:1	Trench E. of Throne Hall, Plot GF 79	Yellowish-brown slip on exterior and interior	Brown, medium	
22	PT3 351:4	Garrison quarters, Plot HG 86	Grayish red-brown wash	Red-brown, coarse	
23	PT4 1148	Treasury, Plot HG 32	Yellowish brown	Yellowish brown, coarse	
24	PT3 354:8	Garrison quarters, Plot HG 96	Brown-red	Brown-red, rather fine	
25	PT3 350:1	"Garrison Street," Plot HG 85	Purplish red-brown slip, burnished	Red-brown, coarse	
26	PT4 1160S	Treasury, Room 71, Plot IG 16	Slip with gray and brown shades	Light red-brown, medium fine	
27	PT3 354:2	Garrison quarters, Plot HG 96	Buff-brown	Buff-brown, rather fine	
28	PT4 1149	Treasury, Plot HG 33	Red-brown	Red-brown, medium fine	
29	PT4 1146:5	Trench E. of Throne Hall, Plot GF 79	Red-brown wash(?), horizontal rubbing marks	Red-brown, medium	
30	PT4 1159S	Treasury, Plot HG 83	Light brown	Light red-brown, medium	
31	PT3 351:2	Garrison quarters, Plot HG 86	Gray-brown	Red-brown, medium fine	Remnant of handle
32	PT3 351:1	Garrison quarters, Plot HG 86	Gray-brown	Light brown, medium fine	
33	PT3 355:1	Garrison quarters, Plot HG 97	Red-brown	Red-brown, medium fine	
34	PT4 1164S:3	Treasury, Plot HG 61	Red-brown, granulate, wet-smoothed	Red-brown, coarse	
35	PT4 1158S	Treasury, Plot HG 83	Glazed, light greenish yellow (decomposed), flaky, crackled	Light grayish brown, medium fine	
36	PT4 1164S:1	Treasury, Plot HG 61	Red-brown wash, granulate	Gray core, red-brown edges, coarse	
37	PT3 353:2	"Garrison Street," Plot HG 95	Reddish gray-brown wash(?)	Gray core, red-brown edges, coarse	Indented ridge at neck base
38	PT4 1154	Treasury, Plot HG 63	Yellowish brown	Gray and light brown, medium coarse	Pitcher neck or spout, pinched orifice
39	PT4 1165S:1	Treasury, Plot HG 72	Gray-brown, wet-smoothed	Gray, medium coarse	Spout (cf. Pl. 72:11)
40	PT4 1146:3	Trench E. of Throne Hall, Plot GF 79	Light brown slip	Light red-brown, medium coarse	Spout
41	PT3 354:14	Garrison quarters, Plot HG 96	Speckled tan and dark gray	Gray, medium	Spout
42	PT3 353:5	"Garrison Street," Plot HG 95	Gray, granulate, wet-smoothed	Gray, medium fine	Small pitcher
43	PT3 350:4	"Garrison Street," Plot HG 85	Grayish red-brown	Red-brown, medium	Band with ornamental depressions
44	PT3 354:6	Garrison quarters, Plot HG 96	Red-brown, burnished	Gray core, red-brown edges, medium	Lid(?) with concentric ridges
45	PT3 354:15	Garrison quarters, Plot HG 96	Gray wash	Gray core, red-brown edges, medium	Lug and cord guide of canteen



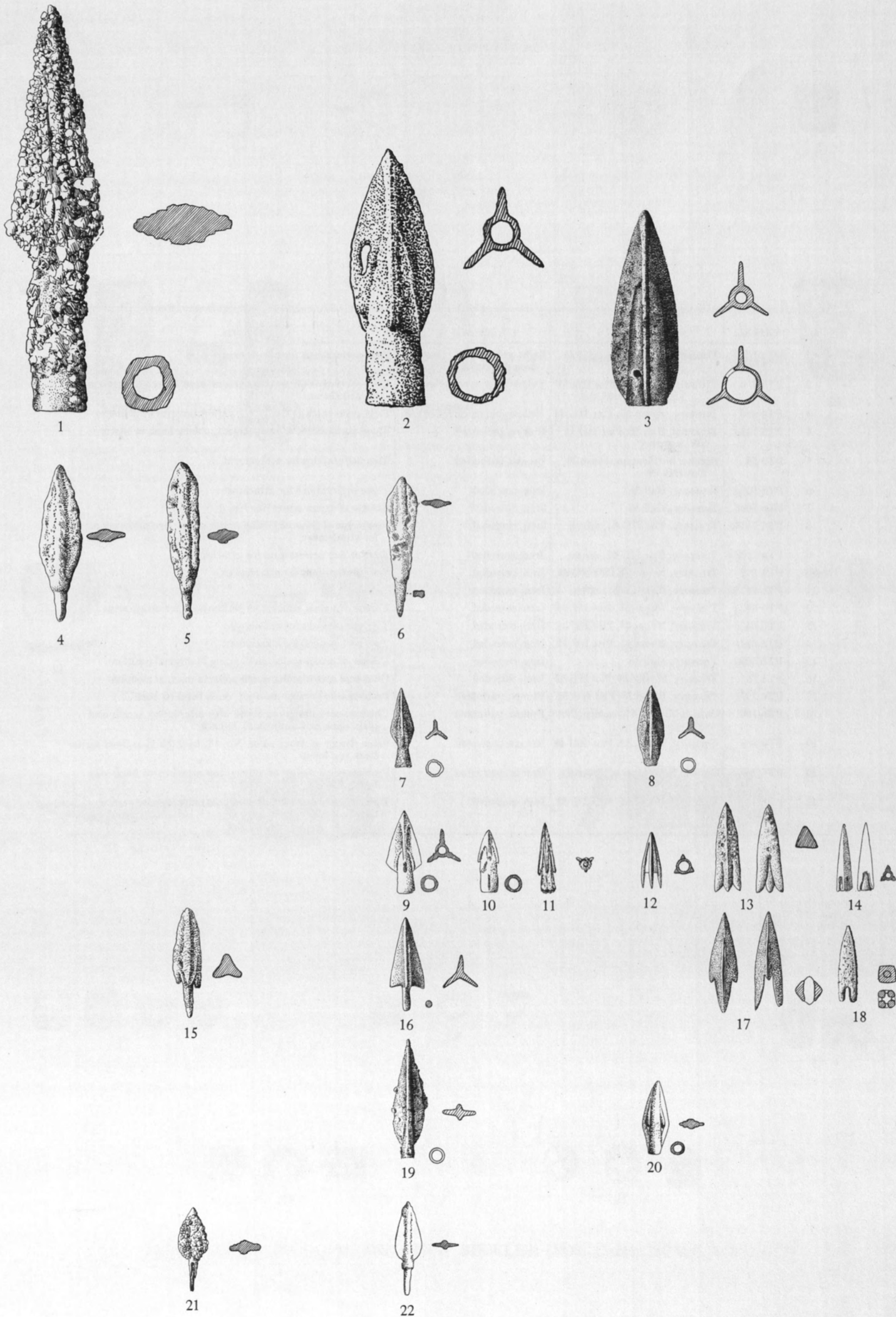
POTSHERDS FROM VARIOUS LOCATIONS ON THE TERRACE. SCALE, 1:4. NOS. 1-23. FRAGMENTS OF BOWLS  
NOS. 24-45. FRAGMENTS OF JARS, PITCHERS, CANTEENS, AND LID(?)

No.	Field No.	Find-Spot	Object	Material	Remarks
1	PT3 135	Garrison quarters, on doorsill between Rooms 16 and 18, Plot HG 96	Sword	Iron, corroded	Lunate pommel and guard; rivets for fastening (decomposed) hilt cover
2	PT3 161	"Garrison Street," Plot HG 85, NE.	Hilt	Iron, corroded	Semi-elliptical pommel; two rivets for fastening (decomposed) cover
3	PT6 137	Treasury, Room 51, in W. doorway, Plot HG 02	Hilt	Bronze, patinated	Lunate pommel
4	PT7 17	Council Hall, Room 19a, refuse, Plot HE 46	Hilt	Iron, corroded	Oblong pommel
5	PT4 50	Treasury, Room 5, floor, Plot 1G 04	Hilt?	Iron, corroded	Domed pommel with rivet hole, patch of yellow gold foil preserved near top
6	PT5 70	Treasury, Room 40, floor, Plot HG 22	Blade	Iron, corroded	Tang originally inserted in (missing) hilt
7	PT3 297	Garrison quarters, Yard 21, Plot HG 77	Blade	Iron, corroded	One edge curved; iron top of (leather?) scabbard; rivet near fracture of hilt
8	PT5 291	Treasury, Room 40, ca. .70 above floor, Plot HG 12	Dagger	Iron, corroded	Grip without pommel, simple ridge as guard
9	PT4 1165	Eastern fortification, Plot HG 88	Dagger	Iron and bronze	Single-edged blade and tang of iron; bronze hilt with projecting guard
10	PT3 95	Garrison quarters, Room 16, SE. corner, Plot HG 87	Scabbard tip	Tan bone	Problematical border design (file of animals?) inclosing floral pattern; reverse plain
11	PT7 127	Apadana, main hall, Plot HE 13, center N.	Scabbard tip?	Yellow gold	Hollow, plain fragment filled with decayed wood
12	PT5 274	Treasury, Hall 38, Plot HG 22	Scabbard tip?	Bronze, patinated	Frontal piece of scabbard(?) with perforations for fastening (to leather back?)



SWORDS, DAGGERS, AND SCABBARD TIPS. SCALES, 1:4 (NOS. 1, 6-9) AND 1:2

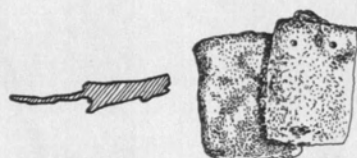
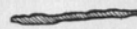
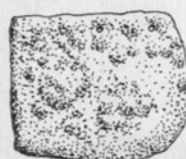
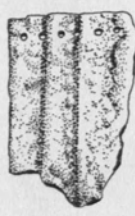
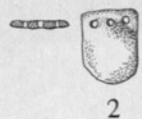
No.	Field No.	Find-Spot	Object	Material	Remarks
1	PT5 225	Treasury, Room 40, Plot HG 22	Lance head	Iron, corroded	Projecting cylindrical socket; two-flanged blade with medial ridge
2	PT4 1030	Treasury, Room 35, near floor, Plot HG 32	Javelin head	Bronze, patinated	Projecting conoid socket; three-flanged blade, one flange perforated
3	PT6 353	Treasury, debris above N. wall of Room 64, Plot HG 91	Javelin head	Bronze, patinated	Conoid socket; three-flanged blade extending to socket base; perforation with traces of iron nail through socket
4	PT3 431a	Garrison quarters, Plot HG 76, refuse	Arrowhead	Iron, corroded	Tanged; two-flanged lanceolate blade with medial ridge
5	PT3 436a	Garrison quarters, Plots HG 84-87, refuse	Arrowhead	Iron, corroded	Tanged; two-flanged ob lanceolate blade with medial ridge
6	PT4 594	Treasury, Room 33, Plot HG 40	Arrowhead	Bronze, patinated	Tanged; two-flanged ob lanceolate blade with medial ridge
7	PT6 578a	Treasury, Hall 41	Arrowhead	Bronze, patinated	Projecting conoid socket; three-flanged blade
8	PT6 578b	Treasury, Hall 41	Arrowhead	Bronze, patinated	Conoid socket; three-flanged blade extending to socket base
9	PT4 207	Treasury, Corridor 31, Plot HG 71	Arrowhead	Bronze, patinated	Projecting conoid socket; broad three-flanged blade
10	PT4 209	"Garrison Street," refuse, Plots HG 34 and 44	Arrowhead	Bronze, patinated	Projecting conoid socket; very short three-flanged blade with rudimentary barbs
11	PT3 332	"Garrison Street," refuse, Plot HG 75	Arrowhead	Bronze, patinated	Projecting conoid socket; three-flanged blade with barbs
12	PT5 691	Treasury, Hall 38, Plot HF 48	Arrowhead	Bronze, patinated	Conoid socket; three flanges ending in long thin barbs
13	PT5 317	Treasury, Hall 38, Plot HG 12	Arrowhead	Bronze, patinated	Socketed; triangular cross section; base split into three thick barbs; one side perforated
14	PT4 989	Treasury, refuse, Plot HG 32	Arrowhead	Bronze, patinated	Socketed; triangular cross section; butt of blade barbed
15	PT3 370	Treasury, Room 8, Plot HG 84	Arrowhead	Iron, corroded	Tanged; three-flanged blade ending in barbs
16	PT6 377	Treasury, Corridor 69, Plot IF 29	Arrowhead	Bronze, patinated	Tanged; three-flanged blade ending in broad barbs
17	PT6 152	Treasury, Room 47, Plot HF 19	Arrowhead	Bronze, patinated	Socketed; square cross section; two long barbs, two short ones
18	PT6 445	Treasury, Vestibule 77, Plot IG 22	Arrowhead	Bronze, patinated	Socketed; square cross section; four blunt barbs
19	PT6 73a	Treasury, Hall 41, Plot HF 59	Arrowhead	Bronze, patinated	Projecting conoid socket; two-flanged lanceolate blade with medial ridge
20	PT4 556	Treasury, Room 33, 1.0-1.50 above floor, Plot HG 40	Arrowhead	Bronze, patinated	Conoid socket; two-flanged blade extending to socket base; projection at either side of blade
21	PT5 316	Treasury, Hall 38, Plot HG 11	Arrowhead	Iron, corroded	Tanged; short two-flanged ovate blade with medial ridge
22	PT4 381	Treasury, Courtyard 29, Plot IG 14	Arrowhead	Bronze, patinated	Offset tang; two-flanged lanceolate blade with medial ridge



WEAPON HEADS. SCALE, 1:2

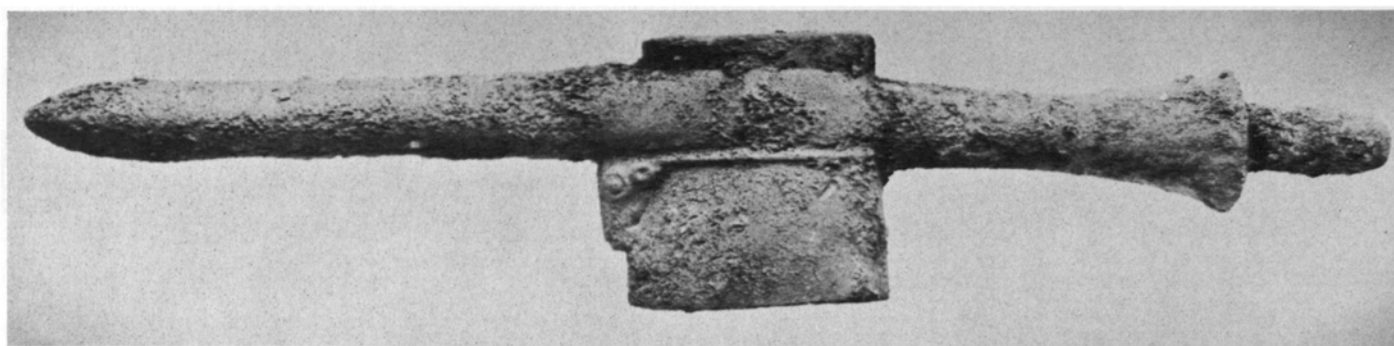
No.	Field No.	Find-Spot	Material	Remarks
1	PT4 1012	Treasury, Hall 38, Plot HG 31	Light yellow gold, traces of iron on reverse	Four perforations for attachment
2	PT4 376	Treasury, Room 33, Plot HG 51	Yellow gold on corroded iron	Gold cover of obverse turned around edge; three perforations for attachment
3	PT4 450	Treasury, Room 33, Plot HG 41	Yellow gold on corroded iron	Gold cover same as No. 2; four perforations for attachment
4	PT5 149a	Treasury, Hall 38, Plot HG 11 SW. corner	Bronze, patinated	Three perforations for attachment, oblong knob in center
5	PT3 58	Eastern fortification, Moat 28, Plot HG 79	Bronze, patinated	Two perforations for attachment
6	PT5 509a	Treasury, Hall 38	Iron, corroded	Three perforations for attachment
7	PT5 509b	Treasury, Hall 38	Iron, corroded	Cluster of armor scales like No. 6
8	PT4 1118a	Treasury, Plot HG 61, refuse	Iron, corroded	Fragments of three adjoining armor scales; two perforations for attachment
9	PT4 1118b	Treasury, Plot HG 61, refuse	Iron, corroded	Four or five perforations for attachment
10	PT4 282	Treasury, Room 33, Plot HG 51	Iron, corroded	Four perforations for attachment
11	PT4 1118c	Treasury, Plot HG 61, refuse	Iron, corroded	
12	PT5 842a	Treasury, Room 43, Plot HF 35	Iron, corroded	Cluster of armor scales; two perforations for attachment
13	PT5 842b	Treasury, Room 43, Plot HF 35	Iron, corroded	Two perforations for attachment
14	PT5 842c	Treasury, Room 43, Plot HF 35	Iron, corroded	Two perforations for attachment
15	PT5 509c	Treasury, Hall 38	Iron, corroded	Cluster of armor scales overlapping in original position
16	PT4 75	Treasury, Portico 19, Plot HG 52	Iron, corroded	Cluster of armor scales overlapping in original position
17	PT4 337	Treasury, Room 33, Plot HG 51	Bronze, patinated	Problematical design on front; cross band on back
18	PT6 199	Outside N. exit of Treasury, Plot HG 01	Bronze, patinated	Checkerboard design on front with alternating scrolls and plain squares; simple band on back
19	PT4 888	Treasury, Room 33, Plot HG 41	Bronze, patinated	Same design on front as on No. 18; back band pressed up to form two loops
20	PT6 269	Outside NE. corner of Treasury, Plot HG 02	Bronze, patinated	Problematical design on domed top attached to basal ring by four rods
21	PT6 450	Treasury, Room 81, Plot IG 32	Iron, corroded	Domed top covered with yellow gold foil; crosswise perforation



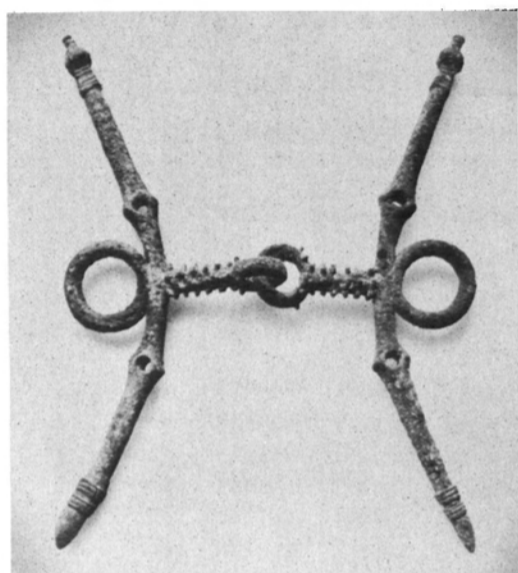


ARMOR SCALES (NOS. 1-16) AND STRAP BUCKLES? (NOS. 17-21). SCALE, 1:2

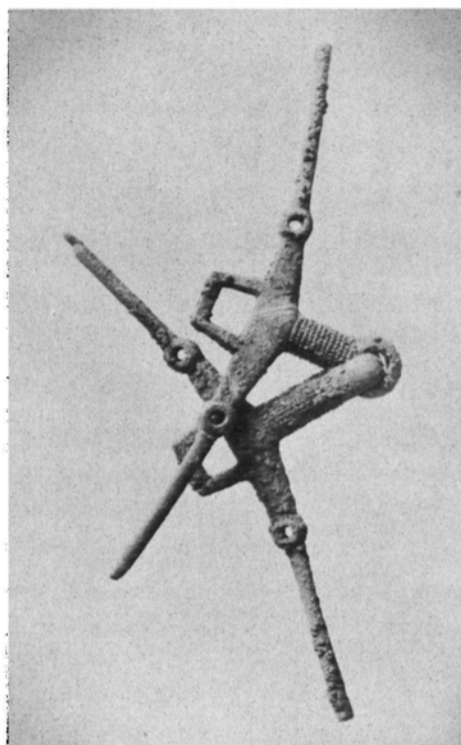
## PLATE 78



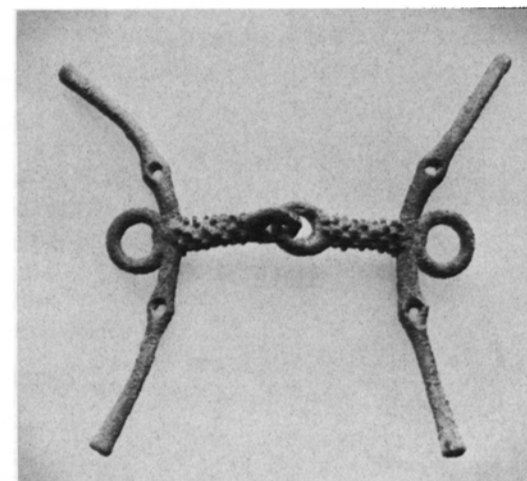
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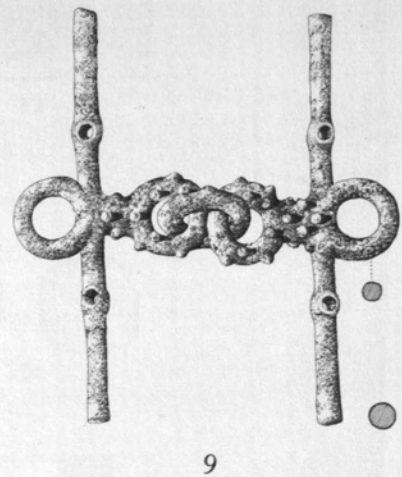
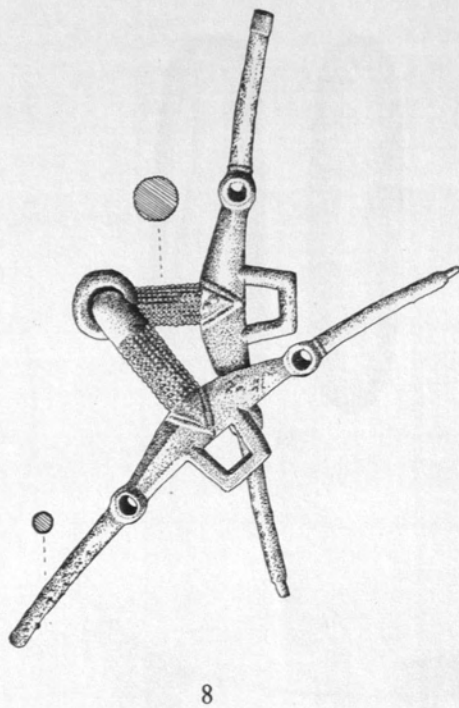
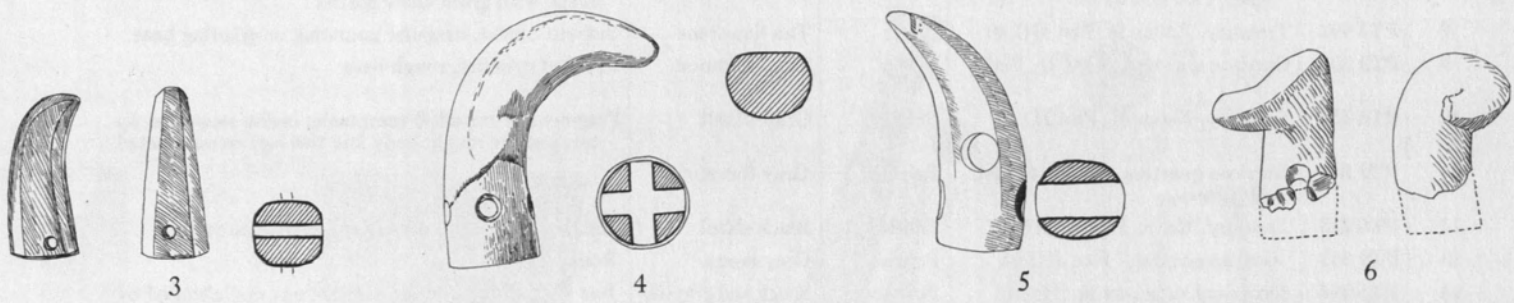
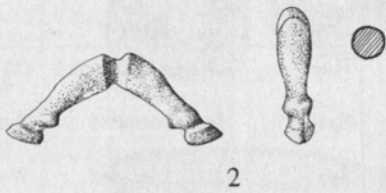
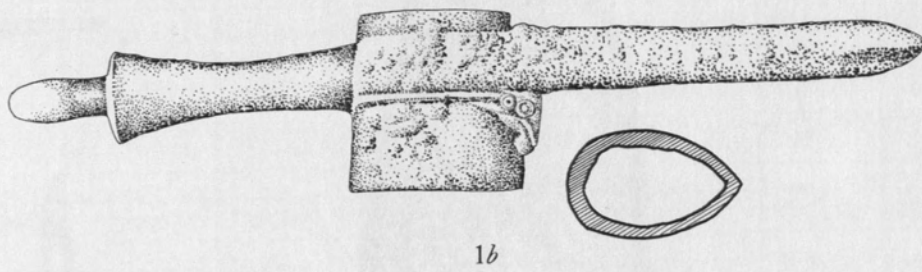
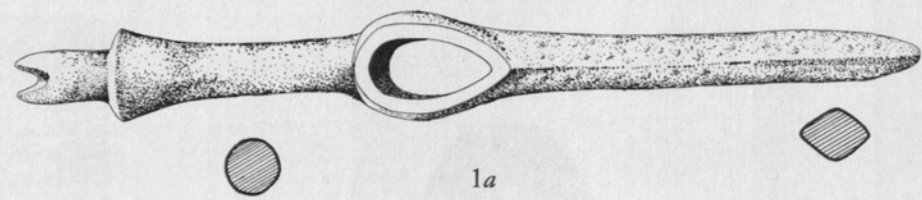
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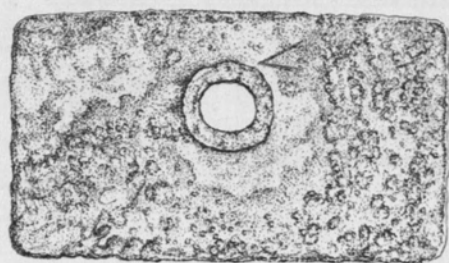
## BATTLE-AX AND BRIDLE BITS. SCALES, 3:4 (NO. 1) AND 1:4

Pl. 78	Pl. 79	Field No.	Find-Spot	Object	Material	Remarks
1	1	PT4 1094	Throne Hall, portico, floor, Plot GF 32	Head of battle-ax	Bronze, patinated	Top view (Pl. 79:1a); side views (Pls. 78:1, 79:1b) showing ram's head ornamenting front of ovate socket
	2	PT5 102	Treasury, Hall 41, Plot HG 40	Strap guard of bow case	Bronze, patinated	Modeled in form of two combined animal legs
	3	PT6 248	Treasury, Hall 41, floor, Plot HF 77	Bridle ornament	Banded brown-red translucent carnelian, polished	Horn-shaped with rounded octagonal base; two crosswise perforations
	4	PT6 57	Treasury, Room 48, floor, Plot HG 11	Bridle ornament	White chalk	Horn-shaped; four holes forming cross-shaped perforation
	5	PT4 193	"Garrison Street," refuse, Plots HG 34 and 44	Bridle ornament	Grayish-white limestone	Horn-shaped; two crosswise perforations
	6	PT5 336	Treasury, Hall 38, Plot HG 11	Bridle ornament	Grayish-cream limestone	Resembling horn of mouflon or ram; fractured at cross-shaped perforation
2	7	PT3 174	Garrison quarters, Room 11, Plot HG 76	Bridle bit	Bronze, patinated	Flexible bit studded with knobs and linked in center; curved side bars
3	8	PT5 819	Treasury, Hall 38, .10 above floor, Plot HF 37	Bridle bit	Bronze, patinated	Flexible roughened bit, linked in center; triangular decoration on flat expanding center of slightly curved side bars
	9	PT5 45	Treasury, Room 40, .05 above floor, Plot HG 22	Bridle bit	Bronze, patinated	Flexible bit studded with knobs and linked in center; straight side bars
4		PT3 72	Garrison quarters, Room 16	Bridle bit	Bronze, patinated	Flexible bit studded with knobs and linked in center; curved side bars

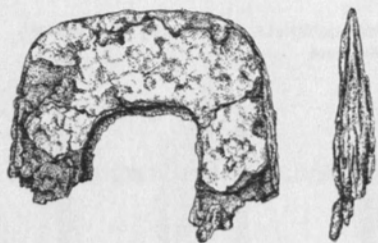


BATTLE-AX, STRAP GUARD, BRIDLE ORNAMENTS, AND BRIDLE BITS. SCALES, 1:2 AND (NOS. 7-9) 1:4

No.	Field No.	Find-Spot	Object	Material	Remarks
1	PT3 258b	Garrison quarters, Room 19, Plot HG 96	Hoe	Bronze, patinated	Off-center cylindrical socket, V-shaped incision on one face of blade
2	PT3 320	Garrison quarters, refuse	Spade	Iron, corroded	Spatulate end of wooden shaft once inserted in grooved concave part of blade
3	PT3 343	Eastern fortification, Moat 28, .20 above floor, Plot HG 78	Spade	Iron, corroded	Wooden shaft formerly held by rivets which are preserved in hollow butt
4	PT5 223	Treasury, Room 40, .40 above floor, Plot HG 22	Plowshare?	Iron, corroded	Cylindrical socket formed by two overlapping flanges
5	PT6 473	Street south of Treasury	Adz	Iron, corroded	Decayed wood in socket
6	PT5 911	Treasury, Hall 38, Plot HF 39	Mortar	Creamy-white and orange limestone	Base lopsided; some pittings, otherwise smooth
7	PT6 195	Treasury, Vestibule 50, .35 above floor, Plot HG 01	Mortar	Bronze, patinated	Shape identical with that of certain green chert mortars
7b	PT6 123	Treasury, Vestibule 50, .90 above floor, Plot HG 01	Pestle	Bronze, patinated	Upper part of shaft corrugated; otherwise identical in shape with green chert pestles
8	PT4 991	Treasury, Room 34, Plot HG 40	Pestle	Tan limestone	Smooth conoid; irregular pounding or grinding base
9	PT3 300	Garrison quarters, Yard 21, Plot HG 77	Pestle	Tan limestone	Polished cylinder, rough base
10	PT6 452	Treasury, Room 81, Plot IG 32	Bowl	Gray basalt	Fragment of tripod(?) receptacle; inside smoothed by use; outside rough; body and two legs reconstructed
11	PT3 85	Garrison quarters, Room 16, Plot HG 86	Polisher	Gray limestone?	
12	PT6 213	Treasury, Room 51, Plot HG 02	Polisher	Black slate?	Polished all over; pink matter adhering to surface
13	PT3 243	"Garrison Street," Plot HG 95	Polisher	Gray stone	Rounded cube
14	PT5 396	Secondary structure in "Harem Street," N. room, Plot HF 34	Polisher?	Black and grayish-green steatite?	Bar with elliptical cross section; one end abraded by use



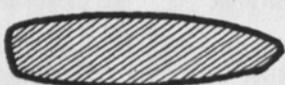
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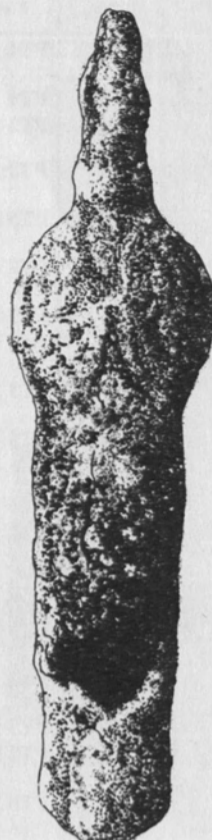
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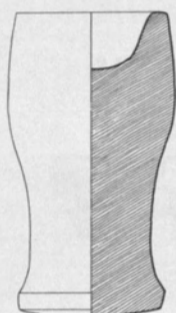
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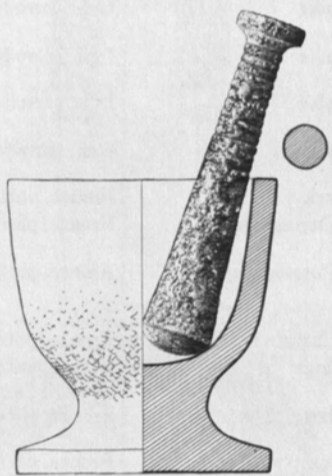
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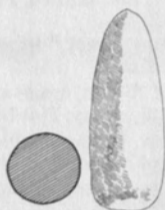
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7a



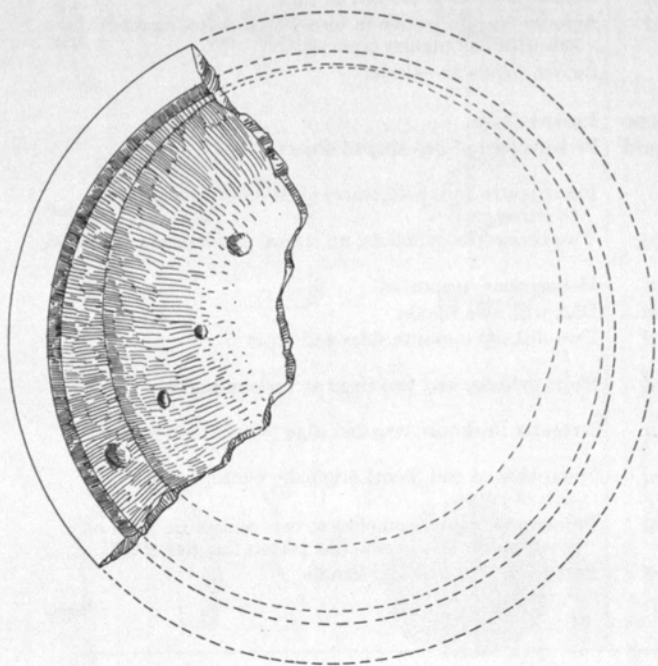
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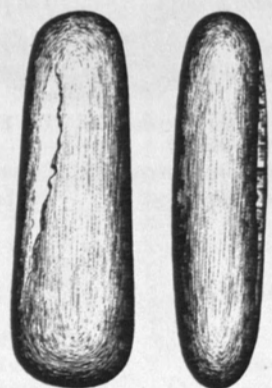
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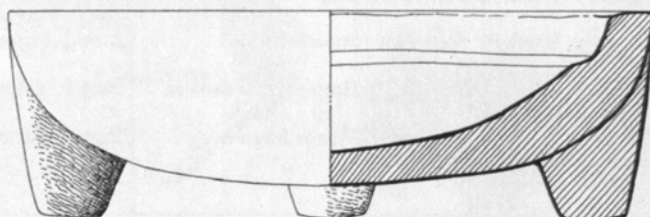
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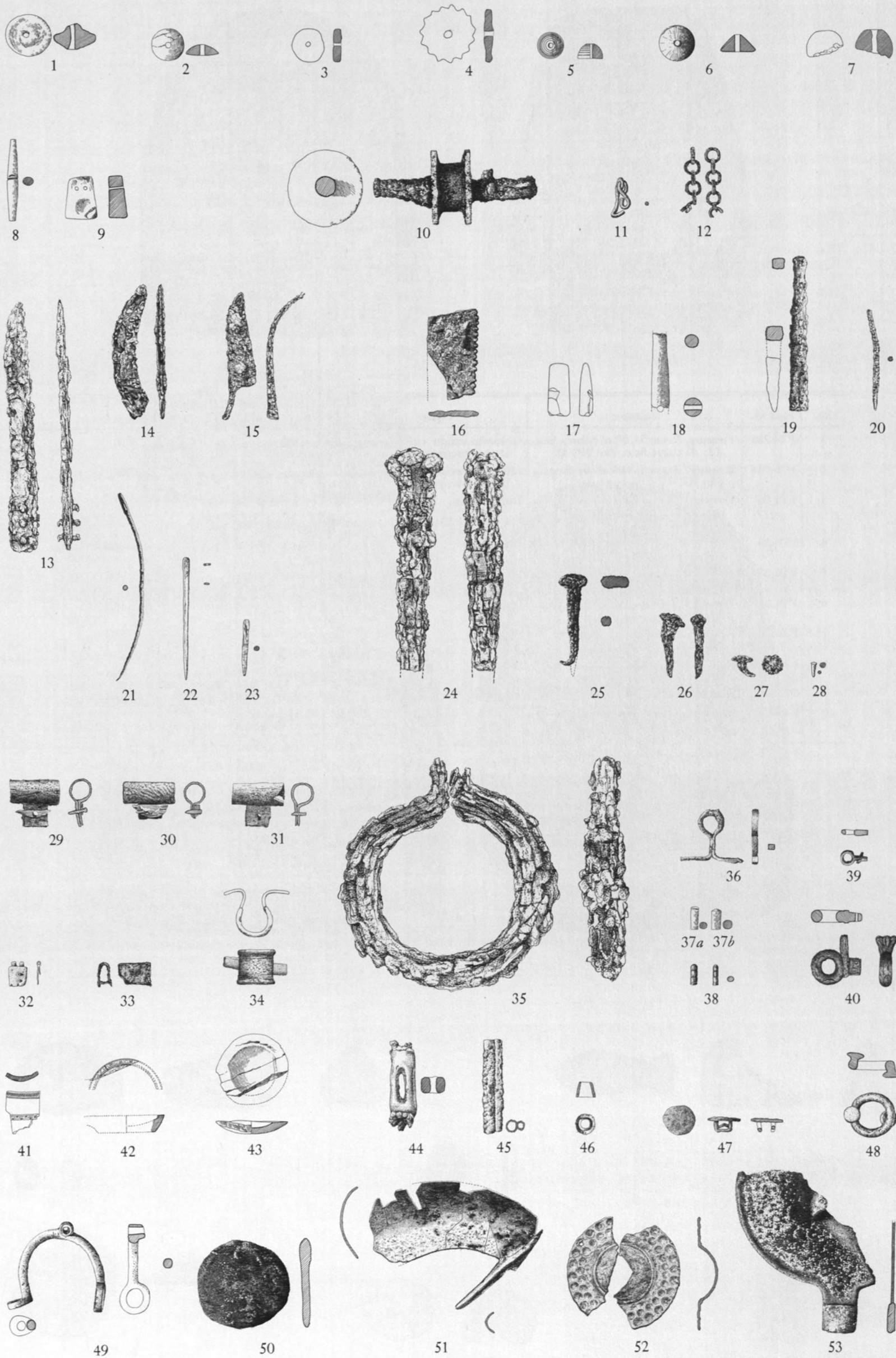
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14

TOOLS AND UTENSILS. SCALE, 1:4

No.	Field No.	Find-Spot	Object	Material	Remarks
1	PT4 1069	Treasury, Room 37, Plot HG 33	Spindle whorl	Grayish-tan unbaked clay	Cart-wheel shape
2	PT4 1063	Treasury, Hall 38, Plot HG 31	Spindle whorl	Red-brown stone	Smooth, plano-convex
3	PT3 237	Treasury, Room 2, Plot HG 95	Spindle whorl	Light red baked clay, red slip	Potsherd secondarily used as whorl
4	PT3 257	Garrison quarters, Room 19, Plot HG 96	Spindle whorl	Light red baked clay	Serrate disk
5	PT5 63	Throne Hall, portico, refuse, Plot GF 35	Spindle whorl	Gray baked clay, fine, soft paste	Semiglobe; incised concentric circles on top
6	PT7 16	Council Hall, Room 19a, refuse, Plot HE 46	Spindle whorl	Brown unbaked clay	Cone
7	PT3 253	Treasury, Room 2, Plot HG 95	Spindle whorl fragment	Green limestone	Slightly ovoid globe
8	PT4 1043a	Treasury, Room 34, Plot HG 41	Toggle pin	Bone, burned black	Groove encircles center
9	PT5 398	Apadana, N. courtyard, Plot GE 12	Loom weight?	Light red-brown baked clay	Trapezoid, two perforations
10	PT5 479	Treasury, Room 40, Plot HG 12	Pulley wheel(?) with rod	Bronze wheel, patinated; iron rod, corroded	Left part of rod complete, apparently corrugated, tapering toward end
11	PT5 214	Treasury, Hall 38, Plot HG 12	Hook and chain link	Bronze, patinated	S-shaped link
12	PT3 163	"Garrison Street," refuse, Plot HG 85	Chain	Bronze, patinated	Annular links
13	PT3 298	Garrison quarters, Yard 21, Plot HG 77	Knife	Iron, corroded	Apparently single-edged; three rivets at grip end
14	PT3 150	Garrison quarters, Alcove 8, Plot HG 86	Curved knife	Iron, corroded	Grip end missing
15	PT3 209	Garrison quarters, Room 17, Plot HG 96	Razor?	Iron, corroded	
16	PT5 254	Treasury, Hall 41, Plot HG 50	Saw	Iron, corroded	One serrated edge
17	PT3 190	Garrison quarters, Room 18, Plot HG 96	Whetstone	Light gray limestone	Grip end missing
18	PT6 20	Treasury, Plot HG 11, refuse	Whetstone	Gray stone	Perforation through grip; both ends missing
19	PT6 172	Treasury, Vestibule 50, Plot HG 01	Chisel	Iron, corroded	Rectangular cross section, broad cutting edge
20	PT3 284	"Garrison Street," in niche of Treasury inclosure, Plot HG 95	Punch	Bronze, patinated	Pointed rod with rounded head
21	PT6 13	Treasury, Hall 41, Plot HF 57	Needle	Iron, corroded	
22	PT5 365	Throne Hall, portico, Plot GF 22	Needle	Bronze, patinated	
23	PT3 185	"Garrison Street," refuse, Plot HG 85	Needle	Lead, fire-blackened	Tip broken
24	PT3 322	Gate of Xerxes, inside and N. of E. doorway, Plot FD 76	Spike	Iron, corroded	
25	PT7 142	Apadana, E. portico, Plot HE 14	Spike	Iron, corroded	
26	PT3 117	Garrison quarters, Room 16, Plot HG 86	Spike	Iron, corroded	
27	PT3 247	Garrison quarters, refuse, Plot HG 76	Tack	Iron, corroded	
28	PT4 492	Treasury, Room 83, Plot IG 15	Tack	Bronze, patinated	
29	PT6 459	Treasury, Room 86, Plot IG 40	"Curtain ring"	Bronze, patinated	Cylinder with two flanges pierced by nail; remains of wood on one side of flanges
30	PT6 458	Treasury, Room 86, Plot IG 40	"Curtain ring"	Bronze, patinated	Cylinder with two flanges pierced by nail; traces of wood found on both sides of flanges and inside the cylinder
31	PT6 460	Treasury, Room 86, Plot IG 40	"Curtain ring"	Bronze, patinated	Cylinder with two flanges pierced by nail
32	PT5 66	Apadana, N. courtyard, Plot GE 03	Hinge	Bronze, patinated	Two rivets pierce flange
33	PT3 114	Eastern fortification, Moat 28, Plot HG 89	Clamp	Bronze, patinated	Ends joined by rivet
34	PT6 461	Treasury, Room 86, Plot IG 40	Clamp	Bronze, patinated	Cylinder with two flanges
35	PT3 329	"Garrison Street," Plot HG 75	Clamp	Iron, corroded	Open ring, ends bent
36	PT6 329	Treasury, Room 57, Plot HF 87	Clamp or handle?	Bronze, patinated	Ring with two flanges bent at right angles
37a-b	PT4 1129a-b	Treasury, refuse	Game(?) pieces	Tan bone	Solid cylinders: a, domed top encircled by groove; b, conical top
38	PT6 90	Treasury, Room 48, Plot HG 10	Game(?) piece	Tan bone	Solid cylinder with domed top; three grooves encircle body
39	PT6 153	Treasury, Room 47, Plot HF 19	Bolt?	Bronze, patinated	Annular eye; shaft pierced by nail
40	PT6 129	Treasury, Vestibule 50, Plot HG 01	Bolt or handle?	Bronze, patinated	Annular eye; projection in form of palmette; pierced tab with rectangular cross section
41	PT4 359	Treasury, Passage 26, Plot HG 83	Fragment of cylindrical receptacle?	Tan bone	Incised bands on exterior
42	PT5 219	Treasury, Hall 38, Plot HG 20	Fragment of receptacle?	Cream-colored bone	Incised design
43	PT4 719	Treasury, Room 33, Plot HG 42	Lid(?) fragment	Tan bone, blackened by fire	Perhaps part of cup-shaped object
44	PT4 580	Treasury, refuse	Rod	Lead	Rectangular, oval hole; traces of corroded iron adhering to either end
45	PT4 1081	Throne Hall, portico, Plot GF 31	Double tube	Bronze, patinated	Two connected cylinders; no lateral perforations
46	PT5 233	Treasury, Room 39, Plot HF 49		Bronze, patinated	Hollow cone, truncated
47	PT6 666	Treasury, Room 83, Plot IG 25	Buckle	Bronze, patinated	Disk with two shanks
48	PT5 309	Treasury, Hall 41, floor, Plot HF 59	Ring	Bronze, patinated	Two disks at opposite sides and faces
49	PT6 272	Treasury, Hall 41, floor, Plot HF 78	U-shaped device	Bronze, patinated	Short cylinder and two rings at various angles
50	PT6 382	Treasury, Room 70, Plot IG 11	Disk	Silver(?), purplish-gray patina	Irregular thickness; rounded edge (weight: 348 grams)
51	PT6 310	Treasury, Room 56, floor, Plot HG 77	Spouted object	Bronze, patinated	Spout-shaped end (bent) originally continued in direction of curve
52	PT3 188	Garrison quarters, Yard 20, Plot HG 96	Harness(?) ornament	Bronze, patinated	Pronounced central omphalos; two concentric rows of embossed knobs on rim; one perforation preserved
53	PT6 136	Treasury, Room 51, W. doorway, 2.00 above floor, Plot HG 02	Mirror fragment	Bronze, patinated	Portion of disk with flat handle



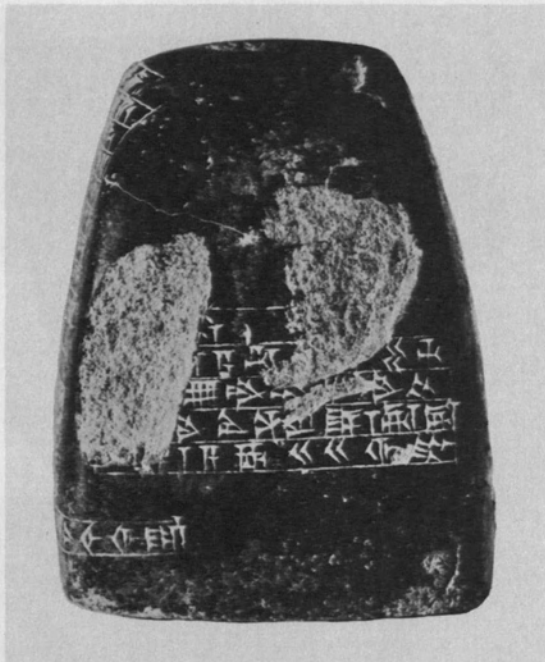
TOOLS AND UTENSILS. SCALE, 1:4

No.	Field No.	Find-Spot	Object	Material	Weight in Grams
1	PT4 736	Treasury, Room 33, N. of column base A2, .40 above floor, Plot HG 41	60-karsha weight with trilingual Darius inscription	Black and gray-green diorite, polished	4930
2	PT3 283	Treasury, Room 3, 1.00 above floor, Plot HG 95	120-karsha weight with trilingual Darius inscription	Gray-green diorite, polished	9950
3	PT4 869	Treasury, Room 33, floor between column bases A3 and B3, Plot HG 41	Duck weight	White calcareous stone with gray and pink shades, polished, crackled, scorched	42
4	PT6 30	Treasury, Vestibule 50, near SW. corner, 2.70 above floor, Plot HG 11	Duck weight	Bronze, patinated	Before chemical cleaning, 62.22; after cleaning, 58.65
5	PT6 259	Street at NE. corner of Treasury, Plot HG 02	Weight?	Lead, yellow patina	8.2
6	PT6 174	Street at NE. corner of Treasury, Plot HG 02	Weight?	Lead, yellowish-white patina	18.2
7	PT6 649	Treasury, Room 83, in E. doorway, Plot IG 25	Weight?	Lead, yellowish-white patina	24.5
8	PT6 640	Treasury, Room 83, 1.00 above floor, Plot IG 25	Weight?	Lead (with silver?), purplish-gray patina	
9	PT5 452	Treasury, Hall 38, Plot HF 39	Weight?	Lead, grayish-white patina	133.5
10	PT6 128	Treasury, doorway between Rooms 50 and 51, Plot HG 01	Weight?	Bronze, patinated	51.4





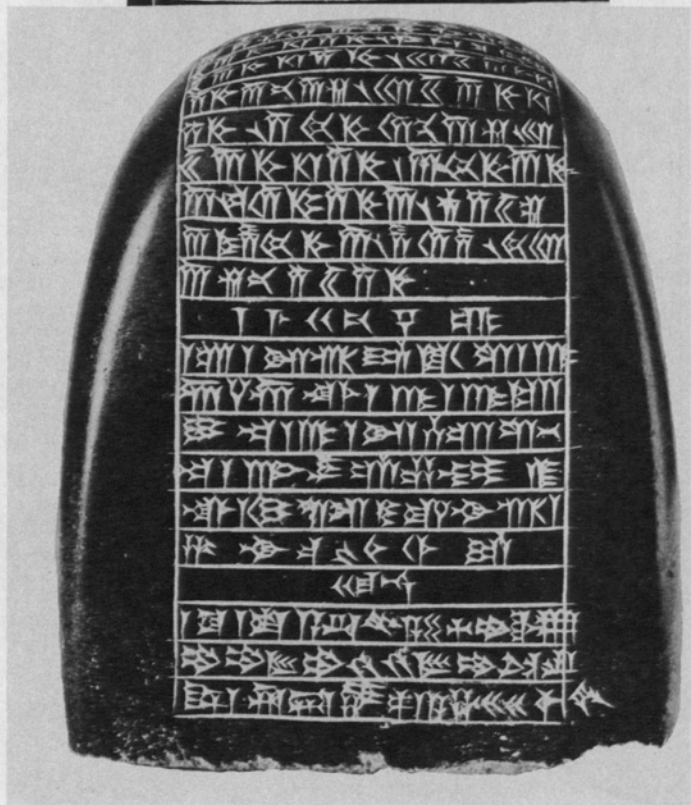
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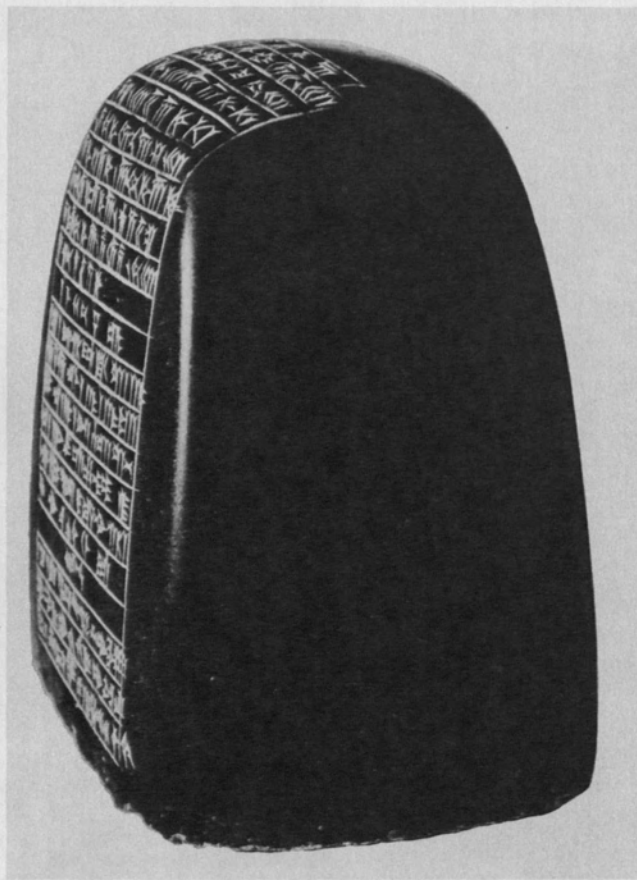
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2b



2a



2c



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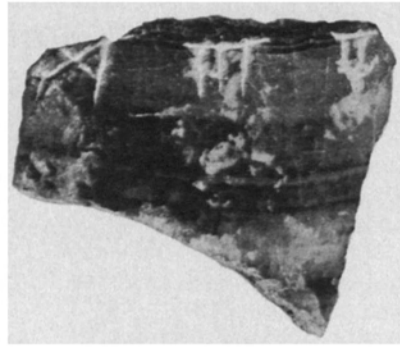


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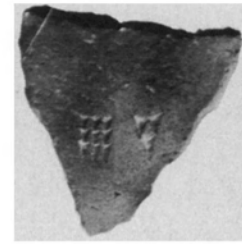


10

WEIGHTS. SCALE, 1:2 (NO. 2b-c SLIGHTLY LARGER)



1



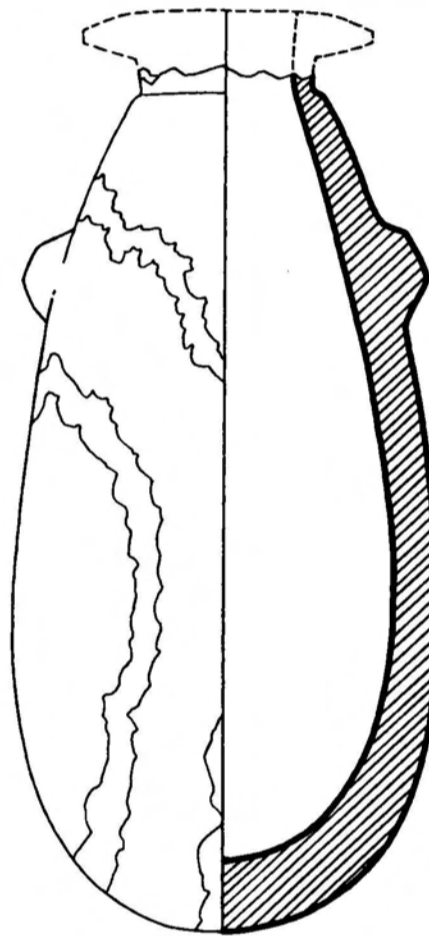
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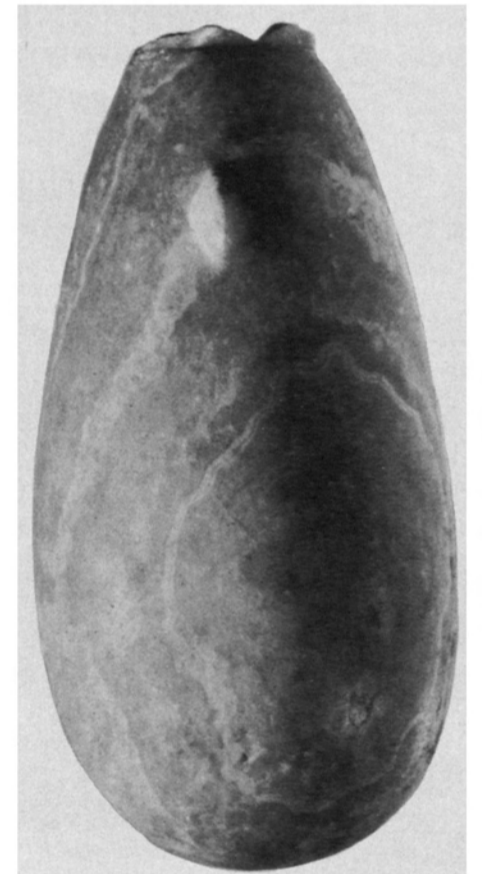
3a



3b



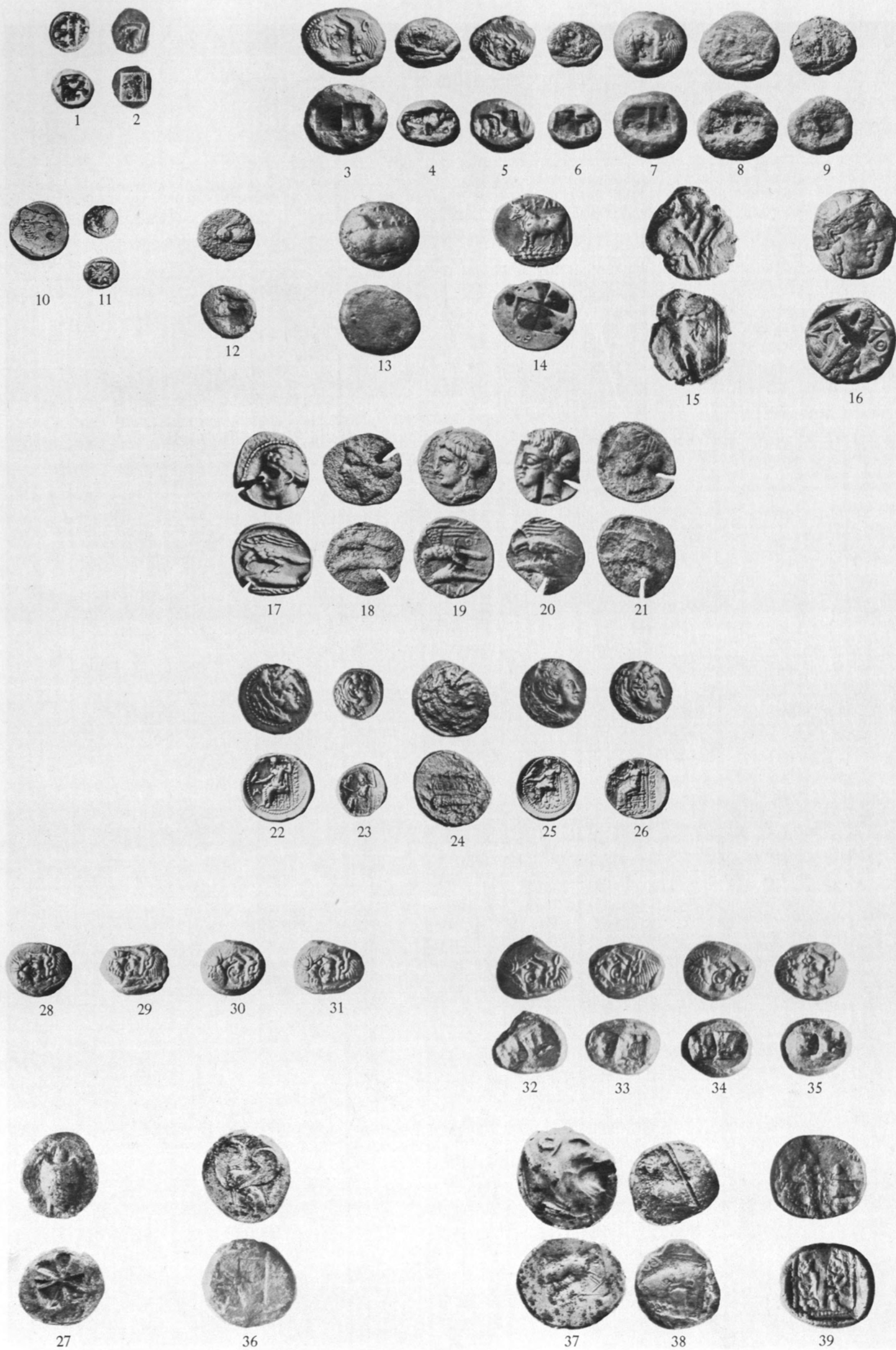
3c



3d

VESSEL FRAGMENTS MARKED WITH MEASURES OF CAPACITY

No.	Field No.	Find-Spot	Object	Material	Scale
1	PT7 366	Treasury, Room 81, at S. wall	Sherd with Bab. inscription ("qa 3 akalu")	Dark and light shades of tan alabaster	1:1
2	PT7 367	Treasury, Room 83, at E. wall	Sherd with Bab. inscription ("9 akalu")	Light tan alabaster	1:1
3	PF 11	Fratadara temple	Cosmetic bottle with Bab. inscription ("8½ akalu"); present height, 21.6 cm., maximum diameter, 11.2 cm.	Banded and mottled grayish-white, cream, and tan dolomitic marble; interior smooth, exterior polished	a, 1:1 b-d, 1:2



COINS. NOS. 1-26 FROM THE TREASURY AND OTHER POINTS. ACTUAL SIZE. NOS. 27-39 FROM THE FOUNDATION DEPOSITS OF THE APADANA (PHOTOGRAPHS BY HERZFELD, EXCEPT NO. 39). ACTUAL SIZE (NOS. 28-31, 39) AND SLIGHTLY LARGER (NOS. 27, 32-38)



VERTICAL AIR VIEW OF PERSEPOLIS WITH SITE OF PERSEPOLIS SPRING CEMETERY  
(SEPT. 27, 1935; 4:16 P.M.; ALTITUDE ABOVE GROUND, 2,600 M.)



A



B



C

PERSEPOLIS SPRING CEMETERY. A. THE SITE, NEAR SHIRAZ-ISFAHAN HIGHWAY (DIRECTION OF VIEW, NW)  
B. NORTHEASTERN GROUP OF BURIALS (DIRECTION OF VIEW, NE). C. NORTHERN GROUP  
OF BURIALS (DIRECTION OF VIEW, NNW)

## PLATE 87



A



B



C



D



E



F



G



H

PERSEPOLIS SPRING CEMETERY. CLOSE-UP VIEWS OF BURIALS. A. X 2, COVERED BY BOULDERS (DIRECTION OF VIEW, SSW). B. X 2, BOULDERS REMOVED (DIRECTION, N). C. X 3, AS FOUND (DIRECTION, SE). D. X 3, AFTER CLEANING, REMNANTS OF SKELETON AT LEG END (DIRECTION, S). E. X 8, AS FOUND (DIRECTION, SSE). F. X 9 (X 8 IN RIGHT FOREGROUND), AS FOUND (DIRECTION, NW). G. X 14, AS FOUND, PITCHER (PS 9) IN SITU (DIRECTION, NW). H. X 14, REMNANTS OF SKELETON AT END OF COFFIN, TOY HORSE (PS 10) IN SITU (DIRECTION, NNE)



A



B



C



D



E



F



G

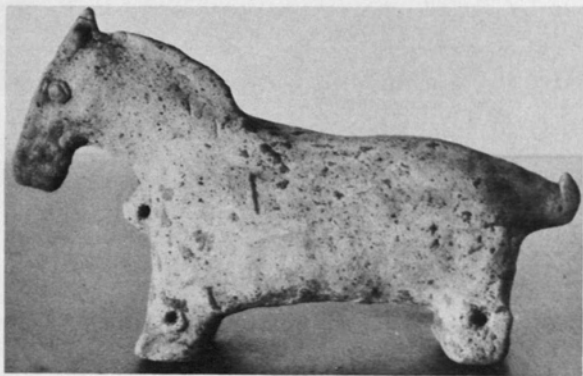


H

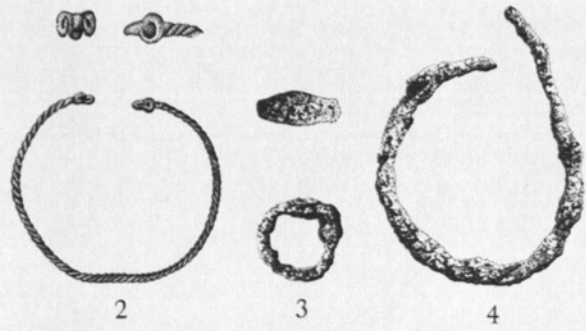
PERSEPOLIS SPRING CEMETERY. CLOSE-UP VIEWS OF BURIALS. A. X 5, AS FOUND (DIRECTION OF VIEW, S). B. X 5, LID REMOVED (DIRECTION, NNE). C. X 10 (RIGHT); X 11 (LEFT) PARTLY DESTROYED BY RODENTS (DIRECTION, SSE). D. X 21, ALABASTER VESSEL (PS 12) AT RIGHT HUMERUS (DIRECTION, NW). E. X 23 ON COFFIN OF X 24 (DIRECTION, SE). F. X 22 (LEFT) AND X 28 ABOVE X 29 (DIRECTION, S). G. SAME BURIALS AS F (DIRECTION, NNW). H. X 25, LEG END, SHOWING DISTORTED FEET (DIRECTION, SSE)

No.	Field No.	Find-Spot	Object	Material	Description
1	PS 10	In coffin X 14 (see Pl. 87 H)	Toy horse	Baked clay	Light grayish-brown surface; legs combined and laterally perforated for (probably) wooden axles with wheels; eyes applied; lug for attachment of cord on chest
2	PS 18	On left wrist of X 28	Bracelet	Bronze	Green patina; twisted wire ending in two ram's heads
3	PS 21	Below bone pile of X 31	Finger ring	Iron	Surface corroded; hoop with circular cross section; flat, expanding top
4	PS 22	On left wrist of X 8	Bracelet	Iron	Surface corroded; band with ovate(?) cross section and flattened ends
5	PS 9	Outside coffin X 14 (see Pl. 87 G)	Pitcher (nursing vessel?)	Baked clay	Red-brown surface; spout with pinched orifice; handle with circular cross section
6	PS 13	About halfway between X 21 and X 1, 1.10 above level of X 21	Small jar	Baked clay	Red-brown surface; biconoid body; beveled lip
7	PS 15	At elbows of X 23; parts found near X 21 and X 30	Bowl (restored)	Baked clay	Red-brown surface
8	PS 5	Among fragments of coffin lid of X 6	Bowl (restored)	Baked clay	Red-brown surface
9	PS 16	On stone slab covering head end of X 26	Sherd	Baked clay	Coarse red-brown fragment of storage vessel(?); one face corrugated
10	PS 11	At right side of pelvis of X 18	Bowl fragment	Baked clay	Light brown and red-brown surface shades
11	PS 17	About .50 above foot end of X 26	Bowl fragment	Baked clay	Yellowish-brown surface
12	PS 12	Beside right humerus of X 21	Cosmetic bottle?	Alabaster	Partly corroded fragment of cylindrical body with convex bottom; banded white and cream





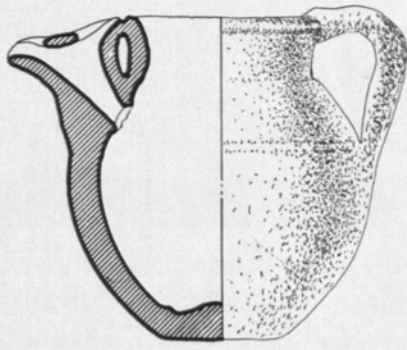
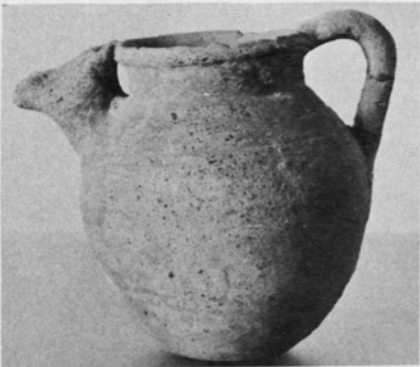
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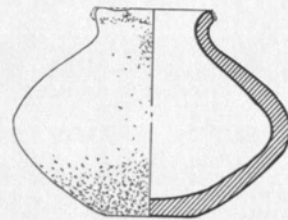
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3

4



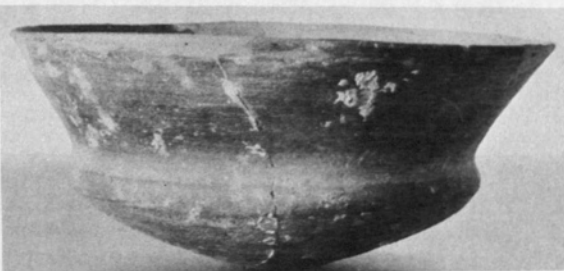
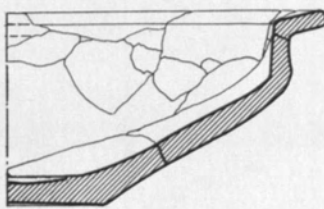
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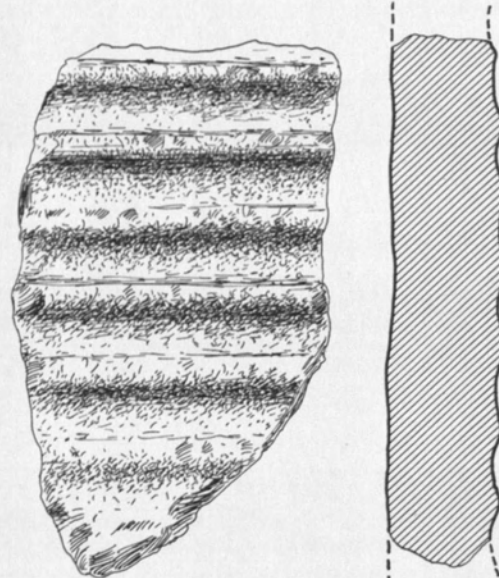
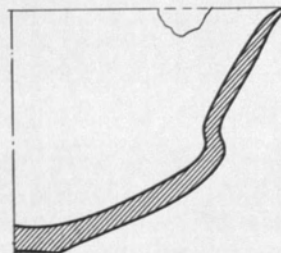
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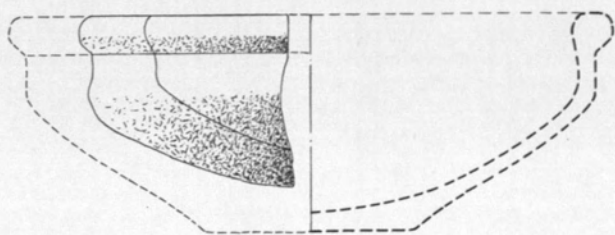
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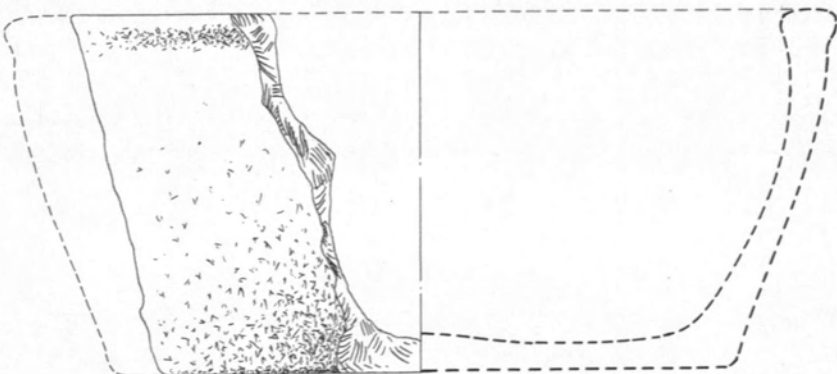
8



9



10



11



12

OBJECTS FROM PERSEPOLIS SPRING CEMETERY. SCALES, 1:2 AND (DETAILS OF NO. 2) 1:1

