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RESEARCHES IN ANATOLIA—VOLUME V

THE ALISHAR HÜYÜK

SEASONS OF 1928 AND 1929

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PART OF A LARGE DECORATED JAR AND A DECORATED BOWL (RECONSTRUCTED) OF ALIŞAR V. SCALE, 1:2

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VOLUME XX

RESEARCHES IN ANATOLIA—VOLUME V

THE ALISHAR HÜYÜK

SEASONS OF 1928 AND 1929

PART II

BY ERICH F. SCHMIDT
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WITH A CHAPTER
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PREFACE¹

The material presented in this publication is based mainly on the results of excavation seasons 1928-29. Results of the 1927 season were published in *OIP* VI-VII.

Dr. H. H. von der Osten and the writer were ably assisted by the other members of the expedition staff in recording and cataloguing the finds. The drawings and paintings of pottery for the present volume were made by Mehmet Ali Bey and Şemseddin Ruhi Bey. Casts were made by Reha Tachsin Bey. Dr. W. M. Krogman contributed a careful study of the physical types of Alişar.

We repeat here our acknowledgments of the courtesy and help received from the Turkish authorities, the American embassy in Turkey, and our colleagues in various parts of the world. We wish also to thank Dr. James H. Breasted, the director of the Oriental Institute, for making possible the publication of this detailed report, and the Misses Ruth C. Wilkins and Ruth L. Schurman of the editorial staff for their care in preparing the manuscript for press.

We endeavor to use the current Turkish spelling for Turkish place-names as well as for personal names. The chief differences occur in the cases of *j*, *ch*, *gh* (mute), *zh*, *sh*, and *i* in diphthongs, for which the Turkish uses *c*, *ç*, *ğ*, *j*, *ş*, and *y* respectively. Thus Alishar is now spelled Alişar, and Erzinjan becomes Erzincan. Dotted *i* must have its dot even when capitalized; the undotted *i* stands for the indefinite vowel.

In this work the terms "Alişar I" to "Alişar VII" inclusive are used interchangeably with "Stratum I" etc. (the layers of material remains) and with "Period I" etc. (the periods of time during which the corresponding strata were deposited). This is a more elaborate division than that employed in *OIP* VI. Stratum III of *OIP* VI is divided into Stratum III (pre-Empire), Stratum IV (Hittite Empire),² and Stratum V (post-Empire). Stratum VI includes Hellenistic, Roman, and Byzantine remains; and Stratum VII covers the Seljuk and Osmanli phases of the mound's history. Strata I-IV were described in *OIP* XIX; Strata V-VII are described in the present volume.

Objects are identified by the numbers by which they were listed in the field catalogue. Field numbers preceded by "a" belong to objects found in 1928; those preceded by "b," to objects found in 1929. A few objects are included which were found in 1927. These have field numbers with no prefix. An italicized letter following a field number designates the object as part of a group. Numbers designating burials include an "X."³ Architectural divisions also (rooms, streets, etc.) are given numbers, while subsidiary units (pits, walls, etc.) are designated by italicized letters. Thus, Wall 1*a* is a certain wall bordering Section 1.

Measurements are given in meters and their fractions. The dimensions of individual objects are sometimes given in the text, but have usually been omitted where the scale is given with an illustration. The net squares marked on maps are 10×10 meters. The designation of plots by co-ordinates was adopted during the season of 1928. Figure 186 correlates the earlier plot numbers with the later terminology.

ERICH F. SCHMIDT

¹ Most of this explanatory material is taken from the Preface of *OIP* XIX, where the contributions of the various members of the staff are described in detail.

² [But cf. p. 1, n. 1.—EDITOR.]

³ Skeletons found in 1927 were given field numbers also. The field numbers are used by Dr. Krogman in his report.

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LIST OF ABBREVIATIONS

- AJSL* American Journal of Semitic Languages and Literatures (Chicago etc., 1884—)
OIC Chicago. University. Oriental Institute. Oriental Institute Communications (Chicago, 1922—)
OIP Chicago. University. Oriental Institute. Oriental Institute Publications (Chicago, 1924—)

I

STRATUM V

Period V lasted from the fall of the Hittite Empire to the time of Alexander the Great.¹ The only known reference to the end of the Hittite Empire is in a record of Ramses III that the Hatti failed to repel foreign invaders (of uncertain origin).² The invaders wiped out Hattushash, pushed on into Cilicia, and overran Syria. They were in some way connected with the "Sea Peoples," whom they joined in attacking Egypt. The whole movement was halted by Ramses III in two great battles. Such was the conquest of the Hittite Empire by presumably barbaric peoples.³ Some strong principalities survived, continuing Hittite culture in Anatolia⁴ and in the well known post-Empire city-states of Syria.⁵ But those regions which bore the brunt of the attack may have stagnated for a considerable time. It seems probable that Alişar and its environment were involved in the collapse of the Hittite Empire.

During the centuries following 1200 B.C. Asia Minor was swept by many peoples. The Phrygians came from Thrace into Asia Minor about the time of the fall of the Hittite Empire. A centralized Phrygian state, with Gordium as capital, was founded perhaps in the 11th century⁶ and lasted until about the beginning of the 7th century, when it was destroyed by the onslaught of the Cimmerians.⁷ After defeating the Lydians in 652 B.C., the Cimmerians turned toward Cilicia, where they were defeated by the Assyrians. The Treres soon followed the Cimmerians; but Lydia broke up their attack, perhaps with the aid of Assyria.⁸ Then came the Scythians, who dominated Syria for some time⁹ and finally aided the Medes and Babylonians in bringing about the destruction of Nineveh (612 B.C.).¹⁰ Lydia, recovered from the assaults of the Cimmerians and Treres, expanded to the east as far as the Halys River (Kızıl Irmak), which became the frontier between Lydia and the Medes (585 B.C.).¹¹ Cyrus and his Persians defeated the Medes (about 550 B.C.) and then Lydia (546 B.C.).¹² From this time until the conquest by Alexander the Great (333 B.C.) Asia Minor was under Persian rule. Cappadocia was the third satrapy of Darius, administered after 476 B.C. (the time of Xerxes) by descendants of the Persian noble Artabazus.¹³

It is still impossible to associate the subdivisions of Stratum V at Alişar with particular historical phases. An almost sterile layer above Stratum IV, and weak wall remains above that, indicate that the site was unimportant for a long time. It may be that at some time

¹ [As a result of later excavations (cf. his report in *OIC* No. 14) Dr. von der Osten now believes that both the Early Hittites and the New Empire Hittites are to be assigned to Period II (which would in large part follow Period III; see his statement in *OIC* No. 11, pp. 156-59) and that Period IV should be ascribed to some post-Hittite people as yet unknown.—EDITOR.]

² J. H. Breasted, *Ancient Records of Egypt* IV (Chicago, 1906) §64.

³ Breasted, *A History of Egypt*, 2d ed. (New York, 1909) pp. 479-81; D. G. Hogarth in *Cambridge Ancient History* II (New York, 1924) 267 f.; H. R. Hall, *ibid.* p. 284.

⁴ Hogarth, *op. cit.* pp. 272 ff.

⁵ Hogarth, *op. cit.* III (1925) chap. vi.

⁶ Approximately 12th-11th century B.C. according to A. T. Olmstead, *A History of Assyria* (New York, 1923) pp. 222 f. For Phrygian history consult Hogarth, *op. cit.* III 501 ff.; G. and A. Körte, *Gordion* (Berlin, 1904) chap. i.; John Garstang, *The Hittite Empire* (London, 1929) pp. 15 ff. (cf. *OIC* No. 8, pp. 159 f.).

⁷ Cf. Hogarth, *op. cit.* p. 506, and Olmstead, *op. cit.* p. 422.

¹⁰ Smith, *op. cit.* p. 129.

⁸ Sidney Smith, *Cambridge Ancient History* III 116-18.

¹¹ Hogarth, *op. cit.* pp. 512 f.

⁹ Hogarth, *op. cit.* pp. 145 f.

¹² *Ibid.* pp. 521-24.

¹³ G. B. Gray and M. Cary, *Cambridge Ancient History* IV (1926) 195 and 197.

the Phrygians occupied the mound. We have found a vessel,¹⁴ some vessel spouts, and some sherds resembling the pottery found at Gordium.¹⁵ They were in layers which cannot be definitely associated with either the upper or the lower occupational levels of Stratum V. Some lustrous black sherds,¹⁶ perhaps of Aegean origin, were found in Level 2, the upper occupational level. They place the date of this occupation within the period of Persian rule in Asia Minor. The upper layer of Stratum V fades into remains of the Hellenistic age, the initial phase of Period VI.

As a whole, the culture complex of Alishar V includes about the same range of material remains as does that of Alishar IV (Level 4), though some features are missing and others are new or are considerably modified. Hieroglyphic writing, for example, almost disappears.¹⁷ Vessels occurring not far above the top of Stratum IV may have been made during Period IV, or they may represent survivals of Period IV technique. Later, distinct Period V pottery appears, with characteristic decoration and new forms such as lamps. Pottery loom weights are modified. Spindle whorls of pottery and stone have typical forms and serve as "index fossils" of the stratum. The few figurines include an ethnologically interesting relief showing the use of the yoke. Most of the seals are not particularly striking. Metal objects include some new types of tools and weapons, such as the long awl(?) of bronze or copper and the battle(?)-ax of iron. Other types are modified. Among stone objects we still find types of tools known to the earliest settlers of the mound; but an entirely different type of mill appears, the origin of which is still unknown.¹⁸ The primitive hand mill had been used from Period I through Period IV. It is significant that a feature persisting for such a long time was replaced. Bone objects can hardly be distinguished from those of preceding periods. New types of glass (fayence?) beads appear, which may serve as important chronological clues.

We do not know the method of disposing of the dead during this period. Four skeletons were uncovered in Stratum V, buried in the plain earth inside the buildings. Presumably they had been buried by settlers of levels later than those in which they were found; perhaps some even belonged to later periods. Burial grounds of this period may be outside the mound territory.

THE SETTLEMENT

The Period V town extended at least as far as indicated in Figure 1; several settlements, probably of varying extent, were built successively. There is some evidence, as explained above, that the structures in Level 2 on Mound A belong to the Medo-Persian period. Level 3 on Mound A and the weak wall remains intermediate between Level 3 and Level 4 probably belong to an earlier phase. However, the remains in the various sublevels are not well differentiated. Our theories as to possible time relations are mentioned from case to case.

The Alishar V fortifications were apparently more extensive than those of Alishar IV. The Hittite Empire citadel had probably inclosed only the top of Mound A. The Alishar V fortress wall, girdling Mounds B, C, and D (Fig. 2) and extending uphill on the slope of Mound A, was probably connected with fortifications of Level 2 on Mound A. Remains of a town wall were traced in the northeast part of the terrace.

¹⁴ No. 1836, *OIP* VI 255.

¹⁵ G. and A. Körte, *op. cit.* Figs. 21-23 and 27.

¹⁶ These sherds resemble those discussed by G. and A. Körte (*op. cit.* p. 192, No. 81a), occurring from about 400 B.C. until the Hellenistic period.

¹⁷ It was continued, however, at some North Syrian sites and at Malatya etc. A clay bulla, No. a 86, with a presumably hieroglyphic inscription occurred in Stratum V.

¹⁸ Two similar mills are described by G. and A. Körte (*op. cit.* pp. 175-76) as objects of unknown use.

STRATUM V

3

On Mound A the distance between Levels 4 and 3¹⁹ averaged 2.00–2.50.²⁰ Except for a few insignificant architectural remains²¹ this layer was almost sterile. Most of the accumulation originated from the architectural débris of Level 4 itself. Level 3 contained only poorly constructed buildings, with no evidence of fortifications. In Level 2 on Mound A, about 3 meters

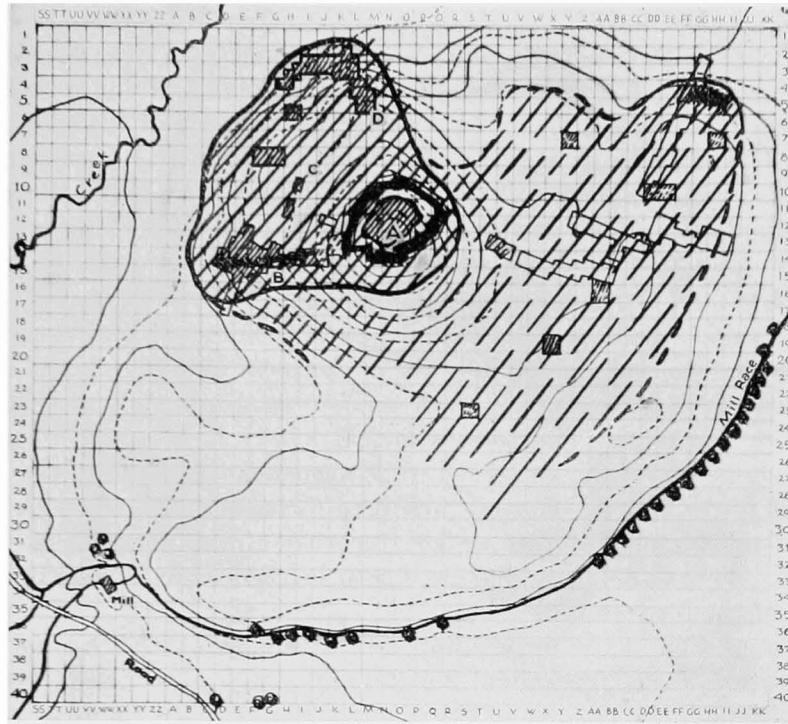


FIG. 1—SETTLEMENT PLAN OF ALIŞAR V

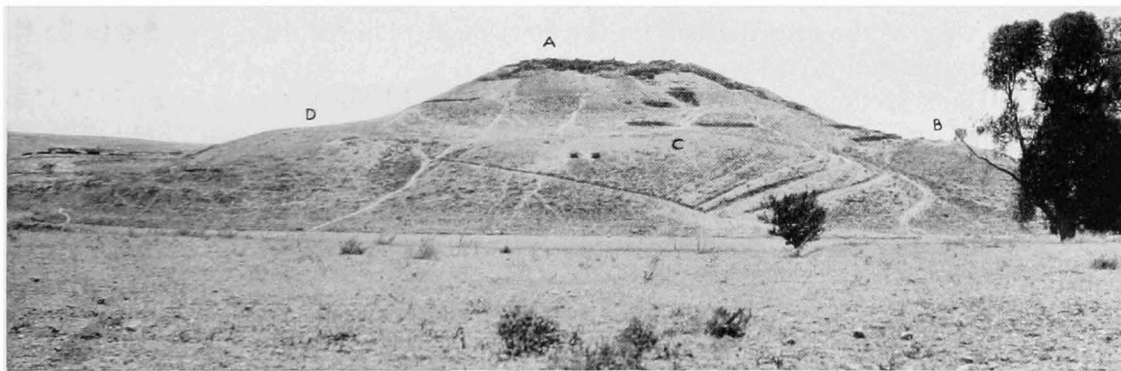


FIG. 2.—ALIŞAR HÜYÜK FROM NORTHWEST

above Level 4, we found strong buildings defended, during at least the second phase of this occupation, by fortlike structures. There were architectural sublevels above and below the main levels; and alterations and rebuilding, of course, took place during each occupation.

¹⁹ For the relations between levels and strata see page 5.

²⁰ All measurements are given in meters and fractions of meters.

²¹ Some of these were mentioned in *OIP* XIX 231 and 233 and ascribed to a level there (and in our Fig. 3) called Level 3a.

Therefore the maps of these levels frequently show seemingly incoherent remains, and definite building complexes are rare.

The thickness of Stratum V on Mound A, measured from the bottom of Level 3 to the top of the wall remains of Level 2, ranged from 1.30 to 2.50 (Fig. 3). The depth of the deposit increased from the mound edge toward the center. Storage or refuse pits filled with Alishar V remains extended into the deposit intermediate between Levels 3 and 4. Level 2 was usually .50-1.00 above Level 3, but frequently remains of the upper level were directly superimposed on foundations of Level 3 (cf. Fig. 3). Level 1 averaged about 1.50 above the floor of Level 2, but Alishar VI refuse was found in Level 2 inclosures, particularly at the edge of the mound.

On Mounds B, C, and D Stratum V varied in thickness from 1 to 6 meters, being but little higher than the preserved fortress wall. In F 14 on Mound B we found Stratum VI remains just below the mound surface. Below this lay Stratum V, 2.50 thick. Four occupational layers—Levels 2, 3a, 3b, and 3c—had accumulated inside the fortress wall. The lowest of these, Level 3c, was followed by a thin layer of Stratum IV.

In F-G 8 on Mound C Stratum V measured 3.80 at the deepest spot, 3 meters at an average. Here the stratum was subdivided into rather clean-cut Levels 1, 2, and 3. The thin surface shell above was sterile. However, a few *terra sigillata* sherds and one Byzantine fragment indicate that refuse of Stratum VI extended to this point.

On Mound D the height of the preserved walls measures the depth of the culture deposit. In L-M 5, closest to Mound A, the well preserved fortress wall is about 5 meters high. It measures only about 1 meter at the northeast corner of the complex in K 2. In L-M 5, Levels 1, 2, 3a, and 3b were defined. The number of levels decreased with the decrease in the preserved height of the fortress wall.

In the northeast section of the terrace, in Plots XXIV, XXV, XXX, and XXXI of 1927 (cf. Fig. 186), Stratum V averaged about 2 meters in depth. A section of town wall was uncovered here.²² Although the pottery in this section was like that found in other sections of Stratum V, the construction of the town wall foundation was unlike other architectural remains of the period. We feel sure that the wall was constructed during Period V, but we do not yet know to which occupation it should be attributed.

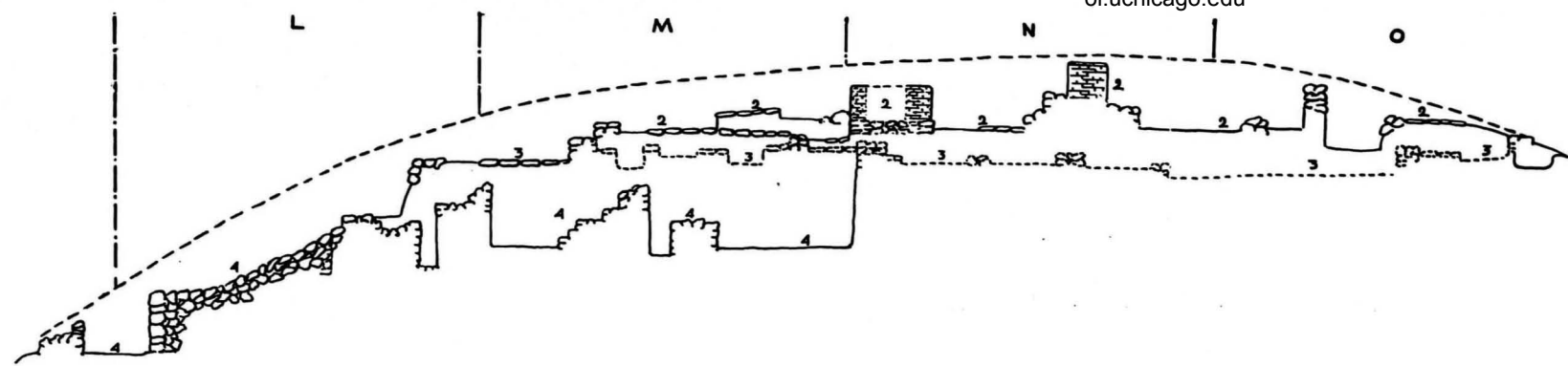
In the remainder of the area marked on the settlement plan Stratum V seems to be thin. Often its presence is indicated by a few sherds only.

Levels 2 and 3 on Mound A are not directly comparable with the levels on Mounds B, C, and D; and the levels on these three mounds are mutually comparable in part only. The base levels of the fortress sections on Mounds B and D were probably contemporaneous. In the higher levels building may have progressed at an uneven rate, and levels represented in one section may be absent at another point.

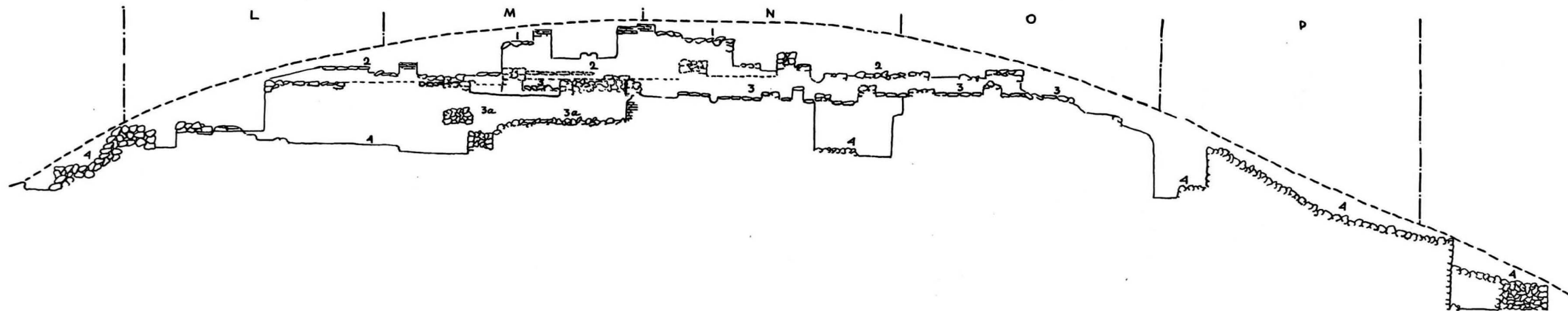
These variations of building levels add to the usual problems caused by intermediate layers containing objects from levels above and below. We found that the greater percentage of such remains belonged to the level above—a fact due in part to the age-old Anatolian habit (still persisting) of digging many storage or refuse pits. Again, specimens found between the levels may be intermediate in time; or they may even belong to the lower level, having been deposited at elevated spots. Objects found close to the floor of the lower level were attributed to that level. Specimens of a type rare in one of the levels concerned probably originated in the level in which they were the more frequent.

Such difficulties are present in all strata. We feel them keenly in working with Stratum V, where the need is great and the evidence still insufficient for correlating the levels with one another and with historical phases. We can only present as clearly and as accurately as pos-

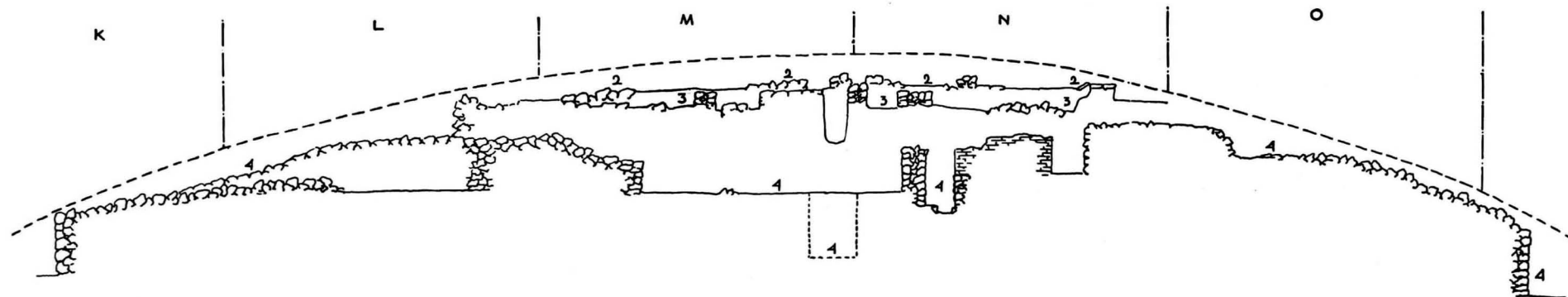
²² See OIP VI 182-84, Map 22, and Figs. 151-61.



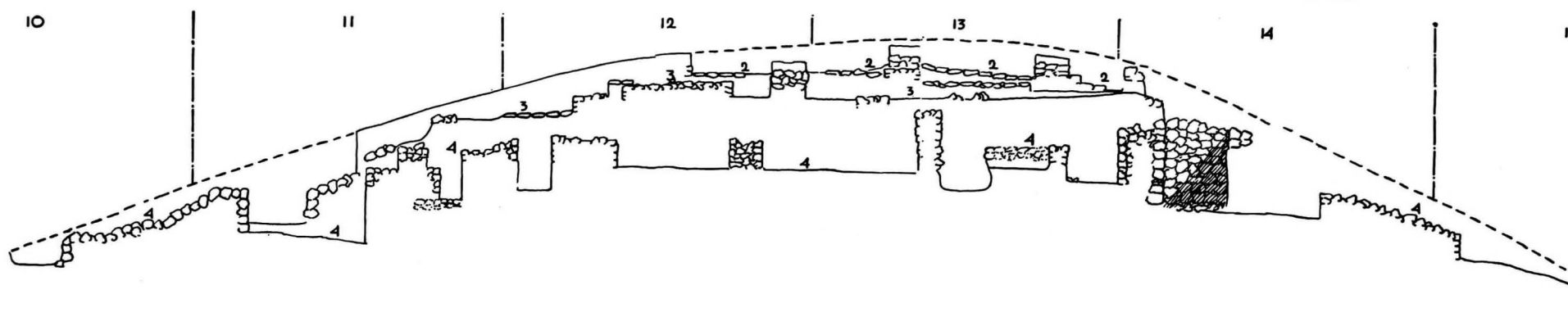
Cross-Section on Plot Border 11-12



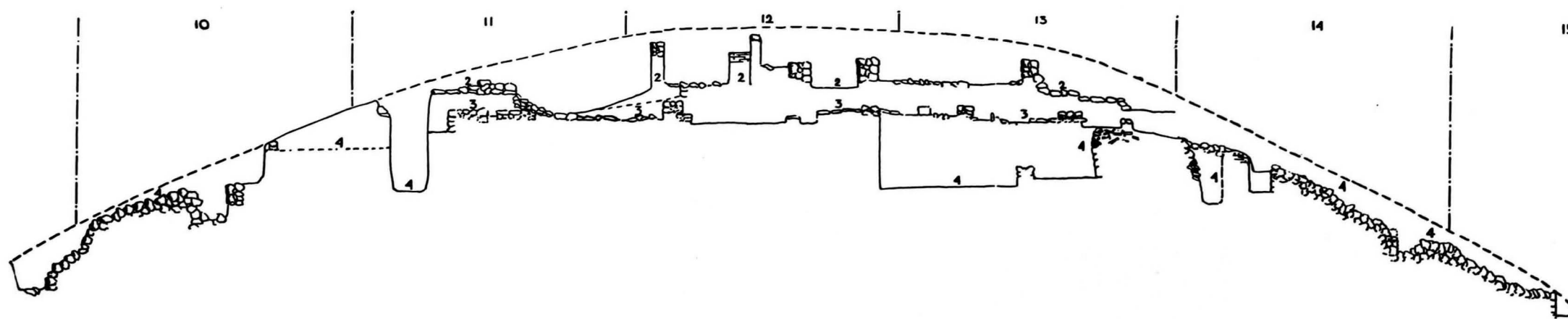
Cross-Section on Plot Border 12-13



Cross-Section on Plot Border 13-14



Cross-Section on Plot Border L-M



Cross-Section on Plot Border N-O

FIG. 3.—CROSS-SECTIONS OF ARCHITECTURAL LEVELS 1, 2, 3 AND 4 ON MOUND A, FOLLOWING PLOT BORDERS. SCALE, 1:200

STRATUM V

5

sible such evidence as we have, hoping that it will be of more use later. As a rule, the objects in each series (e.g., painted jars) are here arranged according to their find-spots, following the order given below.

ON MOUND A

Refuse between Stratum VI and upper Stratum V.....	Level 1-2
Upper Stratum V.....	Level 2
Intermediate Stratum V.....	Level 2-3
Lower Stratum V.....	Level 3
Refuse between lower Stratum V and Stratum IV.....	Level 3-4

IN F 14 ON MOUND B

Upper Stratum V.....	Level 2
Intermediate Stratum V.....	{ Level 3a
	{ Level 3b
Lower Stratum V.....	Level 3c

IN F-G 8 ON MOUND C

Upper Stratum V.....	Level 1
Intermediate Stratum V.....	Level 2
Lower Stratum V.....	Level 3

IN L-M 5 ON MOUND D

Upper Stratum V.....	Level 1
Intermediate Stratum V.....	Level 2
Lower Stratum V.....	{ Level 3a
	{ Level 3b

Elsewhere on Mound D the series of levels changes according to the depth of the excavation. Thus the only level uncovered in K 2 is that of the base of the fortress wall, which corresponds to Level 3b in L-M 5.

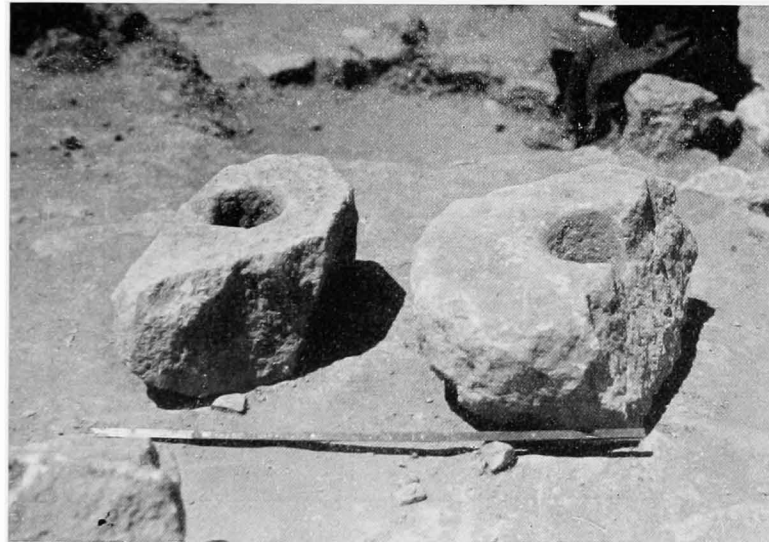


FIG. 4.—DOOR SOCKETS

ARCHITECTURE

MOUND A. LEVEL 2

The structures in Level 2 on Mound A were only .50-1.00 below the Roman remains, and in some places the difference in levels was almost nil. This suggests that Level 2 was occupied during the second half of the first millennium B.C. It is significant that we found there eye beads and black potsherds with metallic iridescent luster (cf. Plate XA) such as that on Greek pottery of that period.

Well built *kerpich* walls were common in Level 2. The typical foundation for such a wall had a core of small stones between straight faces built of carefully chosen stones. Pavements were constructed of large, well chosen slabs. Door sockets (Fig. 4) were of the type common from Stratum I on.

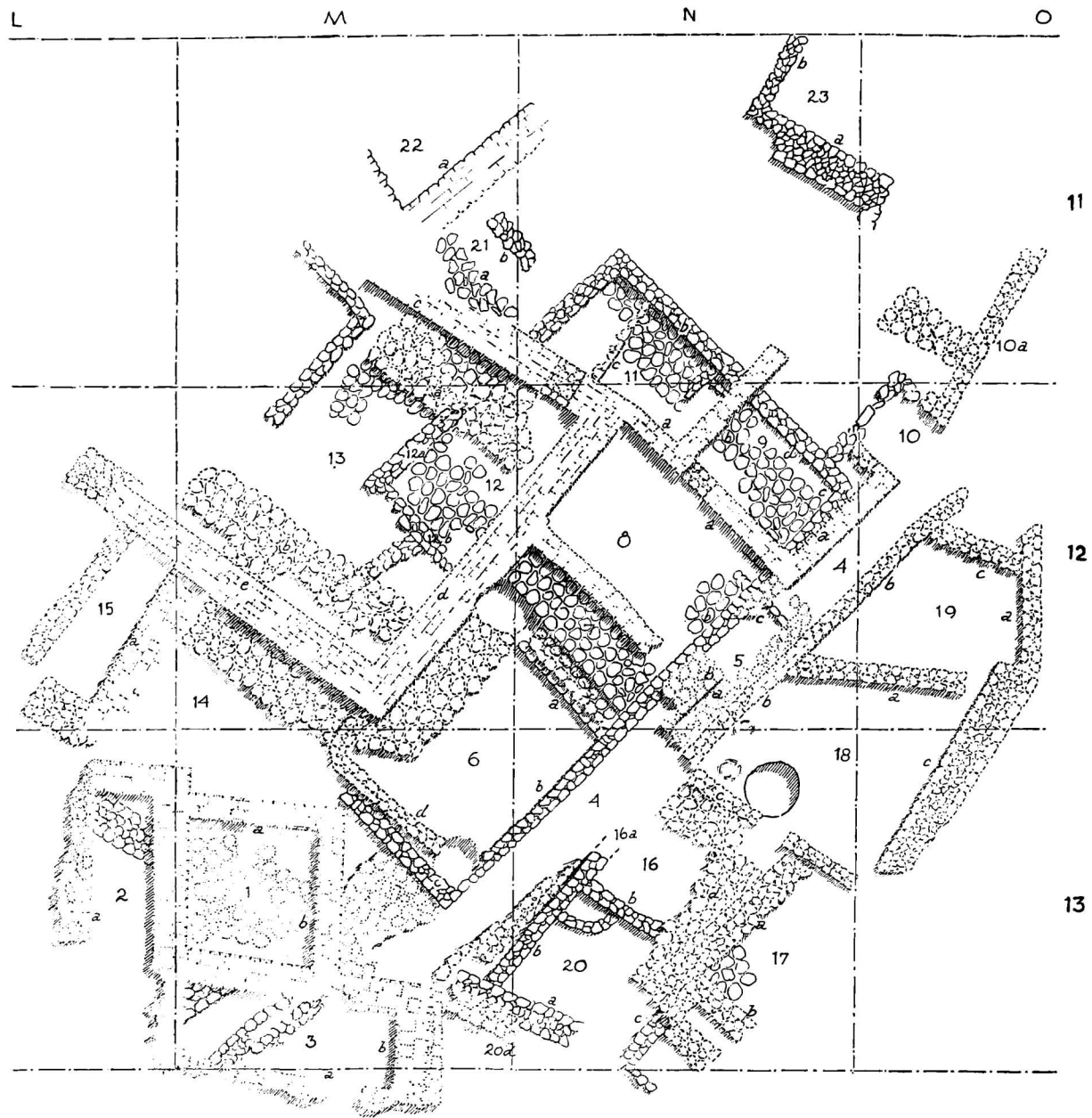


FIG. 5.—PLAN OF LEVEL 2 ON MOUND A. SCALE, 1:200

In Level 2 (Fig. 5) we traced at least two structural complexes, one partly above the other. They have not been dealt with as separate units because the level differences were so slight that several walls could be attributed either to the earlier or to the later complex. In addition, parts of the earlier complex had apparently been re-used during the second building period. In Figure 6 we have tried to define the two complexes.

The outstanding building of the upper complex was a large inclosure, Section 13, with broad *kerpich* walls bordered by paved areas. No walls associated with the upper complex were

found inside this inclosure. Only a low *kerpich* ledge bordered the pavement southwest of Wall 13c. We may assume, however, that Section 13 was a house from which the room walls had disappeared. To the upper complex we attributed also a series of structures along the edge of the mound. These were Section 15; a building including Sections 1, 2, and 3; and Section 17, the outer wall of which had crumbled over the mound edge. Walls 19c, 23a, and 22a may have bordered similar rooms. It seems reasonable to assume that these rooms at the edge of the mound top, especially Sections 1, 2, and 3, had a military character. From these points the entire environment of the Alişar mound could be watched, and the mound top could be defended.

The principal structure of the lower complex, a square building including Sections 7, 8, 9, 11, and 12, closely resembled Section 13, the main building of the upper complex. The lower

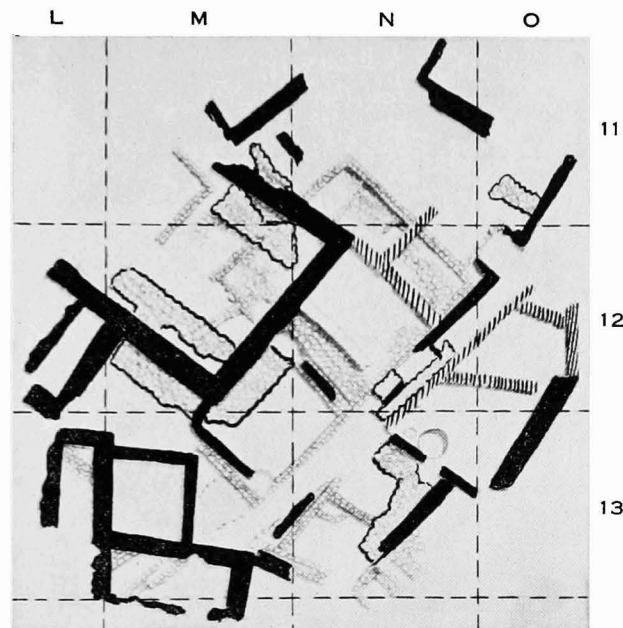


FIG. 6.—PLAN OF LEVEL 2 ON MOUND A, SHOWING THE UPPER COMPLEX (BLACK, WITH PAVEMENTS OUTLINED IN BLACK), WALLS RE-USED IN THE UPPER COMPLEX (HATCHED), AND THE LOWER COMPLEX WITH SOME DOUBTFUL WALLS. SCALE, 1:400

building had about the same extent as the upper one, and its southwest and northeast walls were adjoined by narrow paved rooms. The northeast section was subdivided. Some rooms had fireplaces, suggesting their use as living-quarters. The outer walls of the building were considerably weaker than those of Section 13. This was true for the other structures of the lower complex as well. Presumably most rooms of the lower complex were re-used during the second building period. Several wall fragments, especially in the southeast and southwest sections, may have been intermediate between Levels 2 and 3.

SECTIONS 1, 2, AND 3.—Of the architectural remains uncovered in L 13 and M 13 only Section 1 was known in 1927.²³ The *kerpich* walls bordering it on the south and west seemed unusually broad (approximately 2.85). In 1928 we found that the south and west walls of Section 1 were actually about 1 meter in breadth. Layers of *kerpich* which had weathered off from these walls had entirely covered the narrow adjoining Sections 2 and 3. The outer edges of stone Walls 2a and 3a had crumbled, but it is probable that each of these also once carried a *kerpich* superstructure. In an earlier publication it was suggested²⁴ that Section 1 was a guard-

²³ See *OIP* VI 106 ff.

²⁴ *Ibid.* p. 108.

room. This is probably true, for the whole structure (Sections 1, 2, and 3) was situated at the edge of the mound top. No connecting doorways could be found in the low *kerpich* layers on top of the stone foundations, but a gap in the south wall of Section 3 suggested a doorway leading outside. Only Section 1 was paved.

The foundations of Walls 1a and 1b, averaging .40 in height, were well built of carefully selected natural stones. As in most broad *kerpich* walls, the straight faces of the foundation were built of flat stones, and the core was filled with smaller stones, many not larger than a fist. The lowest course of the foundation consisted of larger stones than did the top course. Large stones formed the outer corner of Walls 1a and 1b, but they were not interlocked. These walls were covered with débris of walls which had belonged to Level 1 (Stratum VI). The stone foundation of Wall 3b was .35 higher than those of Walls 1a and 1b. Wall 20d, directly superimposed on Wall 20a, almost continued the north wall of Section 3 and probably belonged to the same complex. In Section 3 we found sherds with the band decoration typical of Stra-

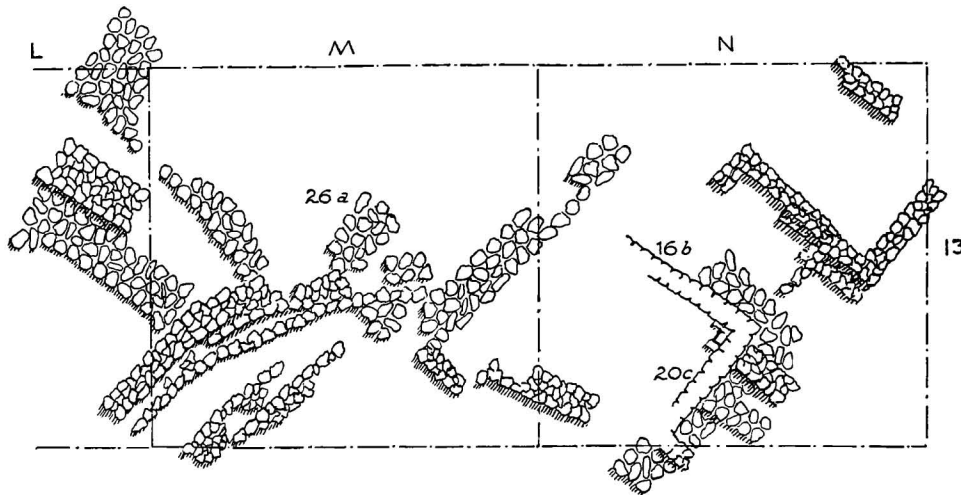


FIG. 7.—LOWER SUBLEVEL OF LEVEL 2 ON MOUND A IN L-N 13. SCALE, 1:200

tum V. A double-disk handle of Period IV type had intruded from below, and Roman *terra sigillata* sherds had fallen down from the Stratum VI structures. The skeleton of a horse was found here.

Remains of a sublevel (Fig. 7), perhaps contemporaneous with the lower complex, were visible at the floors of Sections 2 and 3 (cf. Fig. 5). After the upper walls had been removed, it was found that the lower wall in Section 2 was continued under the eastern wall of that room. It was bordered at either side by patches of pavements, the northern one being level with the top of the stone foundation of Wall 15a (cf. p. 12). Wall and pavements were poorly preserved. The walls below Section 3 proved to be part of a passage, the remains of which were one or two courses high. The southern end had crumbled down the mound edge. The northeast end almost touched the cornerstone of Section 6 and was level with it. A paved area .30-.50 below the base of Section 6 and continuing the passage toward the northeast seemed to belong to Level 3 (Pavement 26a of Level 3; cf. Fig. 12).

SECTIONS 4, 5, AND 10.—Passage 4 (Fig. 8) and the rooms at both sides seemed to belong to the lower complex. Two nearly parallel walls extending northeast from Section 3 formed a road or passage averaging 1.50 wide. At only a few places were these walls more than .50 high. The southeast wall was broken along Section 16, and here only a few foundation stones were preserved. But adjoining Section 18 this wall was 1.25 high, including a *kerpich* layer of .30.

STRATUM V

9

The *kerpich* bricks were light brown and gray. Their dimensions averaged about $.37 \times .29 \times .105$. We may assume that the passage walls had been foundations of *kerpich* walls in their whole extent. They were of the usual type for such foundations, with faces of large stones and a core of smaller stones.²⁵

Remains of a later passage, Section 5, were superimposed on Passage 4 between Sections 7 and 8 and Section 18. Pavement 5a adjoined Wall 18b, and its northwestern part extended over the top of Wall 8b. Walls 5b and 5c were associated with this pavement.

Southeast of Section 9 a second wall with a *kerpich* layer, Wall 9a, was superimposed on the original wall of the passage. The lower wall ended at the northeast border of Section 9,



FIG. 8.—PASSAGE 4 IN LEVEL 2 ON MOUND A, FROM SOUTHWEST

but after a gap the upper wall was continued toward the northeast as Wall 10a and broke off at the mound edge. Wall 9a and those associated with it probably belonged to a sublevel more recent than most of the walls of the passage and those abutting them (cf. Fig. 6). A broken pot, No. a 511, was found in the passage at the base of Wall 9a. Gateway 10, between Walls 9a and 10a, was 2 meters wide. The ends of Wall 9a (1.25 high) and of Wall 10a (.90 high) were abutted by two walls 1.50 long. No door socket was found. The low row of stones blocking the gateway was probably an old wall fragment abutting Wall 9d.

SECTION 6.—Walls 6a and 6c abutted Wall 6b, part of the northwest wall of Passage 4. The fourth wall of Section 6 was Wall 13d of the upper complex. The pavement, level with the top of the foundation of Wall 13d, was about .50 above the bases of Walls 6a, 6b, and 6c. Skeleton a X1 was found below this pavement (cf. p. 19). The base of Wall 6d, which connected with Section 13, was level with this pavement. These structures and a wall fragment

²⁵ Wall types are in each case indicated by the symbols used on the plans. For this reason unusual types only are described below.

on top of Wall 6a probably belonged to the upper complex. The digging of two pits later in date than the upper complex destroyed parts of both sets of walls. The pit in the south corner reached .25 below the base of Wall 6b. In the north corner Wall 6a and the stone foundation of Wall 13d had suffered. The pit, with expanding bottom, was 1.60-1.80 deep. It extended .90-1.10 below the base of Wall 6a.

SECTION 7.—Adjoining Section 6 was a well paved area, Section 7 (Fig. 9). It was bordered by Walls 13d, 6a, and a continuation of Wall 6b. The fourth side was a narrow *kerpich* wall overhanging toward Section 8. Its stone foundation averaged .90 high and extended .25 higher than that of Wall 13d. The *kerpich* was light brown; no dimensions could be obtained. The pavement slabs were well fitted and of unusually large size, e.g., $.70 \times .35 \times .30$. The floor was



FIG. 9.—SECTION 7 IN LEVEL 2 ON MOUND A, FROM SOUTHEAST

level with the base of Wall 13d and approximately .40 below the bottom of the pavement in Section 6. A paved depression, .30 wide and .10 below the floor pavement, perhaps a drain, extended along the southwest wall. When Wall 13d was removed, it was found that the pavements of Sections 7 and 12 were connected.

SECTION 8.—*Kerpich* Wall 8a, 1.65 high in places, had a stone foundation .40 high. The individual bricks of Walls 8a and 13d had the same dimensions ($.37 \times .33 \times .085-.10$) and the same color scale (light brown, gray, and gray and white). In Wall 8a there was a door or window (Fig. 10). Its trivial height would rather suggest a window. The opening could be seen only after the wall had been brushed clean, when a plain rectangle of dark color appeared, contrasting with the brick marks and light brown *kerpich* color of the rest of the wall. The bricks at the northwest side of the window were headers, as seen on the diagram. At the opposite side the bricks were laid in the usual way, as stretchers. The wall above the opening had sagged but had not broken. Only a small patch of pavement remained, and some flat slabs were scattered about. In a fireplace in the east corner fragments of a crude fire pot mixed

with ocher-colored soil lay on and beside blackened stones. Walls 8*b* and 8*a* both showed traces of fire.

SECTION 9.—Wall 9*a* was certainly built after the original construction of this room (cf. p. 9). The time difference may have been slight, and the original paved floor was probably re-used. The pavement was of the same solid construction as that of Section 7, and here too the slabs were large and especially thick. Some slabs at the edge of the pavement had artificially straightened edges. A poorly defined rectangular opening .85 wide connected the room with Passage 4. It was probably a doorway, the sill of which was .15 above the stone foundation. An opening in Wall 9*b*, probably due to the first occupants, seems to have been walled up to form part of the foundation for a later *kerpich* wall. The heights of the various walls above the pavement were as follows: Wall 9*a*, 1.25 (foundation, .25); Wall 9*c*, .15–.65; Wall 9*d*, .15–.45; Wall 8*a*, 1.55 (foundation, .40); Wall 9*b*, 1.55 (foundation, .65).

SECTION 11.—The southwest border of this room was formed by two walls, the narrow *kerpich* wall 11*a* joining the broader *kerpich* wall 13*c* at an angle. At this angle the wall was 1.95

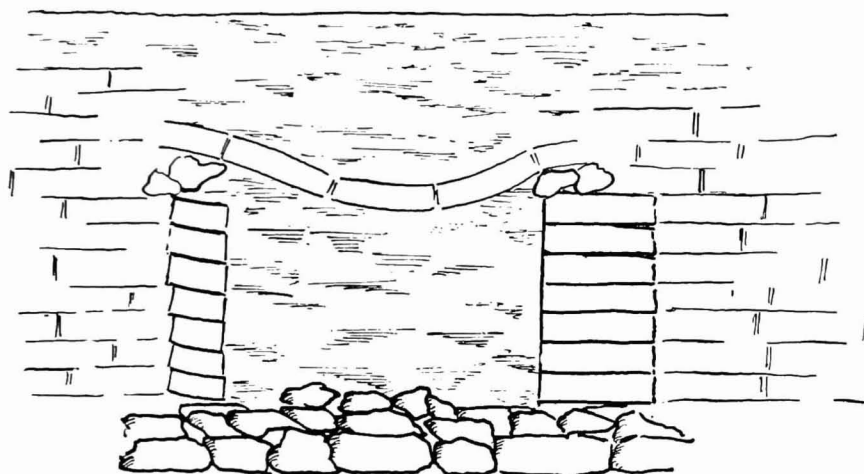


FIG. 10.—DOOR OR WINDOW IN WALL 8*a* IN LEVEL 2 ON MOUND A

high; the stone foundation, .35 high. Wall 11*a* ran parallel to Wall 11*b* (1 meter high). A patch of pavement adjoining Wall 11*b* for most of its length was on the same level as the pavement in Section 9. A narrow stone wall, 11*c* (.60 high), was a later construction. Its base was about .50 higher than the pavement and the bases of the other walls. In the corner formed by Walls 11*b* and 9*b* there was a rectangular fireplace inclosed by one course of stones. The stones walling up the original doorway in Wall 9*b* had been blackened during the use of this fireplace, suggesting that this room also was re-used.

SECTIONS 21, 22, AND 23.—Wall 23*a* probably belonged to Level 2, although it was even with Level 3. This conclusion was based on its construction and its position at the edge of the mound (cf. p. 17, n. 29). Wall 22*a*, which probably belonged to Level 2, may have formed part of a narrow inclosure like Sections 15, 2, and 3. Parts of walls of Sections 16 and 18 of Level 3 (cf. Fig. 12) were destroyed when this wall was built. Wall 21*b*, .60 above the pavement of Section 12 of Level 3, probably belonged to Level 2. Level with this wall there was a paved patch, 21*a*, overlapping the foundation of Wall 13*c* of Level 2, one row of slabs partly covering its northeast edge. The northwest end of Wall 13*c* had crumbled, and it was impossible to determine whether or not the *kerpich* wall had originally extended over the pavement.

SECTION 12.—The pavement of this room, connected with that of Section 7 under Wall 13*d*, was on the same level as the pavements of Sections 9 and 11 also. Wall 12*a* was probably

the continuation of the northwest wall of Section 11, and Wall 12*b* the continuation of Wall 6*a*. Neither of these walls was higher than .50, the distance from the floor of the lower complex to Pavement 13*a*, which was directly superimposed on Wall 12*a*. Although Walls 12*a* and 12*b* abutted the foundations of Walls 13*c* and 13*d*, the latter are ascribed to a more recent date. The wall abutting Wall 12*b* from the southwest was Wall 22*b* of Level 3, the top of which appeared at the bottom of Level 2 (cf. p. 18 and Fig. 12). The corner of another room belonging apparently to the lower sublevel of Level 2 was situated northwest of Section 12 in M 11 (cf. Fig. 5).

Sections 7, 8, 9, 11, and 12 belonged to one extensive complex inclosed by continuous walls and oriented in a uniform way. The floors of the sections were all on the same level. Several, if not all, of the rooms seemed to have been re-used, as indicated particularly by the situation in Section 9.

SECTION 13.—This structure was open toward the northwest, where its fourth wall had apparently crumbled over the edge of the mound. The *kerpich* walls averaged 1.50 in thickness and reminded one of the fortifications on Mounds B and D. The heights of the walls were as follows: Wall 13*d*, 1.40–1.80; Wall 13*c*, .40 (northwest) to 1.90 (southeast); Wall 13*e*, 1.00–1.40. The stone foundations below these three walls averaged .45. Pavements 13*a* and 13*b*, bordering walls 13*c* and 13*e*, were a little above the tops of these foundations. A low *kerpich* ledge was at the southwest edge of Pavement 13*a*. Most of the bricks in the walls were light brown; but some were gray, yellowish brown, or gray with white particles. Their dimensions averaged $.37 \times .33 \times .085$ –.105 (in one case even .13). The colors and dimensions were similar to those of the bricks used in the narrower walls of Sections 8 and 9. For this reason and because neither the narrow *kerpich* walls nor any of the walls of the apparently older complex were far below the level of Section 13, it is probable that no considerable time passed between the building of the lower complex and of Section 13 of the upper complex. The builders of Section 13 apparently re-occupied the other rooms. We separate the two complexes chiefly because Section 13 is oriented differently from the lower complex, because its walls are much broader and stronger, and because the continuous floor level of the lower complex was lower than any pavement in Section 13.

SECTION 15.—This room was identical in type with Sections 2 and 3, and the walls were built with equal care. The *kerpich* wall which stood on Foundation 15*a* had been washed down and had formed a broad *kerpich*-covered area, repeating the case of Sections 2 and 3 (cf. p. 7). It was difficult to determine whether Section 15 belonged to the complex of Sections 1, 2, and 3 and had simply been built against Wall 13*e*, or whether it was an annex of Section 13. In either case, Section 15 was somewhat lower than the room or rooms with which it was associated. On the one hand, the stone foundation of Wall 13*e* was terraced at the points where the walls of Section 15 abutted (Fig. 11). On the other hand, the base of the north wall of Section 2 was .45 above the top of the foundation of Wall 15*a* (cf. p. 8). That Section 15 was built, in terrace fashion, farther downhill than the rest of the contemporaneous buildings accounts for the fact that it was on the same level as Section 24 in Level 3 (cf. p. 19). There were 2 meters of earth between the base of the west part of Section 15 and the top of the Alishar IV citadel wall.

SECTION 14.—The pavement bordering Wall 13*e* in Section 14 was about .20 above the top of Wall 15*a* and a little below the top of the foundation of Wall 13*e* (Fig. 11).

SECTION 20.—Wall 20*a* was 1 meter high; the other walls bordering Section 20 were .80–.90 high. Wall 20*d*, .30 high, was superimposed on Wall 20*a* (cf. p. 8). Walls 20*c* and 16*b* were partly hidden below later wall fragments and Pavement 16*d*. A curved wall cut off the northern corner of Section 20. It may have been a storage bin, for no ashes or charcoal were found.

STRATUM V

13

The wall fragment in Passage 4 (running parallel to Wall 20*b*) was only one course high and did not extend as deep as Wall 20*b*. It was probably part of some later structure.

SECTION 16.—The situation in this corner of Level 2 was obscure. There had been rebuilding, old walls such as 16*a* and 16*b* seemed to have been re-used, and short wall fragments without apparent connections were present. Walls 16*a* and 16*b* were on the level of Section 20. A wall fragment and a patch of paving, level with these walls, extended beneath Wall 17*a* (cf. Figs. 5 and 7). Pavement 16*d* and the base of Wall 16*c* were level with the tops of Walls 16*a* and 16*b* as we found them. A door socket of roughly oval shape with a depression .12 in diameter and .07 deep had been re-used as a pavement slab. It could not have belonged to the doorway in Wall 16*c*.

SECTION 17.—The broad wall 17*a*, still covered with a low *kerpich* layer, resembled in style the thick *kerpich* walls of Sections 1, 2, 3, 13, and 15. The top of Wall 17*a* was only .30 above the upper pavement (16*d*) in Section 16, but it was .90 above the pavement in Section 17, which seemed to belong to an earlier occupation. The base of Wall 17*b* and a paved patch southwest of it were about .25 above the pavement in Section 17.

SECTION 18.—Wall 18*a* was interlocked with the border wall of Passage 4. On Wall 18*b* a short fragment of light brown and yellowish brown *kerpich* was preserved, but only the length

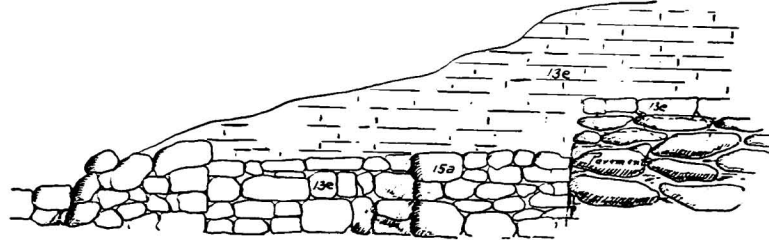


FIG. 11.—DIAGRAM OF SECTION 15 IN LEVEL 2 ON MOUND A, FROM SOUTHWEST. SHOWING ITS RELATION TO WALL 13*e*. SCALE, 1:50

(.37) and the height (.10) of the bricks could be determined. The base of this wall was about .30 above that of the opposite border wall of the passage. The broad wall 18*c* was a typical stone foundation for a *kerpich* wall (cf. p. 6). Its relation to the other walls of the room was doubtful. Its height was .50; that of the other walls ranged from .70 to .90. A distinct streak of ashes and charcoal directly below the base of Wall 16*c* indicated the level of the floor. In the west corner there were two fire pots and fragments of a third. The fire pot nearest the corner, .25 high, had a double wall of crude, brittle, light brown earthenware. The inner shell was .035 thick; the outer, .025. Beside this fire pot was a refuse pit filled with ashes and charcoal.

SECTION 19.—The corner of Wall 18*c* reaching into this room was only .20 above the floor. The other walls were .60–1.00 high. The base of Wall 19*a* was on the same level as that of Wall 18*c*, but the type of construction of the two walls was different. In the south wall a fragmentary hand mill had been re-used as a wall stone. The north wall, 19*c*, had crumbled badly. Its base was level with that of Wall 9*a*, the upper wall on the opposite side of Passage 4.

MOUND A. LEVEL 3

The structures in Level 3 on Mound A (Figs. 12 and 13) were a mass of walls and wall fragments, pavements, refuse pits, and fireplaces. Only a few rooms were well defined, and it was difficult to see coherent structures. The ruins seemed to be those of a small and unimportant settlement. Many walls were very narrow and weak, and their courses were irregular. Some foundations were well preserved, but the walls were not high. *Kerpich* remains were found

on two walls only, in contrast to the many broad, well made *kerpich* structures in Level 2. Throughout Stratum V it was difficult to define the differences in levels; on Mound A it was almost impossible to do so in the lower layers which we group as Level 3.

SECTION 1.—Wall 1a, averaging .60 in height, was one of the few well built walls in Level 3. It was built of large stones and had straight edges. The floor on which it stood had the reddish

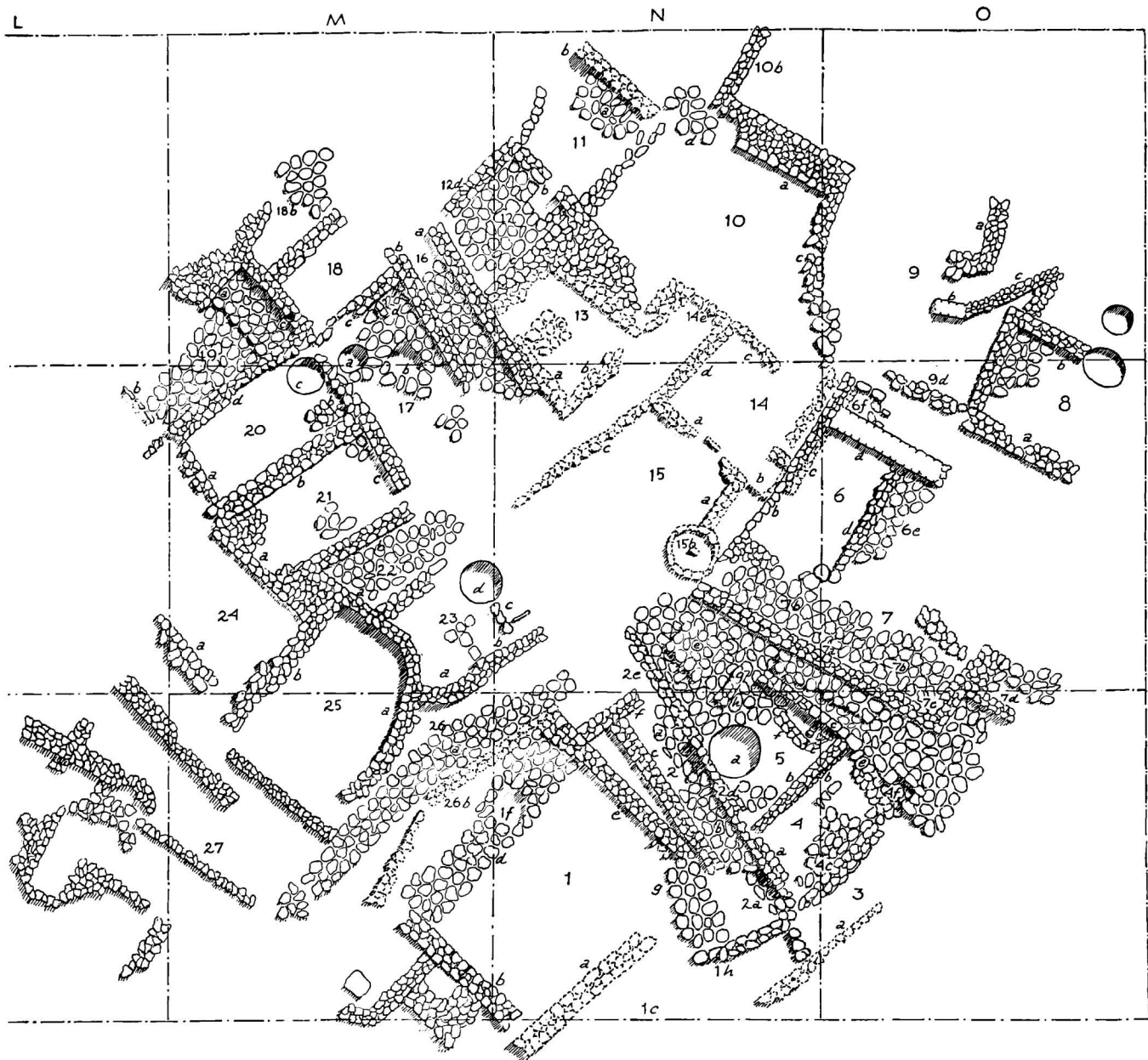


FIG. 12.—PLAN OF LEVEL 3 ON MOUND A. SCALE, 1:200

color of *kerpich* exposed to a strong fire. A streak of soil discolored in the same way extended along the southeast border of the buildings on Level 3 and partly below them. Later it was found to be a burnt *kerpich* layer on top of the Alishar IV citadel wall.²⁶ The rather sharp edge of a stone pile at 1c was level with the base of Wall 1a and bordered a rock-covered area which faded into the rock pile of the Alishar IV citadel wall.²⁷ The base of Wall 1b was .30-.40 higher

²⁶ See OIP XIX 225.

²⁷ See plan of Alishar IV citadel, OIP XIX, Fig. 277.

than that of Wall 1*a*. A gap in Wall 1*b* suggested a doorway. A wall fragment three layers high extended from this wall toward the southwest. Near by lay a large unwrought stone slab. Pavement 1*d*, level with the base of Wall 1*b*, extended from that wall to Wall 1*e* and was interrupted by a refuse pit, 1*f*, which was .40 deep. The base of Wall 1*e* was .30-.40 higher than the base of Wall 26*b* which it abutted. Its north corner extended over the top of Wall 26*b*. Near the southeast end of Wall 1*e* there was a fireplace, a flat slab with an upright slab at either end, all blackened by fire. A paved patch, 1*g*, south of Wall 1*e* and bordered on the south by Wall 1*h*, was level with the lower pavement (2*a*) of Section 2.

SECTION 2.—There was no level difference between Walls 1*e*, 2*c*, and 2*d*. Wall 2*f* abutted Wall 1*e* and was connected with Wall 2*c*. It appeared that Wall 1*e* was a house wall, whereas Walls 2*c* and 2*d* were passage walls bordering Pavement 2*b*. This pavement was directly

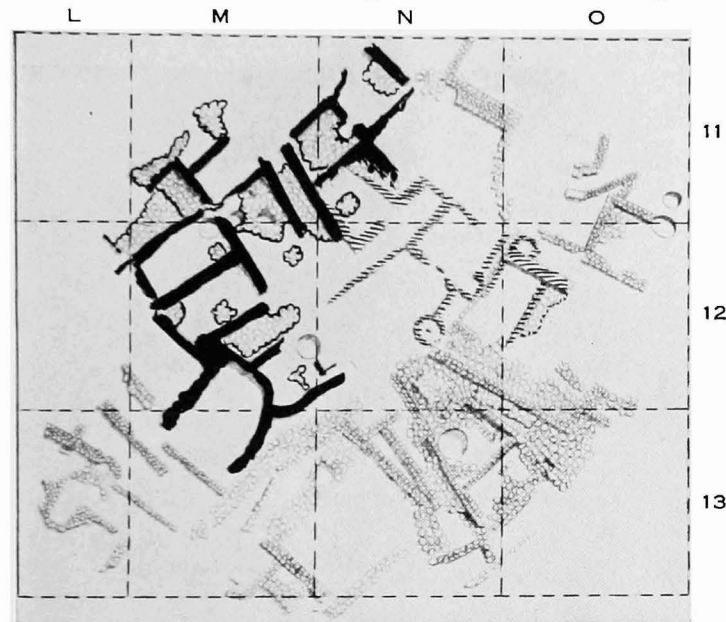


FIG. 13.—PLAN OF LEVEL 3 ON MOUND A, SHOWING THE UPPER COMPLEX (BLACK, WITH PAVEMENTS OUTLINED IN BLACK) AND THE LOWER COMPLEX (HATCHED). SCALE, 1:400

superimposed on Pavement 2*a*, which undoubtedly was associated with Wall 2*e*, an earlier wall underlying Wall 2*d*.

SECTION 3.—Wall 3*a* consisted of one row of small stones, two or three layers high. It stood on the reddish *kerpich* soil mentioned above. A row of slabs connected this wall with Wall 1*h*.

SECTION 4.—Wall 4*a*, of an older structure, was probably the continuation of Wall 2*e*, since it lay under Wall 2*d*. Wall 4*b* lay below Wall 5*b*. Pavement 4*d* seemed to belong to the lower structures. It extended below Wall 4*c*, and its edge was visible in Section 3. A layer of stones suggesting a wall (4*e*) bordered Section 4 on the northeast. A small rectangular chamber (4*f*) adjoined this wall. It may have belonged to either layer, but its walls were built in the same fashion as Wall 5*c* of the upper sublevel.

SECTION 5.—The upper sublevel in Section 5 was represented by Walls 5*c*, 5*b*, and 2*d*, and possibly by Walls 5*g* and 5*f*. The preserved foundations were low. Wall 5*b* rested directly on Wall 4*b*, and the two together were .55 high. Pavement 5*e* belonged to the upper layer. It was made of rectangular stones averaging .40×.40×.30. Some of these stones had been partly wrought. In all the strata of the mound taken together only a few wrought stones have been found. The bottom of Pavement 5*e* was .35 above Pavement 5*h*. The older pavement

was continued northeast of Sections 4 and 5 and extended beneath a patch of more recent paving slabs between Walls 5c and 7a. Pit 5a had been dug from Level 2 through Level 3, and its bottom was .70 below the edge of Pavement 5h. Fireplace 5i occupied the east corner of the room (Fig. 14). Here the upper stones of Walls 5c and 5b and a narrow row of stones projecting from Wall 5c were blackened, as was the end of Wall 5f.

SECTION 7.—Pavement 7b, averaging 1.50 in breadth, extended parallel to Wall 7a and sloped downward toward the northeast. Its level was intermediate between the levels of Pavements 5h and 5e, but we attributed it to the lower level because the paving slabs corresponded in size and arrangement to those of Pavement 5h. The southeastern end of Pavement 7b was only .30-.80 above the top of the Alishar IV citadel wall. Wall 7a reached only .05 above the pavement; its entire height was .40. Walls 7c and 7d stood on top of Pavement 7b. Wall 7c extended over the top of Wall 7a.



FIG. 14.—FIREPLACE 5i IN LEVEL 3 ON MOUND A, FROM SOUTH-SOUTHWEST

SECTION 6.—Walls 6a, 6c, and 6d, and Pavement 6e were contemporaneous. Wall 6b was superimposed on Wall 6c and was visible at the bottom of Level 2. The only upper structures of *kerpich* on this level were on Walls 6a and 9b. The light yellowish brown bricks of Wall 6a were .10 high. Other dimensions could not be obtained. The wall stood .70 high, including its stone foundation of .35. A small room, 6f, adjoining Wall 6a may have been a latrine, as may other small annexes (e.g., 4f). Two upright slabs .30 high were at the entrance, and the fourth side was bordered by one course of large stones. Wall 6d had crumbled and was only one or two courses high. Pavement 6e adjoined it on the outside and was level with its top as we found it.

SECTION 8.—This was the only well defined room in the northeastern part of Level 3, but the east wall was entirely missing. It had probably crumbled down the mound slope, which started abruptly 1.50 to the east. The walls were .40-.70 high, and the pavement was .15 above their bases. Wall 8b had been partly destroyed by the digging of a refuse pit at one end of it. This pit extended .30 below the base of the wall. A second pit north of it was only .15 deep.

SECTION 9.—Only a few wall fragments were preserved here. A pile of rocks, 9*d*, marked the course of a wall which continued Wall 8*a*. Walls 9*a*, 9*b*, and 9*c* were situated north of Section 8. On the stone foundation of Wall 9*b* a few *kerpich* bricks were preserved. They were a darker brown than the bricks of Wall 6*a* and were only .07 high. Other dimensions could not be obtained.

SECTIONS 14 AND 15.—These two fragmentary inclosures seemed to be part of the older group of structures shown in Figure 13. Walls 14*a*, 14*c*, and 14*d* were of the same sublevel as the older walls in Section 6. Walls 15*a* and 15*c* in Section 15 and Walls 13*a*, 13*b*, and 14*e* to the northwest also belonged to this sublevel. At an average the walls of this complex measured only .20–.30 in height. There was a gap in the center of Wall 14*a* suggesting a doorway. A flat rectangular stone lay in front of it. Two fireplaces deserve notice. Fireplace 14*b* was made of slabs leaning against Wall 6*c*.²⁸ One side of the fireplace was a short, narrow wall abutting Wall 6*c*. A very thin slab (.02 thick) formed the southwestern border. A circular



FIG. 15.—FIREPLACE 15*b* IN LEVEL 3 ON MOUND A. FROM NORTHWEST

fireplace, 15*b*, was inclosed by small stones and slabs (Fig. 15). The highest point of its wall measured .35. A coat of blackened *kerpich* .02 thick covered the inside of the wall, and a single blackened stone stood in the center. A layer of ashes and charcoal perhaps .05 thick covered the bottom.

The structures in the northwest portion of Level 3 appeared to belong to a coherent group, an upper sublevel of Level 3 (cf. Fig. 13). The complex seems to have consisted of two wings, one on either side of Passage 16. The wing to the southwest included Sections 17–22 and perhaps Sections 23–25. The northeast wing included Sections 12 and 13 and perhaps Sections 10 and 11. The walls were badly oriented, and the preserved foundations were low at most spots. In several rooms only small patches of pavement remained.

SECTION 10.—Wall 10*a*²⁹ was somewhat lower at base than Walls 10*b* and 10*c* and Pavement 10*d*. Nevertheless, Wall 10*a* was ascribed to Level 2 on account of its construction (cf. p. 11).

SECTION 11.—Here remains of Pavement 11*a*, Wall 11*b*, and rock piles indicating the con-

²⁸ The stones of Wall 6*b*, which was built later, were not blackened.

²⁹ In Figure 5 Wall 10*a* is designated as Wall 23*a*, and Wall 10*b* as Wall 23*b*.

tinuations of Walls 12*c* and 12*d* were the only structures left. Wall 11*b* was .50 high. Its base was .90 above the floor of a room of Level 4.

SECTIONS 12 AND 13.—The doorway between Sections 11 and 12 was marked by straight edges .35 apart. The wall foundations of Section 12 were traceable, and almost the entire floor was paved except the space just inside the door. Little was left of Section 13. A patch of pavement, 13*c*, indicated the floor level. Wall 16*a* was directly superimposed on Wall 13*a*, which belonged to the older complex of Sections 14 and 15.

SECTION 16.—The pavement of Passage 16 was level with that of the neighboring rooms. The walls were too low to show whether there had been doors from the passage to these rooms. The northwestern part had been destroyed by a structure of Level 2 (probably Wall 22*a*; cf. p. 11).

SECTION 17.—The southeast wall of this room was entirely missing, and Wall 17*c* was hardly traceable. Several pots were found, however, particularly in the vicinity of Fireplace 17*d*. This fireplace, like most of the others in Level 3, was marked mainly by the blackened wall stones in the corner of the room. Only small patches were left of the pavement which had once covered the floor of this room. Pits 17*a* and 17*b*, probably of later date, had been dug through the floor. They were .20 and .50 deep respectively.

SECTION 18.—The northeast wall of Section 18 had been destroyed by later buildings (cf. Section 16). A paved patch, 18*b*, and a pile of stones continuing Wall 19*a* indicated that there had been another room northwest of Section 18.

SECTION 19.—The occurrence of a number of pottery vessels and the fact that the floor was rather carefully paved suggested that this room was particularly important. It was situated at the edge of the mound top on the margin of the area occupied by the structures of Level 3. Most of Wall 19*a* had fallen over the mound edge. The southwest wall may have been destroyed during the building of a Level 2 wall, 13*e*. The pavement as we found it was bordered on the southwest by a row of upright slabs (19*b*) .10-.30 high. The northwest edge of the pavement was 1.10 above the floor of Level 4. In the northeastern part there was an offset .10 higher than the rest of the pavement. Wall 19*c* was .40 high. A hole near its east end contained charred remains of a wooden beam about .15 in diameter.

SECTION 20.—Sections 19 and 20 were somewhat terraced. The face of Wall 20*d* toward Section 20 was .30 high; that toward Section 19 reached .15 deeper. Walls 20*a* and 20*b* had almost disappeared. Wall 20*a* had been partly destroyed during the construction of Section 13 of Level 2. Wall 20*b* may have been disturbed during the digging of Pits 20*c* and 17*a*. Pit 20*c* was .55 deep. There may have been a doorway in the northern corner of the room. Remains of a fireplace were marked by some blackened stones in the east corner.

SECTION 21.—Although relatively well preserved, Walls 21*b* and 22*b* were both overhanging toward this room. Both were about .80 high and did not show any openings suggesting doorways. A low wall, 21*c*, ended with a straight edge .35 before it would have abutted Wall 22*b*. The straight edge may have been accidental, or perhaps the opening was a doorway. Wall 21*a* was narrow and weak. A few stones protruding from below its base suggested that it may have stood on an older foundation. Remains of a pavement, flat slabs level with the bases of the walls, lay in the center and in the north corner of the room. Fireplace 21*d* was a flat slab with an upright slab at one end, the other two sides being the walls of the south corner of the room. The slabs and wall stones were blackened. Probably the rock pile in the western corner was made up of stones fallen from neighboring walls.

SECTION 22.—A pavement, curved as though by pressure, covered the entire floor. Walls 22*a* and 22*b* formed an acute angle. The outer edge of the west end of Wall 22*a* had disap-

peared in a stone pile. The northeast wall of the room was missing, as was that of Section 23. A low wall, .20 high, separated this section from Section 23.

SECTION 23.—A curved wall, 23*a* (cf. Wall 25*a*), was continued by a straight wall, 23*b*, with a jog where they joined. A few fire-blackened stones and an upright slab indicated the site of Fireplace 23*c*. Some slabs extending from the base of Wall 23*b* may have been the remains of a pavement. A large refuse pit, 23*d*, dug even later than the Level 2 occupation, extended .30 below the floor (the same pit shown in the north corner of Section 6 of Level 2).

SECTION 24.—Only Walls 25*b* and 21*a* of this section were actually in Level 3. Wall 24*a* was .30-.40 above this level. The northwest border of the room as we found it was formed by Wall 15*a* of Level 2 (cf. p. 12).

SECTION 25.—Wall 25*b* was in bad condition, but in places two or three layers of stones were preserved, making its position clear. The curved Walls 25*a* and 23*a* were unusual. They had a corral-like appearance. Skeleton X1, probably interred during the early occupation of Level 2, was level with the top of Wall 25*a* (cf. pp. 9 and 87).

SECTION 26.—The base of Wall 26*b* was .30-.40 lower than that of Wall 1*e* (cf. p. 15); its top was only .10 above Pavement 26*a*. The bases of Walls 25*a* and 23*a* were level with Pavement 26*a*, and their tops reached to a height of .40-.60 above it. Although part of Pavement 26*a* was visible at the bottom of Level 2 (cf. Fig. 7), we ascribed it to the upper layers of Level 3.

SECTION 27.—Fragments of walls, in some cases merely single rows of stones, and a patch of pavement belonged to this section. They were parts of buildings which had crumbled over the mound edge or had been disturbed by later building activities.

THE FORTRESS COMPLEX ON MOUNDS B, C, AND D

During 1927 a section of an interesting fortress wall had been uncovered on Mound B.³⁰ In 1929 we carried our excavations deeper in F 14 on Mound B, tested Mound C, and made a rather extensive excavation on Mound D. It appears that Mounds B, C, and D were inclosed by a continuous wall. Along the north and northeast edges of Mound D we excavated particularly strong and well preserved sections of this wall (Fig. 16), with a tower where the two sections met (Fig. 17*A*). On Mound C we did not strike the fortress wall at all. The excavation of the southern wall on Mound B was not continued to the point where the wall probably turned north, but the turning-point of the wall on Mound D suggests the general plan of the Mound B wall.

The topographical prominence of Mounds B, C, and D (cf. Fig. 2) was due to the presence of the Period V fortress. When the fortress was built, Mounds B, C, and D were one mesa, as indicated by the horizontal plane of the stone foundation and protection wall of Section F I of the wall on Mound D and of the structures uncovered in F 8 and G 8 on Mound C. Even then little drainage gullies may have cut their way down the northwestern slope of the mesa. Later on they became the deep depressions between the mounds, gathering the entire drainage of the main mound and its promontories.

The abrupt outer slopes we found on Mounds B, C, and D originated because a strong, high wall inclosed and surmounted the Period V settlement. On Mound D, for example, the mound surface paralleled the slope of the present top of Section F I of the fortress wall (Fig. 18; cf. Fig. 16). Had there been no settlement on Mounds B, C, and D later than the original occupation of the fortress, the centers of these mounds (over the house ruins) would have been lower than the edges (supported by the strong fortress wall). As it happened, the interior of the fortress was filled with superimposed architectural remains of successive occupations,

³⁰ See *OIP* VI 73 ff. and 195 ff.

especially in F 14 and L-M 5. On Mound D, at least, no architecture whatever appeared outside the defense wall. A dark-colored refuse layer, apparently the accumulation of refuse thrown over the wall by the successive occupants, extended from the base of the wall to its top.

The deposit in the fortress complex was not very fertile as compared to the contents of other strata. If the fortress had been destroyed by force, more objects might have been left, but the only traces of destruction noticed were those due to time and weather.

THE FORTRESS WALL ON MOUND D

The topography of the sharp northeast edge of Mound D induced us to select a test square comprising the eastern half of L 5 and the western half of M 5. Here a rather well marked strip of sparse growth, extending from a point about halfway up the slope of Mound A, suggested the site of a fortification wall like that on Mound B. However, instead of a powerful defense wall, we struck first a stone inclosure (Section 1 in Fig. 26) a little below the surface. About .60 below the wall tops of this inclosure a broad band of *kerpich* (2), showing patches

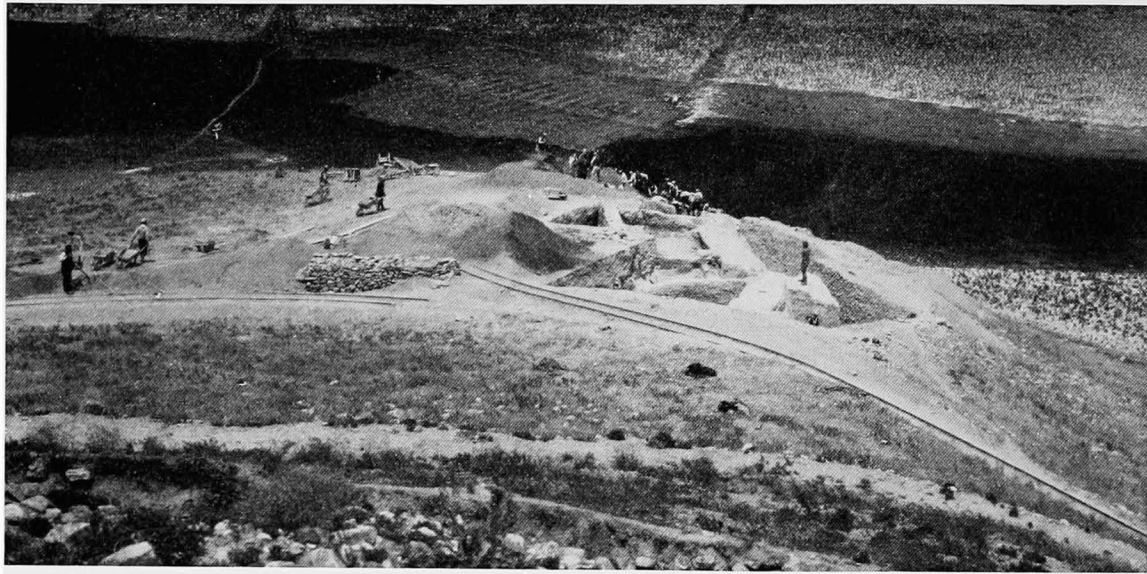


FIG. 16.—THE FORTRESS ON MOUND D, FROM MOUND A

with brick marks, extended roughly northwest to southeast. This *kerpich* covered the fortress wall, which was 1.20 below the surface at the southern plot border and .65 below at the northern edge. We dug to the base of the wall in L-M 5, followed its course as shown in Figure 17A, and excavated the structures just inside the wall. That part of the wall which continues Section F I A to the southeast is still unexcavated. Its course is marked by the strip of sparse growth mentioned above, though its present top must be at least 1 meter below the mound surface, to judge by its distance from the surface at the plot wall of L-M 5.

For description we have divided the fortress on Mound D into four main sections. The wall itself was composed of five parts (Fig. 19; cf. Fig. 18): the stone foundation, *a*; the stone protecting wall, *b*; the vertical lower *kerpich* section, *c*; the inclined upper *kerpich* section, *d*; and the parapet with battlements, *e*.³¹ The stone foundation was visible only in Sections F II and F IV where the protecting wall had crumbled off. In the other sections we cut small trenches through the stone protecting wall in front in order to study the foundation and the lowermost *kerpich* courses.

³¹ The hypothetical reconstruction is based on certain clues and the elimination of certain factors. Probably no reconstructions are absolutely correct, but at least they give an idea of what the original structures may have been.

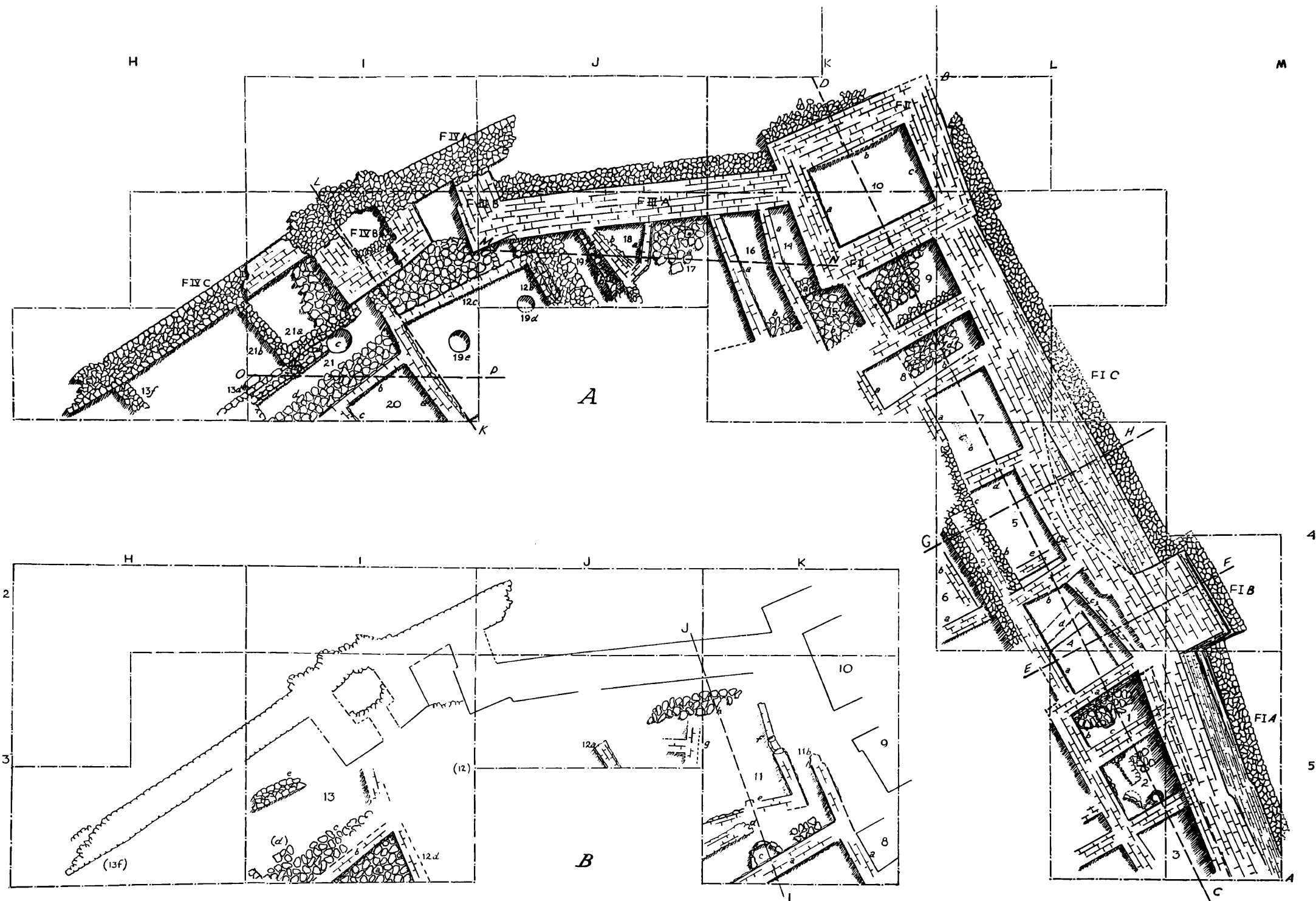


FIG. 17.—PLAN OF THE FORTRESS ON MOUND D, WITH A KEY TO CROSS-SECTIONS. A.—THE LOWEST LEVELS EXCAVATED. B.—THE UPPER LEVELS IN SECTIONS F III–IV. SCALE, 1:200

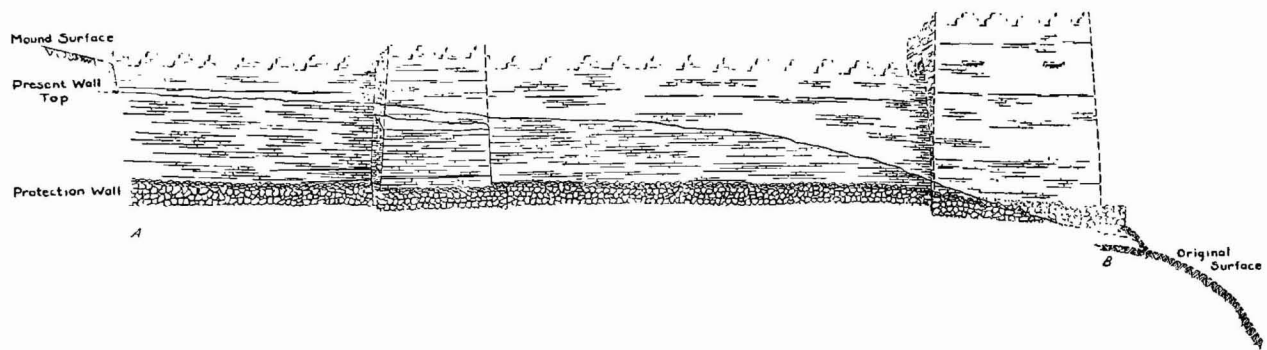


FIG. 18.—RECONSTRUCTION OF SECTIONS FI-II OF THE FORTRESS WALL ON MOUND D. SCALE, 1:300

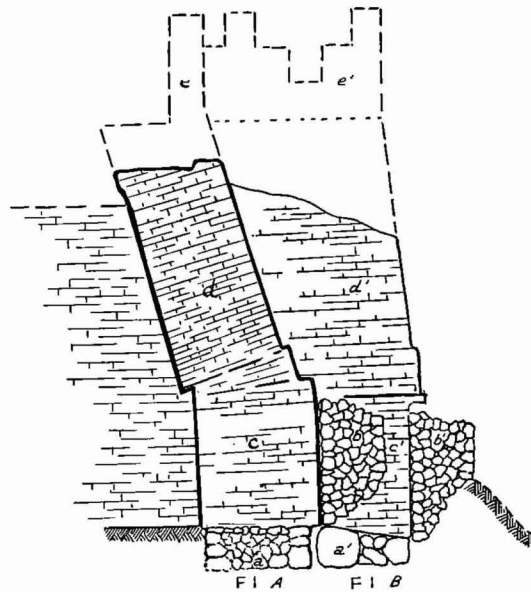


FIG. 19.—DIAGRAM OF THE FORTRESS WALL ON MOUND D WHERE SECTION FI A ABUTS SECTION FI B, WITH PARAPET AND BATTLEMENTS RECONSTRUCTED. SCALE, 1:100



FIG. 20.—SECTION FI OF THE FORTRESS ON MOUND D, FROM SOUTHEAST

SECTION F I A.—Section F I A extended roughly northwest for a distance of 10.50, where it abutted Section F I B. This critical point was cleared (Fig. 20). The stone foundation, *a*, of Section F I A was .55 high and composed of stones not higher than .25, whereas the abutting foundation stone of Section F I B (*a'* in Fig. 19) was .50 high. A foundation so low and built of such relatively small stones was weak, of course, as compared even with a wall of such inconsiderable height as that represented in the reconstruction. However, the foundation had been sunk into the ground, as indicated by the fact that the bottom of the protecting wall reached only to its top.

The protecting wall, *b*, .80 thick, was built of stones averaging $.20 \times .10 \times .15$. The face adjoining the main wall was 1.65 high. The upper part of the outer front was faced for .75 and was doubtless exposed. The lower part, which receded with an irregular front, may have rested on a dirt wall thrown out from the trench which was dug for the foundation, *a* (Fig. 21). The protecting walls of Sections F I A and F I B were not connected, but left the southeast corner of Section F I B exposed. In spite of this seeming blunder, the corner had not weathered more than the adjoining protected parts.

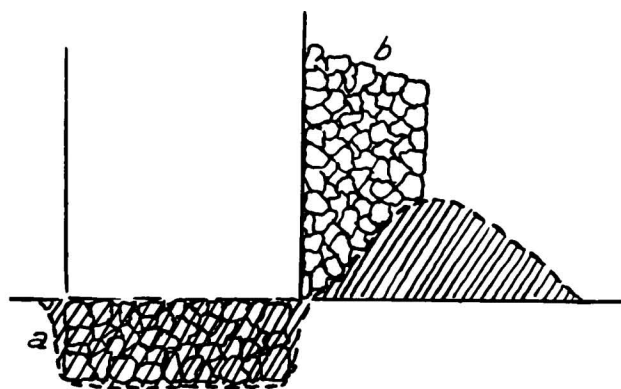


FIG. 21.—DIAGRAM OF THE FORTRESS WALL, SHOWING SCHEME OF CONSTRUCTION OF THE STONE PROTECTING WALL. SCALE, 1:50

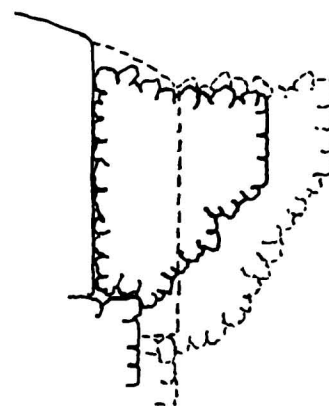


FIG. 22.—DIAGRAM OF THE PROTECTING WALLS WHERE SECTION F I C ABUTS SECTION F I B. SCALE, 1:50

The outer face of the lower *kerpich* wall, *c*, in Section F I A was vertical to a height of 1.90 at the point where F I A meets F I B (cf. Fig. 19). On top of the vertical part was a ledge about .15 broad, which extended 3.50 along the face of the wall, becoming narrower and finally disappearing. From this ledge the wall rose, slightly receding, to a second ledge .40 above, where the inclined upper part of the wall (*d*) started. We cannot help thinking that this arrangement of steps from dirt wall to protecting wall and up to the two ledges was rather inviting for an enemy attacking the fortress (cf. Fig. 20). At the inner face of *c* (see Fig. 19), 1.70 above the top of the stone foundation, we came upon a .15 offset. It must have been exposed along with the rest of the lower wall section, since its lower side had been blackened by soot in the same manner as the wall faces below and above it.

The upper wall section, *d*, was inclined at an angle of 16° at the point where it abutted Section F I B. Its breadth (1.50–1.60) was about the same as that of *c* below. Its height, measured from the first step, was 2.70. The inner face of *d* was inclined to such an extent that it paralleled the outer face. After sectioning the fortress wall by cutting out a piece 1.50 broad, we saw that the inner offset and the upper ledge on the outer face marked the beginning of the inclined part of the wall (cf. Fig. 19). Below the inclined part was a wedge-shaped section where the brick contours were indistinct, particularly in the part near the inner face. In the

same manner the lowest *kerpich* courses, *c*, were solidly packed because the weight of the wall had compressed the bricks, though in places fine contour lines could be traced. The bricks in the top part of the wall were loose, showing vertical interstices up to .04 wide, but their horizontal joints were not very well marked. In most cases it appeared that very little mud or none at all had been used between the superimposed layers. The bricks of the inclined part (*d*) were perfectly staggered.

There is hardly a doubt that the inclined upper part of the wall was originally constructed in this manner. Had the inclination been a mistake of the builders, it could easily have been corrected as soon as noticed. If it were due to the influence of time, the *kerpich* would presumably show cracks at the point where the inclined part starts; but the exterior face is perfectly smooth. If the slope were due to rebuilding after some lapse of time, one would expect the fact to be indicated by some criteria such as different arrangement, color, or measurements of bricks. The success of this construction was shown by its exceptional state of preservation. Having withstood adverse climatic conditions for about 2,500 years (during part of that time protected, of course, by the accumulated *hüyük* deposit), Section F I A stood about 5 meters high when uncovered. Such walls as 1*a* and 2*a*, abutting the inner front, helped to support the fortress wall (cf. Fig. 17A).

To judge by the construction of the wall, the height of *d* could never have been much greater than it was when we uncovered it. At the top of the wall as preserved a row of bricks (.36 × .36 × .10) extended along the outer edge and formed a shelf .10 higher than the rest of the wall top. They seemed to be less inclined than the rest of the wall front. We assumed tentatively that this row of bricks was the lowermost course of the parapet(?), which may have been about 1 meter high, with crenelation above. The roofs of the houses originally constructed behind the wall were apparently not much below the wall top. During later occupations the roofs must have been flush with the wall top, and they may finally have extended above its level.

SECTION F I B.—This small tower(?) or rectangular offset was 4 meters long and 2.50 broad. It protected a slight angle formed by the wall, which turned somewhat more toward the west at this point (cf. Fig. 17A). The stone foundation (*a'*) and the protecting wall (*b'*) of Section F I B agreed in general with the corresponding features of Section F I A (cf. Fig. 19). Some stones of the foundation were as large as .60 × .30. The lowermost stones of the protecting wall reached below the top of the foundation.

At the top of the outer face of *c'* was a ledge formed by one course of bricks protruding .20. The upper part, *d'*, here less inclined, receded .10 from the edge of the ledge. The space between the ledge and the top of the stone protecting wall below varied from .25 to .40 and was filled with ordinary dirt. It would be reasonable to assume that the ledge had rested on a beam connected with the ends of crossties, but there were no traces of post holes to verify this assumption. Though the top of the protecting wall may have extended as high as the ledge, only a few scattered stones were found in front of the wall, certainly not enough to justify the assumption that a layer .30-.40 high had crumbled off. On the other hand, the stones may have been carried away by later settlers. The northwest face of Section F I B was vertical from top to bottom. The northerly corner was entirely inclosed by the protecting wall, in contrast to the southeast corner (cf. p. 23).

The top of Section F I B as preserved sloped upward for a distance of 2.20 toward the main wall. The outer edge of the main wall, .40 higher than the southeast end of F I B, sloped downward until it was level with the northwest end of the tower(?). Of the inner wall face of Section F I B little can be said, because our excavation was not continued below the level of the second or third occupation.

SECTION F I C.—After the slight change of direction at Section F I B, the wall continued for 17 meters in a straight curtain until it abutted Tower F II. The construction of Section F I C was the same as that of Section F I A. The height of the wall as preserved decreased steadily toward the northwest, and at the northwest end all of the inclined upper part had disappeared. East of Sections 5 and 7 the front had been washed away, leaving a slope considerably more inclined than that of Section F I A. Section F I C did not interlock with the wall of Tower F II, but the wall face where they met was well guarded by the stone protecting walls. The face of the *kerpich* wall of Section F I C at this point was set back about .30 from the front of the stone foundation, and the inner stones of the protecting wall rested on the protruding foundation (Fig. 22).

SECTION F II (SECTION 10; cf. Fig. 17A).—This section was a tower protecting the northeast corner of the fortress, where the wall turned west. Its exceptionally strong foundations suggest that the tower rose above the tops of the abutting curtain walls (cf. Fig. 18). The view from Mound A was, of course, considerably wider, but from the top of Tower F II even individual persons could have been seen miles away to the north and east.

Section F II was oriented somewhat more toward the north than was Section F I C. Section F I C abutted, but did not interlock with, the south wall of the tower. The east wall of the tower, 6.50 long, protruded beyond the outer edge of Section F I C. The north wall showed especially good construction in the outer face of its foundation, where well selected large slabs with one or two courses of small stones above them had been used. Near the northeast corner there was a heavy, almost rectangular block $.60 \times .50 \times .35$. The west wall, 7.50 long, was wider than Wall 9a to the south and extended north as well as south of Section F III A. The foundation stones and some bricks of Section F III A interlocked with those of the tower. However, the protecting walls left part of the *kerpich* exposed at this corner. The protruding corners and the strength of the west and south walls show that the tower as a unit was part of the fortification system.

The northeast corner of the tower had suffered so much from its low position on the mound slope that the protecting wall and even the outer rows of the stone foundation had crumbled downhill. At the inner face the foundation stood at its original height (.55), bearing .15 of *kerpich* (Fig. 23). The heights of the other corners, including stone foundations averaging .50 high, were as follows: Corner 10a-10b, 1.50; Corner 10a-9b, 2.20; and Corner 9b-10c, 2.20.

A doorway in Wall 9b, .65 west of Wall 10c, connected Section 9 with the tower. The doorway was filled with soft dirt, large lumps of *kerpich*, and some rocks near the top and center of the opening. No traces of woodwork could be found. The sill apparently consisted of *kerpich* .25 thick.

During our first examination of the walls, all the dark spots were probed. They were found to be tunnels made by small rodents, with the exception of one hole penetrating Wall 10a (Fig. 24). Here the black spot seemed at first to be a window, almost a loophole, of semi-oval form, apparently cut out after the wall had been completed. The lintel was formed by a slab which did not reach to the inner face of the wall. The sill was a *kerpich* ledge broader than the opening; it measured about .80, whereas the "window" was .40 wide and .40 high. At the inner edge the sill was .15 below the bottom of the "window" and .90 above the top of the stone foundation of the wall. Close examination showed, however, that the dark soil continued below the *kerpich* ledge and that originally, at least, a doorway was situated here.

The top of Wall 10b was overhanging toward the inside of Tower F II (Section 10). The *kerpich* courses of Wall 10a were oozing out midway of its height as preserved. In Section 10 we dug to the bases of the walls. The floor, as indicated by the level of a fireplace in the southeast corner, was about .10-.20 above the tops of the foundations. The fireplace consisted

simply of two fire-blackened stones .60 apart, the space between being filled with a layer of ashes, blackened soil, and *kerpich* burned yellowish orange. Wall 9b had patches of whitewash blackened by soot from the fireplace.

SECTION F III.—Section F III A extended slightly south of west for a distance of 12-14 meters. At its west end it formed approximately a right angle with Section F III B, which extended north 1.50 (measured at the outer face) and abutted Section F IV A. The preserved

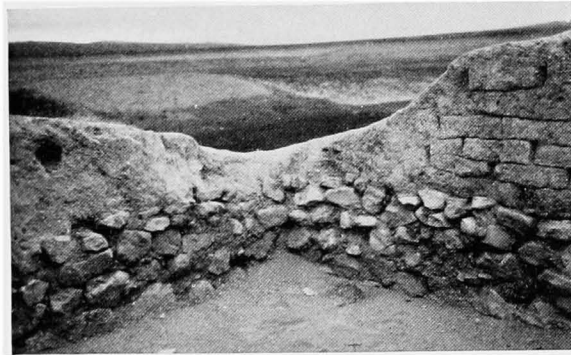


FIG. 23.—NORTH CORNER OF TOWER F II OF THE
FORTRESS ON MOUND D

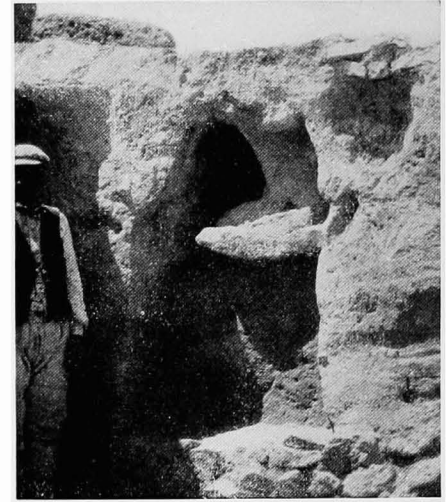


FIG. 24.—DOORWAY OR WINDOW IN
WALL 10a OF THE FORTRESS ON MOUND D



FIG. 25.—SECTION F IV C OF THE FOR-
TRESS WALL ON MOUND D, FROM NORTH-
EAST

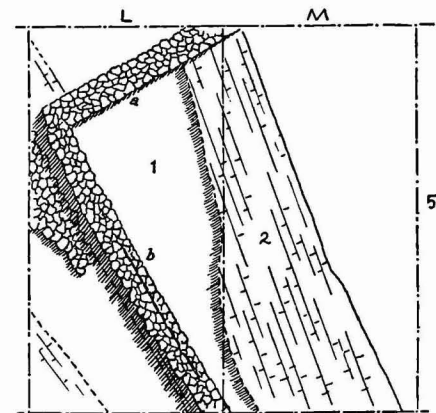


FIG. 26.—PLAN OF LEVEL 1 IN L-M 5.
SCALE, 1:200

part of Section F III was built in the same manner as Sections F I A and F I C. The wall was not preserved to a height where the beginning of the upper inclined part might be expected. At the west end only ten to twelve courses of bricks were left on the foundation, which at this point was .35-.40 high.

SECTION F IV.—The flat-topped foundations of Section F IV had the normal height of .35-.50. Their faces were built of rather large stones with flat surfaces, and smaller stones filled the centers. The *kerpich* wall which once rested on these foundations had almost entirely disappeared. A few courses were preserved on the southern part of Section F IV B and a patch on F IV C.

Section F IV A was nearly 6 meters long and may have been longer originally, for its northeast end had crumbled. The outer front of Section F IV B, and even the top of the foundation, had crumbled; but certainly F IV B had protruded beyond F IV A and F IV C. In the southeast wall there was an opening .55 high, flush with the paved floor south of it. The floor of this opening was of *kerpich*. There were no traces of a corresponding opening in the northwest wall. It was difficult to determine the purpose of Section F IV B. Would not the reasonable site for a tower have been farther northeast, at the junction of Sections F IV A and F III B? The construction of this part of the fortress, including Sections F III B, F IV A, and F IV B, reminds one of that part of the town wall³² uncovered in Plots XXIV and XXV of 1927 (cf. Fig. 186). The fragmentary northeast end of Section F IV A may correspond to the inclined end of the outer town wall,³³ and F IV B to the narrow gateway connecting the inner and outer walls.³⁴ Section F IV C (Fig. 25) broke off, after 12.50, in the depression between Mounds C and D. There is hardly a doubt that the wall continued on Mound C and joined the defense wall on Mound B.

DESCRIPTION OF *KERPICH* BRICKS IN THE FORTRESS WALL

Wall	Color	Dimensions at Wall Face	Joints	Remarks
In L-M 5	Yellowish brown, gray-brown; some bricks with white limestone particles	.105-.115 × .345-.38	Mostly tight, .005; staggered	In two cases the third dimension was found: .38 and .40
In Section 9	Yellowish brown	.08-.11 × .34-.385	.005-.012; staggered	
9b	Yellowish brown, gray-brown	.08-.10 × .36-.375	.005-.03; staggered	
10c	Yellowish brown	.08-.105 × .35-.38	Average, .005 (.004-.03); staggered	
10b	Yellowish brown	.085-.105 × .36-.40	Staggered	
10a	Yellowish brown, light gray; one dark gray course	.075-.12 × .36-.37	Staggered but close; often nearly superimposed	

THE BUILDING COMPLEX ON MOUND D

PLOTS L-M 5, LEVEL 1.—In Level 1 of L-M 5 we uncovered a section of a stone inclosure (Section 1 in Fig. 26) a little below the mound surface. There were two well preserved walls, built of unusually small unwrought stones, irregularly set, the interstices filled with ordinary mud. Large stones were used for the lowest course. Wall 1a had an average height of 1.30. Wall 1b consisted of a foundation .75 in height, carrying a thinner wall .60 high. There was no trace of the northeast wall, which had apparently crumbled over the edge. The southeast wall was hidden under unexcavated territory. Some stones of unknown purpose lay along the northern part of Wall 1b. Neither doors nor windows were visible. The top of the *kerpich* mass No. 2, covering the fortress wall (cf. p. 20), was level with the top of the foundation of Wall 1b.

Some Period IV sherds were found in Level 1, and also fragments of Period V pottery and some chips of Period VI (presumably Roman) ware. The remains of Level 1 most probably belong to Stratum V, possibly to the beginning of Stratum VI. Had they been later, a larger number of Alişar VI objects would have been found.

³² *OIP* VI 180 ff. and 189 ff.³³ *Ibid.* p. 184.³⁴ *Ibid.* pp. 183 f.

PLOTS L-M 5, LEVEL 2.—Parts of Level 2 walls had been used as foundations for Walls 1a and 1b of Level 1. Apparently the Level 2 rooms had been solidly packed with refuse before the Level 1 occupation began. Such walls as may still have protruded were leveled by the later comers.

The complex uncovered in Level 2 consisted of a well defined room (Fig. 27), with neighboring inclosures excavated only in part. The average height of the walls was 1.50, which was also the level difference between Levels 1 and 2. Some wall sections were lower, however, having crumbled off; other parts were overhanging. All the walls were built of *kerpich*, but no stone foundations were visible at this level. The northwest wall had tight, staggered joints.



FIG. 27.—LEVEL 2 IN L-M 5, FROM SOUTHWEST

The northwest part of the room was covered with rather small paving stones, less neatly set than many other pavements uncovered. The stones had been blackened by fire, perhaps accidentally. The fireplace apparently was in the south corner, where a row of three stones bordered a patch covered with typical fire-pot earthenware.

Even when we had cleared Level 2 we had not succeeded in defining accurately the inner face of the fortress wall. To avoid blunders we decided to dig down and to clear the inner face from below, where the brick contours are nearly always more distinct than those in the top layers. The outer face of the inclined part of the fortress wall was clear by the time the excavation had progressed to the second level.

PLOTS L-M 5, LEVELS 3a-3b.—In Sections 1 and 2 (Fig. 17A) we penetrated to the bottom level of this complex, Level 3b, which had been occupied by the builders of the fortress wall. In Section 3 we stopped at the bottom of Level 3a. It became clear that some of the Level 2

walls belonged originally to Level 3a and had been re-used during the later occupation. Level 3a, in turn, had re-used walls of Level 3b (Fig. 28).

Sections 1 and 2 had originally formed one inclosure, which probably extended toward the southwest, since no trace of an older wall was preserved below Wall 1b of Level 3a. That Walls 1b and 1c were added on Level 3a was indicated by a considerable difference between their foundation levels and those of Walls 1a, 2a, and the fortress wall (Figs. 28 and 29). In

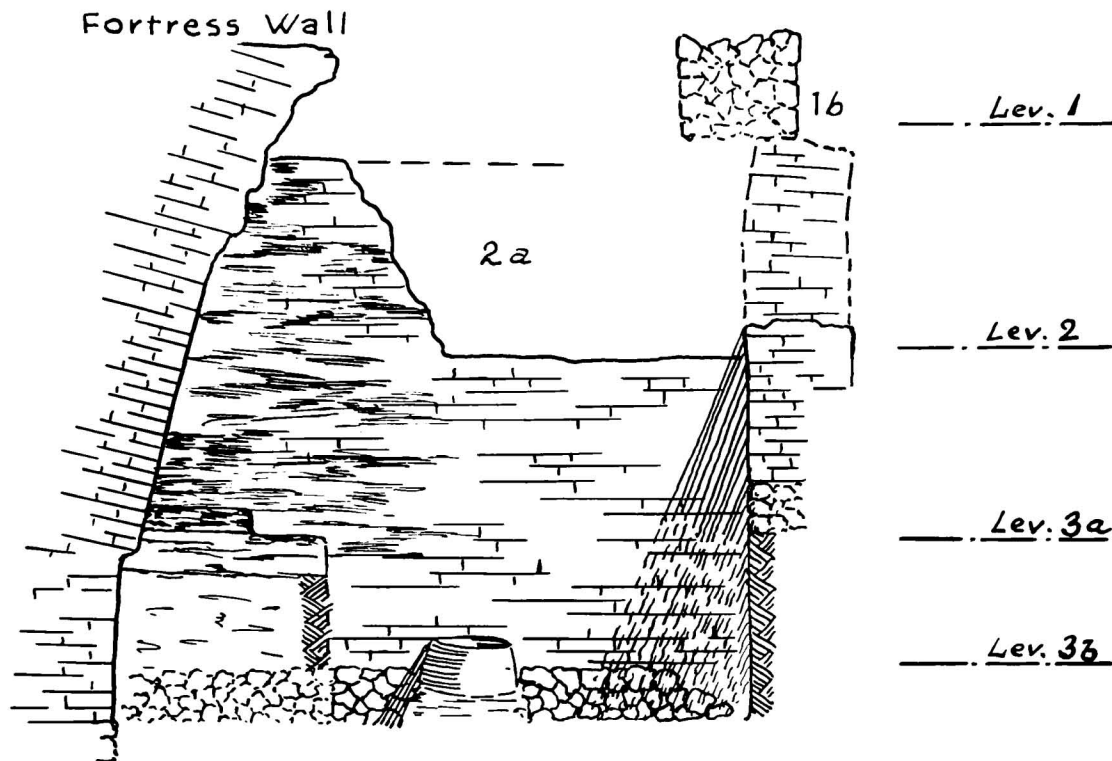


FIG. 28.—DIAGRAM OF LEVELS 1, 2, 3a, AND 3b IN L-M 5. SCALE, 1:50

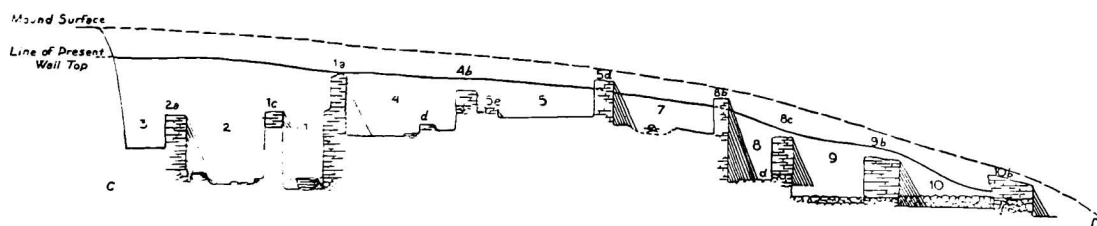


FIG. 29.—CROSS-SECTION CD (CF. FIG. 17A) OF THE FORTRESS ON MOUND D. SCALE, 1:300

Section 2 a gap in the *kerpich* of the southwest wall suggested a doorway, the sill of which was about .40 above the stone foundation.

The difference between Levels 3a and 3b was strikingly indicated by the hearths of the two levels in Section 2. The fireplace of Level 3a was a crude *kerpich* rectangle, burned black and ocher. Due to its use Wall 2a and the fortress wall were blackened from the Level 3a floor to a height of about .60 below the upper edge of the fortress wall. A fire pot of Level 3b was .80 below the Level 3a fireplace. The base of the Level 3b fire pot was apparently below its floor level, for the floor stratification at Wall 2a was flush with the rim. The pot was made of the usual crude brittle brown earthenware. Some large potsherds which had been laid around it

formed a kind of shell to the pot. One of these sherds was a Period V fragment with brown-red bands on a gray-brown slip.

Some of the walls in Sections 1, 2, and 3 were preserved to a considerable height. The fortress wall was 4.60 high, not including the unexcavated part of the stone foundation. At this height the wall hung over 1.35 toward the inside (cf. Fig. 19). Wall 2*a* was 4 meters high at its highest point. A layer of mud took the place of the sixth course from the bottom (cf. Wall 4*a* of Level 2). The height of Wall 1*a* was 3.30 (stone foundation .60 high). With the superimposed wall of Level 2 it measured 4.80. No change in the size and arrangement of the bricks in the two walls was visible, but there was a setback on the southern face of the wall (cf. Fig. 29) and a corresponding difference in color. The Level 2 wall was composed almost entirely of yellowish brown bricks; the lower wall was of darker *kerpich*. The fortress wall, Wall 2*a*, and Wall 1*a* were the highest we have uncovered at Alishar. Walls 1*c* and 1*b* of Level 3*a* were only 1.20 and 1.40 high. Wall 1*c* rested simply on the refuse filling of the Level 3*b* occupation, its base being flush with the bottom of the stone foundation of Wall 1*b*. There was a mud layer about .04 thick between the fifth and sixth *kerpich* courses. Whitewash .002 thick was noticed on Wall 1*a* and on the fortress wall.

Alishar V pottery was associated with the base level of the fortress. A well preserved trough with zigzag patterns in relief (No. b 335, pp. 46-47) was uncovered on the floor of Section 1. The rim of the trough was a little below the top of a possibly older wall protruding somewhat above the Level 3*b* floor; its bottom was flush with the base of Wall 1*a*. The situation was paralleled in F 14 on Mound B, where fragments of a similar though cruder trough were associated with the bottom level (3*c*).

SECTIONS 4-10.—Sections 4-10 of the fortress complex are described consecutively without separate level descriptions, since structures entered on the map have been left *in situ*, covering parts of the lower levels. It was not our aim to uncover the entire complex of Stratum V during this season. We wanted to trace the course of the important fortress wall and to excavate some inclosures associated with its base in order to determine its period of construction and type of building. For this reason, the excavation stopped in Sections 4-7 at the bottom of Level 2 or a little below. In Sections 8-10 the excavation was carried down to the floor of the original fortress level (3*b*).

SECTION 4.—In Section 4 the excavation stopped .90 below the base of Wall 4*a* (Fig. 30). In contrast to the tight, staggered joints of such walls as 1*a*, the joints of Wall 4*a* were not staggered. Solid layers of mud, usually as thick as the *kerpich* layers, but some only .03 thick, alternated with the *kerpich* courses. The mud layers were of dark gray refuse which had been mixed with water and chopped straw. Apparently it had been taken from the very spot where the wall was to be built. The mud layers gave to the wall a stability which was achieved elsewhere by staggered joints. That part of Wall 1*a* belonging to the same level as Wall 4*a* (Level 2) apparently stopped .20 below the base of Wall 4*a*, as indicated by a difference in color in the *kerpich*. The low stone foundation of Wall 4*a* ran across Wall 4*d* (of Level 3*a* or 3*b* origin). Only the tops of Walls 4*d* and 4*e*, which abutted, were visible above the excavation bottom. Wall 4*c* may have adjoined the inner face of the fortress wall. Its western face had crumbled off. Wall 4*b* had a low stone foundation, the top of which was flush with the base of Wall 4*c*. Only the two lowermost courses of bricks could be distinguished. Although the few joints traceable were hardly staggered, there was no mud layer between the brick courses. The inner edge of the fortress wall was poorly defined in Section 4, though its approximate course was indicated by the edges in Sections 1 and 5.

SECTION 5.—Structural remains corresponding to those in Level 1 of L-M 5 were Walls 5*a*, 5*b*, and 5*c* (Figs. 17*A* and 31). Walls 5*a* and 5*c* were rather well built stone walls with straight

fronts, the unwrought stones ranging from fist size to about .40. Between the larger stones of the faces, smaller ones had been used to fill in. It is possible that both walls were high foundations (averaging .90) of *kerpich* walls. Their tops were hardly covered by the surface soil, and the *kerpich* may have crumbled off. Wall 5b was only .30 high. It was covered with a thin layer (about .10) of *kerpich* dirt, which looked more like a floor layer than like the remains of a wall.

Wall 5d (cf. Fig. 29) was attributed to Level 2, though the bottom of the excavation did not reach its base. If it had been built previously, it was certainly re-used during the Level 2 occupation. Only a part of the wall showed clearly marked bricks with well staggered joints, such as those in Wall 1a of Level 2. Wall 5e, of a lower level, reached .45 above the floor. The inner edge of the fortress wall was found to be overhanging here at least as much as it was in L-M 5 (cf. p. 30). Skeleton b X4 was uncovered about 1.50 below the overhanging edge (cf. p. 88). We stopped the excavation 1.45 below the top of Wall 5d and 1.60 below the top of the defense wall.

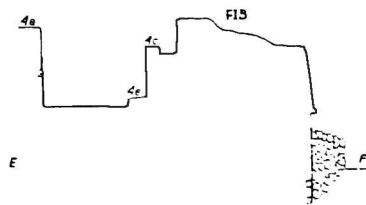


FIG. 30.—CROSS-SECTION EF (CF. FIG. 17A) OF THE FORTRESS ON MOUND D. SCALE, 1:200

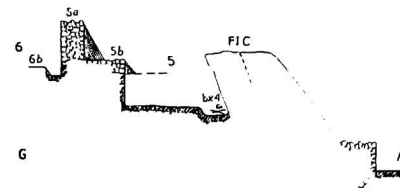


FIG. 31.—CROSS-SECTION GH (CF. FIG. 17A) OF THE FORTRESS ON MOUND D. SCALE, 1:200

SECTION 6.—A low *kerpich* wall, 6a, abutting the lower courses of Wall 5a, was found west of Section 5. The entire wall was only .40 high; the foundation, .25. Wall 6a extended across a *kerpich* ledge, 6b (Fig. 31), which was apparently the top of an older wall.

SECTION 7.—The floor of Level 2 was defined by the position of fire-pot remains in the east corner. The pot, apparently oval in form, was of the usual brittle brown earthenware, blackened by use. A layer of charcoal and ashes .20 thick lay below the potsherds. The excavation bottom was .70 lower. The fire pot was situated .70 farther toward the east than the edge of the fortress wall in Section 5. Apparently in Section 7 the fortress wall had been straightened by cutting during the Level 2 occupation. Wall 5c was continued in Section 7 by an all-*kerpich* wall, 7a, the base of which was flush with that of the stone wall. Wall 8b, re-used during the Level 2 occupation, extended considerably lower.

Somewhat west of the room center and oriented in the same direction as Wall 7a and the fortress wall there was another burial, b X5, about .40 below the floor level.

SECTIONS 8-10.—We believe that in these sections we penetrated to the floor of the fortress complex, corresponding to Level 3b in L-M 5. If this assumption is correct, the inclosures were terraced following the slope of the mound. It is possible that Section 8 should be attributed to Level 3a, for Pavement 8d and the stone foundation of Wall 8c are both considerably above the pavement of Section 9 (cf. Fig. 29). Pavement 8d was rather well made of medium-sized slabs. At this lower level (3a or 3b) Section 8 was smaller than it is shown in Figure 17A, the southwest wall being on a line with Walls 7a and 9a. In the Level 2 occupation Wall 8a formed the southwest border. Wall 8b, 3.35 high, showed two strata of *kerpich* which differed in color, like those of Wall 1a. The *kerpich* bricks in the lower part of Wall 8b formed an almost solid mass and were darker in color than those in the upper part. An opening in the eastern part of the upper and lighter *kerpich* (the Level 2 wall) may have been a doorway. Flush with

the bottom of the lighter *kerpich* (at the floor of Level 2) we found an interesting vessel (No. b 415) containing fragments of a Period V banded jar (No. b 416). The base of Wall 8a was .20 higher than the Level 2 part of Wall 8b, apparently being terraced up the slope. It was 1.30 above Pavement 8d. Wall 8a, made entirely of *kerpich*, was of the same type of construction as Wall 4a, though some mud layers were interrupted by individual bricks. The joints of the brick courses were not staggered. Wall 8c was built on a stone foundation, about .10 of which were visible above Pavement 8d. The ninth row above the foundation was a solid layer of *kerpich* mud. Darker-colored *kerpich* in the eastern part of this wall suggested that a doorway may have connected the Level 2 Rooms 8 and 9. The poor preservation, perhaps poor construction, of the wall made this uncertain. The fortress wall overhung in Section 8 as in the sections previously described. Black stains on Wall 8c and on the inner face of the fortress wall showed that a fireplace had been located in the north corner of Section 8.

The pavement in Section 9 probably belonged to Level 3b (cf. p. 34). It was constructed of rather small irregular slabs, tightly fitted. Its southeast edge was straight and about .30 from an old wall under Wall 8c. This stone ledge, parallel to Wall 8c and abutting the foundation of the fortress wall, appeared to be the remainder of a wall which had been replaced by 8c. The relations of Walls 8c and 9a to the paved floor were somewhat doubtful. The stone foundations of the two walls abutted, their bases being about .65 above the pavement and .50 above the tops of the foundations of the fortress wall and of Wall 9b. The situation suggested that both walls were built during an occupation intermediate between the original fortress level and Level 2, that is, corresponding to Level 3a in L-M 5. The well marked recess in Wall 9a (Fig. 17A) was not a doorway, as we had originally assumed, but possibly indicated that the wall at this point had been added later. Here the stone foundation was only one layer high, in contrast to two or three layers in the rest of the walls. The corner at the offset was apparently constructed of alternating stretchers and headers. Were it not for differences in the widths of the joints, the bricks would be perfectly staggered. Neither here nor in the other walls described did we find traces of woodwork, such as holes for ties. Holes or depressions in the walls had been dug by rodents. Like Section 8, Section 9 had been enlarged during a later occupation. In Level 2 the southwest border of the room was Wall 11b, a continuation of Wall 8a (Fig. 17A and B). The fortress wall in Section 9 was low. Its inner face was perpendicular instead of overhanging as in the sections previously described.

Section 10 is the same as Tower F II and has been described in connection with the fortress wall on pages 25-26.

SECTIONS 11-13.—The course of the fortress wall was followed from its turning-point at Section 10 as far west as H 3. South of the fortress wall the ground had a considerable slope upward, where more recent structures had been built on top of the remains associated with the fortress. Sections 11-13 are the upper levels of Sections F III and IV of the fortress (Fig. 17B).

SECTION 11.—Figure 32 shows the relations of Levels 1 and 2 and the fortress wall in Section 11. Level 1 was represented by Walls 11a and 11d, by a patch of pavement with Wall 11a, and by a grinding-bin, 11c. Walls 11a and 11d, reaching to the mound surface, had suffered badly. Some bricks used in the foundation indicated the course of Wall 11d. The *kerpich* of Wall 11a started flush with the top of Wall 11b of Level 2. The grinding-bin, 11c, found a little above the few pavement slabs north of Wall 11a, adjoined the foundation of Wall 11a. It consisted of an inclined grinding stone with stones on both sides forming a semicircle.

The difference in levels between Wall 11a of Level 1 and Wall 11b of Level 2 was emphasized by a difference in construction. Wall 11a had well marked bricks with staggered joints. Wall 11b had the alternating mud and brick layers which seem to be typical of Level 2 (cf. Wall 4a). It is quite possible, nevertheless, that Wall 11b and its continuation toward the southeast,

Wall 11a, were re-used during the Level 1 occupation. Wall 11f in Level 2 was built on top of an earlier *kerpich* wall (14a, Fig. 17A), its foundation being about .50 below that of Wall 11b. Perching on the western edge of the underlying wall, Wall 11f hung over toward the west to such an extent that its northern end broke down after the dirt supporting it had been removed. The brick measurements of Wall 11f suggest that the upper part of the wall was added at a later date. Bricks of the courses up to .50 above the foundation measured .32-.33 in breadth, whereas those above were .37-.39 broad. The joints were well staggered and no mud layers were present, in contrast to Wall 11b. Remains of a doorway were found .80 above the top of the foundation of Wall 11f. They consisted of two courses of stones .35 high, apparently elevated above the floor level of the room. The sill was 1 meter long and had a flat slab in the center flanked by rougher stones. Wall 11c was poorly preserved, and its brick contours were hardly visible. Although it abutted Wall 11f, it was clear that the level of its foundation was nearer to that of Wall 11a than to that of Wall 11f. Two connected wall fragments, 11g, occurred south of Pavement 11h. The fortress wall, now .55 below the pavement, was, of course, considerably higher during the Level 2 occupation, when Pavement 11h was laid.

SECTION 12.—The relation of remains more recent than the original fortress level in Section 12 to the recent levels in Section 11 is not definitely known. Wall 12a (Fig. 17B) may have been

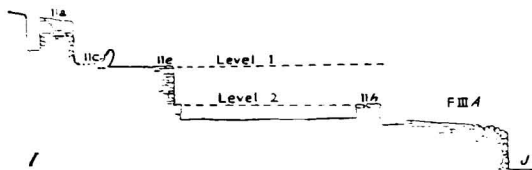


FIG. 32.—CROSS-SECTION IJ (CF. FIG. 17B) OF THE
FORTRESS ON MOUND D. SCALE, 1:200

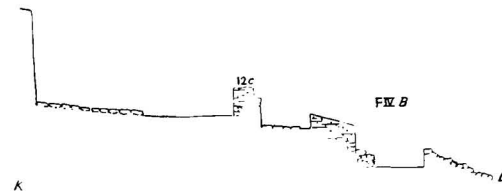


FIG. 33.—CROSS-SECTION KL (CF. FIG. 17A) OF
THE FORTRESS ON MOUND D. SCALE, 1:200

of Level 1 origin. Walls 12b, 12c (Fig. 17A), and 12d (Fig. 17B) appeared to belong to Level 2. Wall 12c (Fig. 33) was only about .40 at an average above an older pavement. Wall 12d was built on top of an earlier wall. Walls 12b and 12d, much higher above the fortress level at their southeast ends than at the northwest, illustrated the difference between the horizontal plane of the fortress level and the inclined planes of the later levels. The walls of Section 12 were weak. Some *kerpich* courses were preserved on foundations which might be called rubble, many stones being about the size of a fist. Walls 12b and 12a, however, had good-sized foundation stones. Wall 12a was supported by one course of stones.

SECTION 13.—The structural remains of Section 13 (Fig. 17A and B) were terraced from the southern plot border to the fortress wall. Highest was a well laid stone pavement of Level 1 origin, 13a, which stood .50 above the top of Wall 13b. Wall 13b, which stood 1.10 high (including a foundation of .35) above Pavement 13c, was an ordinary *kerpich* wall on a rather irregular stone foundation. Walls 13d, 13e, and 13f were contemporaneous and seemed to belong to the second occupation of the fortress. The base of Wall 13f was flush with the top of the foundation of the fortress wall. Later excavation showed that Wall 13e was above Wall 21b of the first occupation and that Wall 13d was superimposed on the southern end of 21b. Walls 13e and 13f were low walls, built of relatively large border stones with smaller stones for filling; Wall 13e was only one layer high. Wall 13d was .80 high; its foundation of upright slabs, averaging .50 high, carried two border rows of stones with ordinary mud between them. It may have supported a *kerpich* wall originally.

SECTIONS 14-16.—The rooms in the lower levels of the fortress in F III-IV are Sections 14-21 (Fig. 17A). Walls 14a and 16a (Fig. 34) were built during the second building phase

within the fortress corresponding to Level 3a in L. M 5. They had weak stone foundations one or two layers high, the bases of which were flush with the lowest *kerpich* courses of the fortress wall. The *kerpich* of Walls 14a and 16a was preserved to a maximum height of 1.20. Whereas the *kerpich* of Wall 14a was not clearly marked, Wall 16a showed plainly the same construction as Wall 4a—courses of *kerpich* bricks alternating with solid mud layers.

Wall 15a and Pavement 15b belonged to the first occupation of the fortress. No traces of *kerpich* were seen on the stone foundation of Wall 15a. Pavement 15b seemed to be continued by Pavement 16b and by the pavement in Section 9 (cf. p. 32). Wall 14a was superimposed on Pavement 16b.

SECTION 17.—Here the excavation stopped at Pavement 17a, which apparently represented the floor level of the second occupation (corresponding to Level 3a). A millstone of elaborate type, characteristic of Period V, lay on the pavement with its grinding surface turned upward.

SECTION 18.—A triangular chamber was formed by Walls 18a, 18b (which continued toward the south), and the fortress wall. The base of the foundation of Wall 18a was a little above the top of the foundation of Wall 18b (Fig. 34). Another millstone was found in this chamber.

SECTION 19.—West of Section 18 there were two direct superpositions: Wall 18b rested partly on Foundation 19a, which in its turn was superimposed on Wall 19b. These three walls differed slightly in orientation. A very broad stone foundation, 19c, apparently the remainder

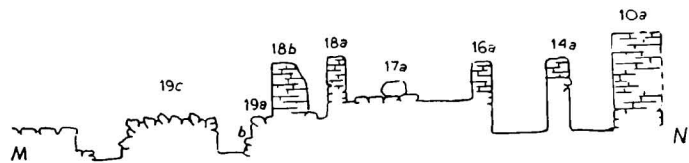


FIG. 34.—CROSS-SECTION MN (CF. FIG. 17A) OF THE FORTRESS ON MOUND D. SCALE, 1:200

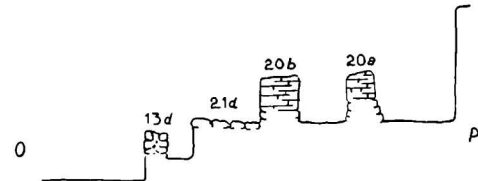


FIG. 35.—CROSS-SECTION OP (CF. FIG. 17A) OF THE FORTRESS ON MOUND D. SCALE, 1:200

of a fortification, was flush with Wall 19a. It could hardly have formed part of the original fortress complex, since its base was .30 above the top of the foundation of the fortress wall where the two met. The cross-section of dark gray soil on top of Wall 19c, as seen at the plot wall, showed no traces of crumbled *kerpich*. The wall may have been leveled during a later occupation. Two bottle-shaped storage or refuse pits were found. Pit 19d was 1.60 deep, .70 wide at the top, and 1.60 wide at the bottom. Pit 19e was 1 meter deep, .80 wide at the top, and 1.20 wide at the bottom.

SECTIONS 20 AND 21.—Walls 21a and 21b no doubt belonged to the first occupation of the fortress. Their foundations appeared to have been particularly high; that of Wall 21b measured .95. Pit 21c, which expanded slightly at the bottom, extended to a depth of .85 below the base of Wall 21a.

Pavement 21d and the walls of Section 20 (Fig. 35) were contemporaneous and probably more recent than the original occupation of the fortress. Their bases were level with the preserved tops of Walls 21a and 21b; and Wall 13d, which bordered the room containing Pavement 21d, was superimposed on the southern part of Wall 21b. Pavement 21d was well laid; its western part was raised .10 above the rest. The walls of Section 20 were well preserved.

THE STRUCTURES ON MOUND C

On Mound C we did not strike the fortress wall. Either it has crumbled downhill or, more probably, it is situated farther down the slope. Above Stratum V in F-G 8 there was only a sterile mound shell about .30 thick. A few *terra sigillata* sherds and one glazed Byzantine

STRATUM V

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DESCRIPTION OF *KERPICH* BRICKS IN THE BUILDING COMPLEX

Wall	Color	Dimensions at Wall Face	Joints	Remarks
1a (Level 2)	Light yellowish brown and gray (one layer)	.095 × .365	.005-.01; staggered	
1a (Level 3)	Light gray, gray, light brown with limestone particles; some light red-brown	.08-.105 × .365-.39	Tight; staggered	
1b	Yellowish brown, grayish white	.105-.11 × .36-.395	Tight; staggered	Brick marks vague
1c	Yellowish brown	.08-.10 × .35-.40	Loose: .012, .025, .015	
2a	Yellowish brown, gray-brown, gray	.095-.11 × .36-.38	.005-.01; staggered	Height in one case was .07
4a	Light yellowish brown; dark gray mud	.09-.10 × .35-.38	.004-.015	Length at the wall face was mostly .36. The third dimension, where noticed, was .38-.38+(?)
4b	Yellowish brown	.08-.115 × .355-.37	Average, .01; hardly staggered	
5d . . . . .		.08-.11 × .34-.37	Average, .01; staggered	
7a	Yellowish brown	.095-.10 × .32-.375	.008-.015	
8a	Yellowish brown brick courses alternating with gray mud courses	.09-.11 × .35-.365	.005-.015	
8b	Yellowish brown, light gray, entire courses of light gray bricks between courses of yellowish brown and light gray	.07-.09 × .34-.40	.001; irregularly staggered	Height in one case was .05
8c	Yellowish brown, gray-brown, with many white limestone particles			The dimensions were uncertain
9a	Yellowish brown, gray-brown; some bricks with limestone particles	.075-.105 × .33-.38	.005, .015, .05	
11a	Light yellowish brown	.08-.10 × .34-.37	Average, .01; staggered; clearly marked	
11e	Yellowish brown, gray-brown		Tight	No measurements could be obtained
11f	Yellowish brown	.085-.095 × .32-.39	Average, .01; staggered	
12a	Light yellowish brown with white limestone particles	.075-.09 × .31-.36	Average, .01; staggered	The third dimensions, where obtainable, were .34, .35, .375
12c	Light yellowish brown with many small white and yellowish particles	.09-.10 × .36-.375		
13b	Yellowish brown, gray, light gray	.08-.10 × .35-.37	.005-.01; tight in places; staggered	

fragment were mixed with the Stratum V remains. It is a striking fact that the buildings of the three levels uncovered in F-G 8 are oriented alike in a general northwest-southeast direction, that is, along a line connecting the top of Mound A with the center of Mound C (cf. Fig. 1).

LEVEL 1.—In Level 1 (cf. p. 5) we uncovered sections of several inclosures separated by stone walls averaging .60 in thickness (Fig. 36). One of these inclosures was subdivided into smaller rooms, Sections 7-9. The walls of these subdivisions evidently belonged to a period somewhat later than that during which the rest of the complex was constructed, since their foundations were some .80 higher than the bases of the other walls (Fig. 37). The latrine(?) stones in Section 9 and the refuse or storage pit in Section 8 belonged to the level of the principal (earlier) walls.

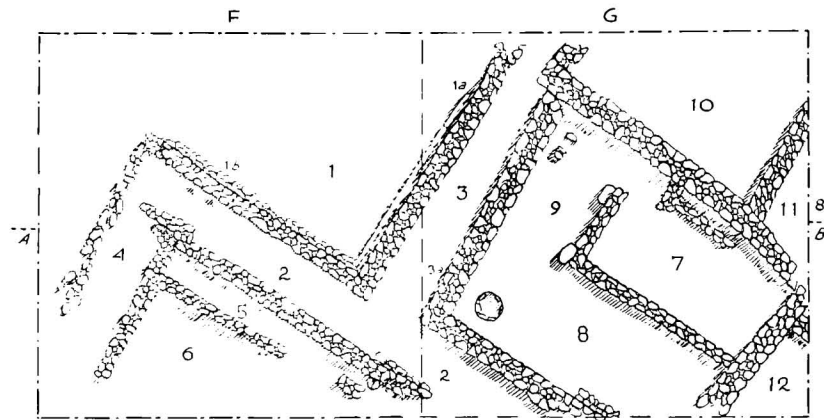


FIG. 36.—PLAN OF LEVEL 1 IN F-G 8 ON MOUND C. SCALE, 1:200

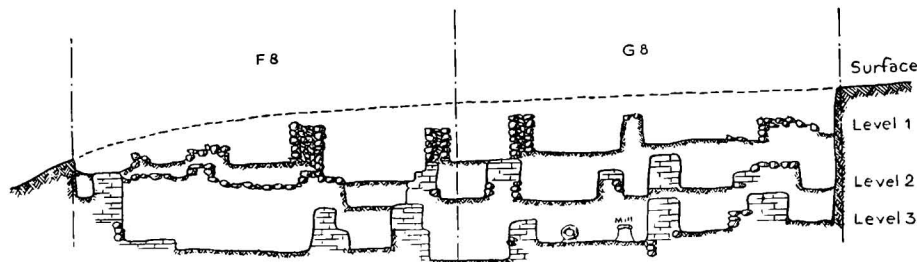


FIG. 37.—CROSS-SECTION OF LEVELS 1-3 IN F-G 8 ON MOUND C. SCALE, 1:200

Sections 2-4 seemed to be passageways. It was difficult to determine the nature of Section 5. Though it was almost too narrow to be a passageway, the walls on either side had finished stone facings. A doorway seemed to connect Sections 4 and 5.

The stone wall No. 1a was built upon a *kerpich* wall of Level 2 which had many irregularities. Because of them, the base of the Level 1 wall varied considerably in level. At the north end the *kerpich* rose about .85 above its general top line. Perhaps at this spot a doorway .65 wide through the stone wall had later been filled up with *kerpich*. It is possible also that the older *kerpich* wall was higher here, and that this section had remained in place when the stone wall was constructed. The exposed sides of the stones of Wall 1a (of Level 1) graded from larger (about .20-.35) at the bottom to smaller (about .10-.15) at the top. Both faces of the wall were smooth, and the core was of smaller stones.

Wall 1b was less well preserved. At its west end .20-.30 of *kerpich* remained. There was no gradation in the size of stones from top to bottom, and the faces were not as well finished as

those of Wall 1a. The eastern half of the wall was .60 broad and filled with smaller stones. The western part converged to about .40 at the top.

Wall 3a was as well built as Wall 1a on the other side of Passage 3. It was approximately .65 thick. The stones at the bottom were about .30-.50 long and .20 high; those above the middle were about .15 long and .10 high. The two uppermost courses were built of stones about .20-.25 long and .15 high, separated in places by small stones. The stone courses were regular and the wall faces very smooth. The center of the wall was filled with smaller stones of various sizes, tightly fitted.

The walls of this level were presumably stone foundations of *kerpich* walls which had disappeared. The construction was everywhere about the same, but the degree of preservation varied. Only one or two courses of some walls were preserved.

LEVEL 2.—With the removal of Level 1, a series of inclosures was uncovered (Figs. 38 and 39) which closely resembled those of the upper level. In fact, the older walls had been used as foundations for the principal walls of Level 1, a phenomenon encountered in all strata of the

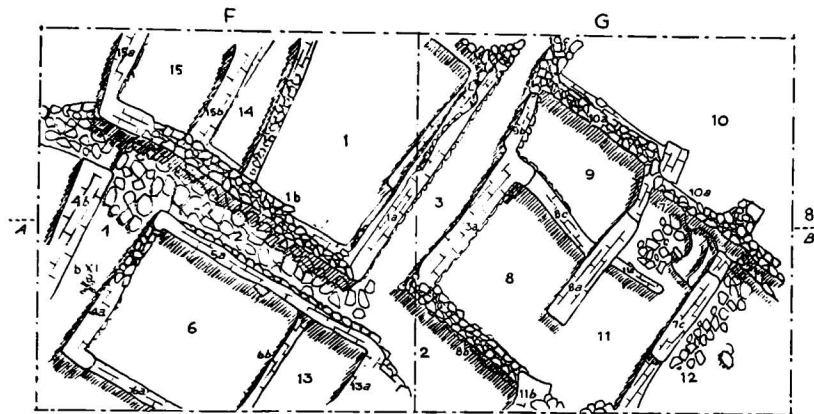


FIG. 38.—PLAN OF LEVEL 2 IN F-G 8 ON MOUND C. SCALE, 1:200

mound. The grouping of the building units, however, was more pronounced in Level 2 than in the levels above and below. There were three distinct units: the inclosure formed by Sections 7, 8, 9, and 11; that comprising Sections 1, 14, and 15; and that formed by Sections 6 and 13, separated from the others by Passage 2.

The area in Level 2 corresponding to Section 1 of Level 1 was divided into two rooms separated by Passage 14. Passage 14 was connected with Section 15 by a well defined doorway. The ledge of *kerpich* appearing below the walls of Section 1, like the wall top below Wall 10a, belonged to an older inclosure and had been re-used in this level. The pavement in Passage 2 was evidently contemporaneous with the stone foundations of Walls 1a, 1b, and 3a.

The Level 2 inclosure in G 8 had the same outline as that formed by Sections 7-9 of Level 1, but the arrangement of its subdivisions (7, 8, 9, and 11) was entirely different. Section 7 had a fireplace. There was an opening in the thin partition of *kerpich*, 11a, which separated Section 7 from Section 11. Sections 7 and 9 had apparently been connected by a doorway which was later walled up with a single row of bricks. Wall 8a was thick and well constructed, and built entirely of *kerpich*. It is quite possible that this wall originally joined Wall 11b but was later cut to make an opening between Sections 8 and 11.

The remaining walls were built according to the common style, stone foundations with strong border rows carrying here, as in most cases, the remains of former *kerpich* structures. The walls of Level 2 were built with less care than most of those above.

Burial b X1 was uncovered in Passage 4.

LEVEL 3.—The lowermost structures uncovered in F-G 8 (Fig. 40) had the same orientation as those above. Walls 1*a*, 1*b*, 4*b*, 5*a*, 6*a*, 6*b*, 8*a*, 10*a*, 15*a*, and 15*b* of Level 3 supported the corresponding walls of Level 2 (Fig. 37). The walls of Level 3 were in general of much better construction than those of Level 2.



FIG. 39.—LEVEL 2 IN F-G 8 ON MOUND C, FROM EAST

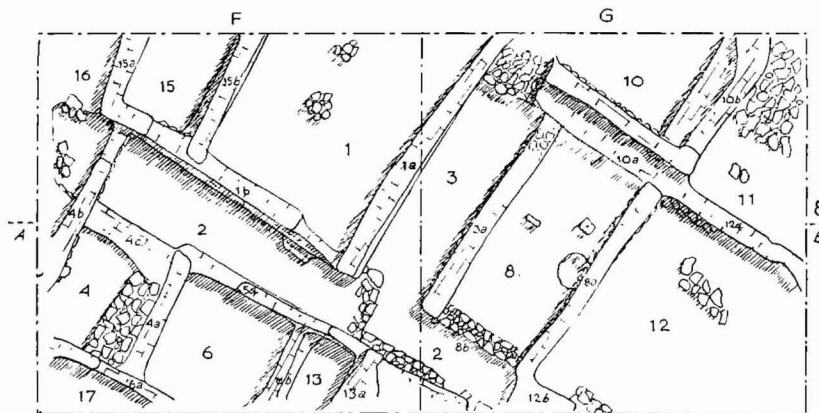


FIG. 40.—PLAN OF LEVEL 3 IN F-G 8 ON MOUND C. SCALE, 1:200

In Section 1 blackened patches near the north end of Wall 1*a* indicated the site of a fireplace. Wall 1*b* was thinner at its east end, where there was a doorway. A step in the passageway led up to the opening. Although the south edge of a doorway through Wall 15*b* was easily traced, the north edge could not be definitely determined. Remains of charred woodwork were noticed.

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A refuse pit .90 deep was found in Section 15. The walls in the southwest corner of the room were baked and charred, suggesting the proximity of a fireplace. The floor of Section 16 from Wall 15a to the edge of the plot was a solid mass of *kerpich*.

Section 4 was apparently entered from Passage 2.

The large inclosure in G 8 was divided into Sections 8 and 12. Section 8 contained some large stone equipment, including a mill. Only the stone foundation of Wall 8b remained. It belonged to the same level as the foundations of Walls 3a and 8a. In the southwest corner of Section 12 the wall (8a) was burnt and blackened, and the floor showed traces of fire. No fireplace built of stone was found in Level 3.

Some walls of Level 3 were found to be of later date than the original complex. These were the upper parts of Walls 1a, 1b, 10a, 10b, 15b, and 13a. Wall 4c and the lower parts of Walls 4a and 6b were of an earlier date, perhaps carrying through from Level 4, which is still unexcavated.

DESCRIPTION OF *KERPICH* BRICKS IN STRATUM V ON MOUND C

Wall	Color	Wall Thickness	Dimensions at Wall Face	Joints	Remarks
1a.....	Gray, light yellowish gray		.07 × .35-.37	.02; black	
3a.....	Yellowish brown	.58	.08-.09 × .35	.005; black	
Upper 4b.....	Light gray, dark gray, some light reddish yellow	.64	.07-.085 × .35-.40		In two cases the third dimension was obtained: .21 and .43. The wall was plastered
Lower 4b.....	Light yellow, with limestone particles	.64	.08-.10 × .32-.38	.005-.01; black	
5a.....	Light yellow, with limestone particles	.35	.07-.085 × .34-.36	.005-.01; black	The third dimension was .35, the thickness of the wall
6a.....	Very light gray at top; darker gray at bottom	About .45	.08-.10 × .35-.40	.01; dark gray	One brick was .18 long at the wall face; another, .27. The third dimension was .45, the thickness of the wall
8a.....	Light and dark gray with limestone particles	.45	.09 × .38	.005	
Upper 10a....	Dark gray, light gray	.35	.09 × .35-.39	.005-.01; black	
Lower 10a....	Light grayish brown		.07-.10 × .34-.37		
Upper 10b.....	Light yellow, light gray	.55	.07 × .35-.37	Tight	
Lower 10b.....	Dark gray, light yellowish gray, with limestone particles		.095 × .36-.38	Tight	
12a.....	Reddish brown, light and dark gray	.63	.08-.09 × .36-.37		The third dimension was .27-.36
15a.....	Light gray, dark gray, with limestone particles		.07-.09 × .20 and .37-.42		

PLOT F 14 ON MOUND B

In 1927 we followed the course of the fortress wall on Mound B.³⁵ The upper part of the second tower and some later building layers were uncovered in the area of F 14.³⁶ Walls of

³⁵ See *OIP* VI 195 ff.

³⁶ See *OIP* VI, Plots 8, 12, and 21.

Level 1 were directly superimposed on top of the fortress wall, which was evidently no longer used for defense. It is possible that the upper layer of Level 2 also was added after the fortress period (at the beginning of Period VI); for a coin of Philip Arrhidaeus³⁷ (323-316 B.C.), found in Plot 13³⁸ at about this depth, may have belonged to either the upper layer of Level 2 or the lowest layer of Level 1. Level 1 in F 14 contained remains of Period VI, including some coins of the 4th century A.D. The pottery may prove a help in correlating these levels more accurately with historical periods. The elaborately decorated vessel No. 184³⁹ was found 1.55 from the surface; Vessels 155 and 231⁴⁰ were of more recent date. Most of Level 2 and Levels 3a, 3b, and 3c were sublevels within the fortress wall, which must have been in use a very long time.

In order to determine those remains associated with the base of the fortress wall and thereby to determine the period of its construction, we decided in 1929 to section a square inside the fortress and north of the tower. It was clear that the tops of certain *kerpich* walls at the floor of Level 2 belonged to the underlying level. They may have been re-used during the Level 2 occupation, for there were paved patches of Level 2 origin bordered by the tops of Level 3 walls. Penetrating deeper, we uncovered the Level 3 walls. The situation was complicated by the presence of three sublevels (3a, 3b, and 3c). There had been rebuilding, subdividing of large inclosures by addition of walls above the original floor level, and re-using of the upper sections of earlier walls. The situation is best illustrated by the plans of the sublevels (Figs. 41 and 42), showing the successive building phases.⁴¹ As on Mound D, Alishar V pottery was associated with the base of the fortress wall (Level 3c).

POTTERY

The Alishar V pottery seems to be wheelmade throughout, though doubtful cases occur. Form, paste, and surface treatment are often inadequate guides in attributing vessels to this period, though some forms may be considered typical for Alishar V (e.g., Pitchers a 669:16, a 467, and a 669:12). The decoration is the feature which distinguishes Alishar IV from Alishar V pottery. In most cases we should not yet be able to distinguish plain sherds of the two periods.

Several styles of decoration were noticed, which may or may not be contemporaneous in part. The most typical decoration of the Alishar V pottery as a whole is a simple band design. Some elaborate animal patterns also occur, but the stags of Alishar IV design have disappeared. Concentric rings persist, though they are much larger than the majority of these elements in Alishar IV patterns. Bird and plant patterns, almost entirely absent from earlier vessels, are relatively frequent on Alishar V vessels. Some winged quadrupeds with human heads resemble Mesopotamian *lamassé*. During the late phase of this period black sherds with metallic luster and incised or painted decorations occur, apparently Aegean imports of about 400 B.C. and later. In addition, relief ornamentation in zigzag patterns seems to be characteristic of Alishar V, though this type may persist as late as the Roman period. Considering the Alishar V pottery as a whole, we may state that the decoration tends to become simpler than the average Alishar IV designs, though some vessels are decorated more elaborately.

The following vessel forms were found in Stratum V: painted bowls, pitcher, and jars; incised pitchers; a "trough" with relief ornamentation; and plain plates, bowls, zoöomorphic vessel, pitchers, bottles, vessels with perforated bottoms, jars, and lamps.

³⁷ No. 267, *OIP* VII 54.

³⁹ *Ibid.* pp. 84 and 256 and frontispiece.

³⁸ *OIP* VI 83.

⁴⁰ *Ibid.* pp. 84 and 253 f.

⁴¹ Detailed descriptions of all these excavated structures are in our records, but are omitted here because the remains in F 14 are analogous to those of the extensive fortress complex on Mound D which has been described in detail above.

STRATUM V

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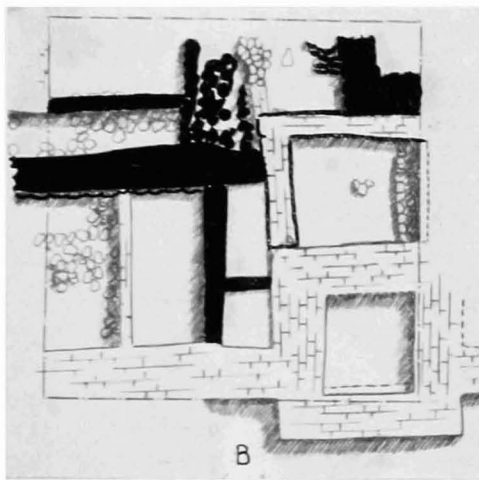
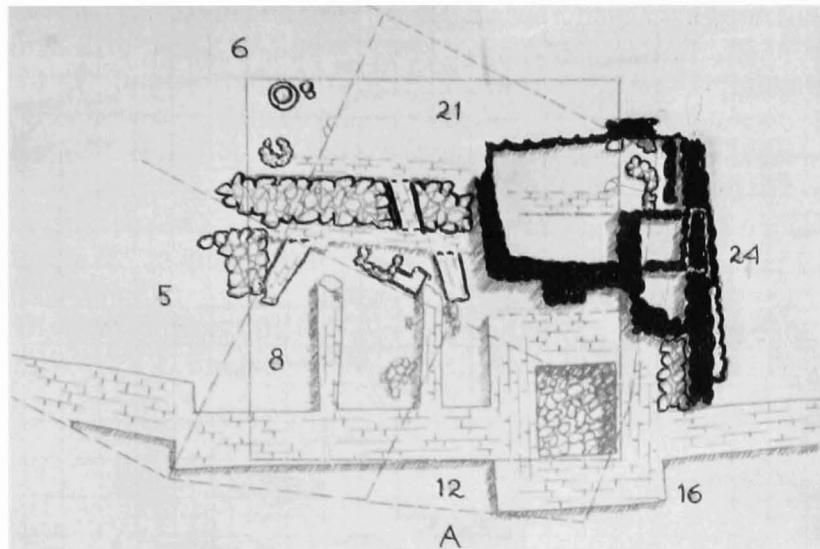


FIG. 41.—PLANS OF F 14 ON MOUND B, SHOWING RELATIONS OF LEVELS: A.—LEVEL 1 (BLACK) AND LEVEL 2 (BLACK-BORDERED); B.—LEVEL 3a (BLACK) AND LEVEL 3b (BLACK-BORDERED); C.—LEVEL 3c (BLACK) AND ASSUMED COURSES OF LEVEL 3c WALLS REPLACED BY WALLS OF LEVEL 3b (BLACK-BORDERED). SCALE, 1:200

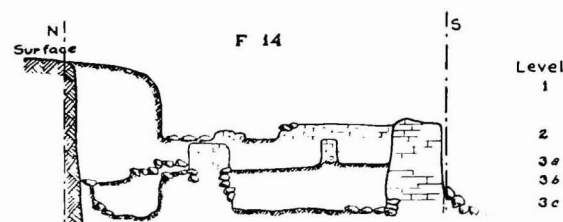


FIG. 42.—NORTH-SOUTH CROSS-SECTION OF F 14. SCALE, 1:200

VESSELS WITH PAINTED DECORATION⁴²

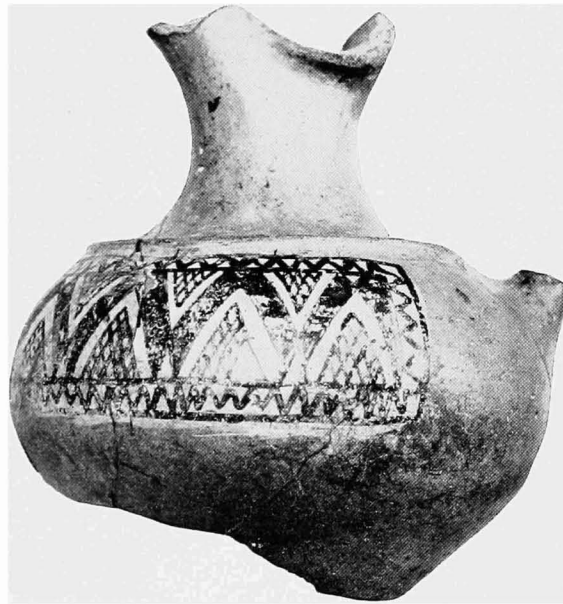
The fragments of Bowl 3278 (frontispiece) appeared in the upper layer (0–1.10 deep) of Plot XXIX of 1927 at the foot of the main mound. It is a shallow bowl .051 high. The bottom is pressed upward and forms a hollow hemisphere. The paste is light brown and medium to fine.

⁴² Vessels, like all other specimens obtained in Stratum V, are arranged within their subdivisions according to their find-spots (cf. p. 5). Unless otherwise stated, the vessels described are wheelmade.

The interior is light brown, the exterior a little darker and smooth. The exterior is painted with simple bands, alternating dark brown and red-brown. The elaborate design of the interior, also in dark brown and red-brown, is shown clearly in the illustration. We found the center and nearly all the fragments of the upper pair of animals. Of the lower pair, only the piece bearing the sun symbol with the front part of one animal was found. The rest of the design has been reconstructed.

Decorated bowls must have been very rare during Period V. The specimens available have the appearance of imported wares rather than homemade products. A few bowl sherds are shown in Plate IIA.

Pitcher b 664 (Fig. 43; cf. Plate IA) occurred in Y 7, 1.10 below the surface and about .20 below the base level of a wall attributed to the Roman occupation. A ledge separates the body



b 664

FIG. 43.—DECORATED PITCHER. SCALE, 1:2

from the neck, which merges into a clover-leaf orifice. The paste is light brown and medium to fine. The interior is light red-brown and somewhat rough. The exterior is light brown and smooth, almost polished. The decoration in red-brown and dark brown is applied on a grayish white panel which is interrupted by the handle. A red-brown zigzag band with open corners is bordered by dark brown lines. Crosshatched triangles in dark brown are used as fill patterns, and a red-brown zigzag line between two dark brown lines incloses the panel. Some *terra sigillata* sherds and some fragments of banded Alishar V ware and even some Alishar IV sherds were mixed in the find-layer. Panel decoration, however, is found on some Alishar V jars (e.g., Fig. 45 and No. b 2594 in Fig. 84).

Jar a 511 (Fig. 44) was at the base of Wall 9a inside Passage 4 of Level 2 on Mound A (cf. p. 9). We may attribute it to the lower complex. This fragmentary jar, approximately .51 high, had two vertical handles. The lower half of the exterior surface is light gray-brown; the upper half, brown-red. On the preserved upper portion are two large triangles with light background, decorated with concentric rings. Between the large triangles is a smaller, plain triangle.

No. a 518 (frontispiece) was found in M 12, Level 2-3, below Pavement 13b of Level 2. The rim has a broad flat top, somewhat T-shaped, but expanding farther toward the exterior. The

vessel had a wide orifice and rather straight sides. Its point of greatest diameter was a little below the neck. A hole for a repair tie is near the rim. The fragment has a medium paste with gray core and reddish surface. Small stone particles are present. The interior is reddish, with a brown-red slip on the upper part. The smooth, almost polished, exterior is coated with a brown-red slip on which a white panel was applied. The design in brown-red and grayish black is clearly shown in the painting. One winged quadruped (possibly Persian; cf. No. a 824, Fig. 46) faces another of which only the feet are preserved.

Fragment a 669:13⁴³ (Fig. 45) occurred on the floor of Section 17 of Level 3 in M 12. It is .113 high. Part of the clover-leaf orifice, with a "button" on the rim, is preserved. The paste

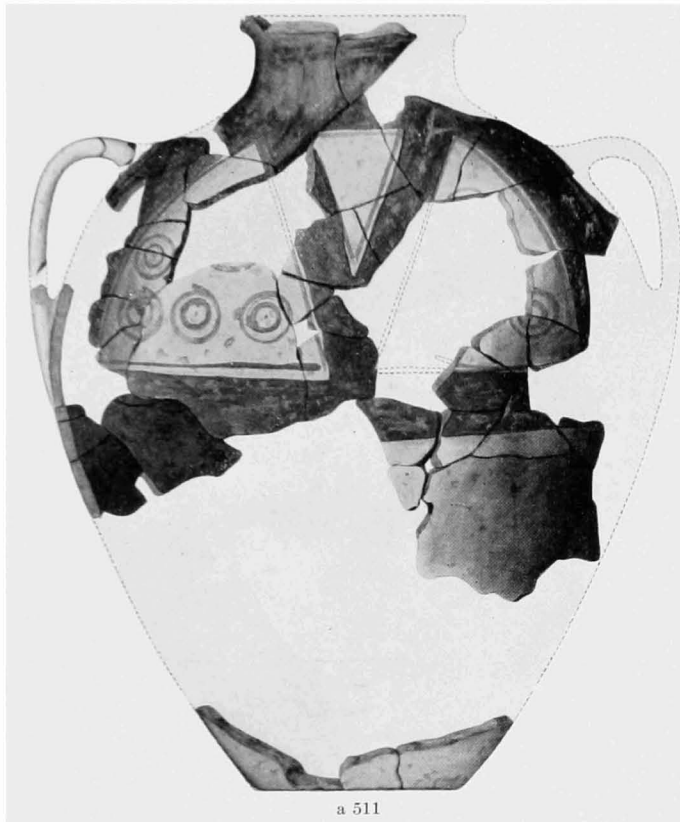


FIG. 44.—DECORATED JAR. SCALE, 1:5

is medium, gray at the core and light brown toward the surfaces. The interior and the smooth exterior are light brown. A white panel on the exterior bears the decoration in dark brown and brown-red. The upper row of the design consists of lentils alternating with lozenges. The second row is like the border of No. a 518 (see frontispiece). Below it are the ends of antlers(?), painted brown-red with dark brown borders. The "button" on the rim is coated white and decorated with crossed dark brown and red-brown lines in a dark brown circle.

No. a 824 (Fig. 46) occurred in M 12, Level 3-4. It is a fragment (.16 high) of a large jar, showing traces of a clover-leaf orifice. The paste is medium and red-brown. The interior surface is red-brown. On the exterior neck a patch of brown-red slip is visible. Presumably the entire exterior was coated in the same way. The decoration in dark brown and red-brown (somewhat lustrous in part) was applied on light grayish white panels. It consists of a neck

⁴³ Fragment a 642, found in N 13, Level 3-4, resembles No. a 669:13 and may belong to Period V, although it was ascribed to Period IV. See *OIP* XIX 242

design of "buds" and undulating lines and a body design of two human-headed, winged quadrupeds separated by a star. Only the front part of the figure at left is preserved; it shows a human head in profile, with a three-pointed crown, a queue, and a long, pointed beard. The headdress⁴⁴ of the figure at right is more elaborate; the interstices between the points are alternately dark brown and red-brown. The winged body is similar to that on No. a 518 (frontispiece). The dark brown four-lobed figure above its posterior part is filled with red-brown

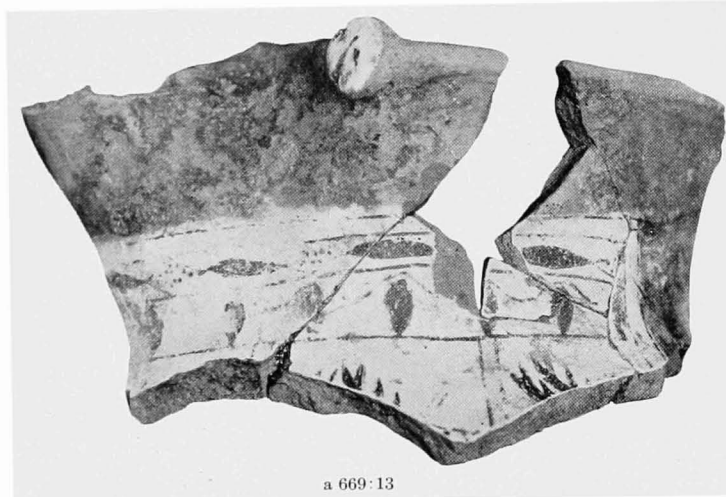


FIG. 45.—FRAGMENTS OF A DECORATED JAR. SCALE, ABOUT 1:2



FIG. 46.—FRAGMENTS OF DECORATED JARS. SCALE, ABOUT 1:3

dots. Vertical bands of lozenges separate the figures from the elaborate star pattern. The star has twelve points, variously decorated. An oblique cross is painted over it.

No. b 36:112 (Fig. 46) was found during the removal of Levels 3a-3c in F 14 on Mound B. It has a medium, light red-brown paste, a brownish buff exterior, and a buff interior. The decoration is brown-red. The pattern consists of two rows of broad leaves, their stems attached

⁴⁴ Is this a representation of one of the royal tiaras of the Achaemenids? See Perrot and Chipiez, *History of Art in Persia* (New York, 1892) pp. 451-52. Cf. also H. H. von der Osten, "The Ancient Seals from the Near East in the Metropolitan Museum," in the *Art Bulletin* XIII, No. 2 (1931) seals Nos. 5 and 6; and F. Sarre, *Die Kunst des alten Persien* (Berlin, 1922) Plate 52, bottom figure.

to border lines. Between the allover pattern and the upper fracture are an undulating line and a straight line.

Vessel b 416 (Fig. 47; cf. Plate I *B*) occurred in Level 2 of Section 8 on Mound D (K 3), and its fragments were inside Jar b 415 (cf. p. 32). The paste is medium and light brown. The interior is light brown, and the exterior is coated with a light gray-brown slip. The decoration, typical of many Alişar V vessels, consists of three simple brown-red bands, perhaps applied while the vessel was being turned on the wheel. The color is not uniform; but the bands are composed of lines of lighter and darker shades, a frequent phenomenon on the banded vessels and sherds of Period V.

No. b 887 (Fig. 48) was found in X 19 at a depth of 3.80. This pot fragment has a medium, light brown paste. Both exterior and interior are light brown; the exterior is smooth. The decoration consists of brown-red bands bordered by gray-black lines. A row of plants(?) in gray black is painted between two of the upper bands. In spite of its association with earlier wares, particularly those of Alişar II, we tentatively attribute this vessel to Alişar V on account of its decoration.

Bottle 332 (cf. p. 49) is decorated with two pairs of narrow red bands.



b 416

FIG. 47.—DECORATED JAR. SCALE, 1:8



b 887

FIG. 48.—DECORATED JAR. SCALE, 1:4

The collection of sherds of Alişar V painted jars⁴⁵ includes fragments with banded decoration (Plates IIB–IV), intricate animal designs (Plate V), bird patterns (Plates VI–VIIA), plant motives (Plates VIIB–VIII), and large concentric rings and other geometrical designs (Plate IX).⁴⁶

VESSELS WITH INCISED ORNAMENTATION

Pitcher(?) a 168 (Fig. 49) occurred in Section 13 of Level 2. It is .15 high. Its paste is medium and reddish. The interior is light brown and rough; the exterior, light brown and smooth. Two irregular incised lines border a band of red-washed triangles alternating with triangles filled with small triangular depressions. Traces of red wash are visible at the broken base.

Pitcher a 669:16 (Fig. 49) was found in M 12 on the floor of Section 22 of Level 3. Its paste is medium to fine and light brown. Its exterior surface is light brown and polished. A simple ornament of vertical and oblique lines is incised on the front.

Sherd b 746:2 (Fig. 50), found in J 3 at the base level of the Alişar V fortress wall, may be part of an Alişar V vessel. It is light gray-brown and was "honey-combed" with a thin tube.

⁴⁵ Some bowl sherds, not recognized as such, may be contained in this series.

⁴⁶ The sherds are arranged according to patterns, disregarding the find-spots.

Single sherds of imported Aegean vessels occurred consistently in the upper deposit of Stratum V. We must, therefore, consider them contemporaneous with the last level or sublevels occupied during this period. Those illustrated in Plate XA were obtained in 1927.

The incised gray sherds shown in Plate XA may or may not have had the same origin as the black sherds.

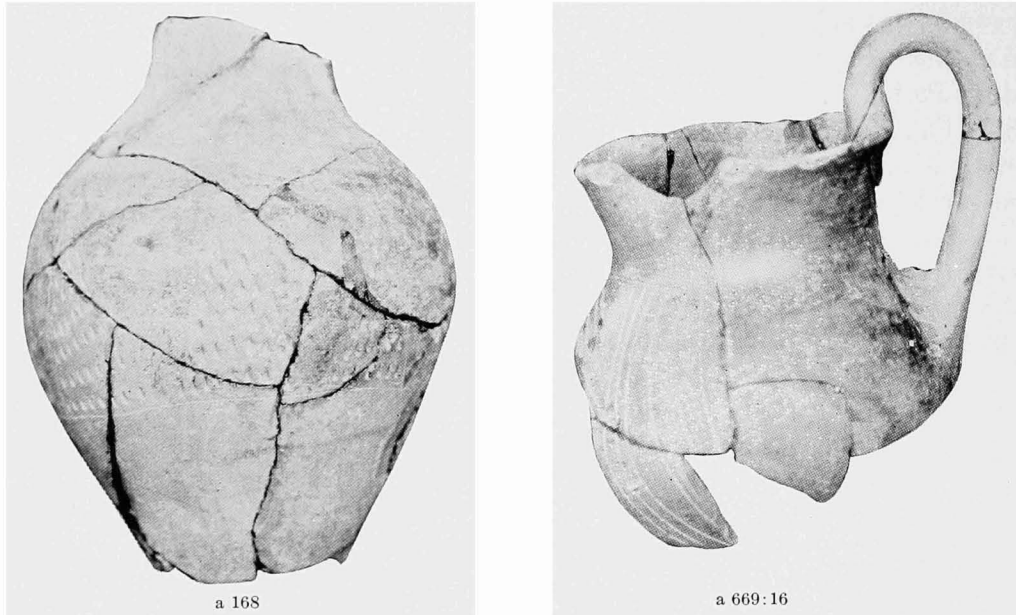


FIG. 49.—JAR AND PITCHER WITH INCISED ORNAMENTATION. SCALE, ABOUT 1:2

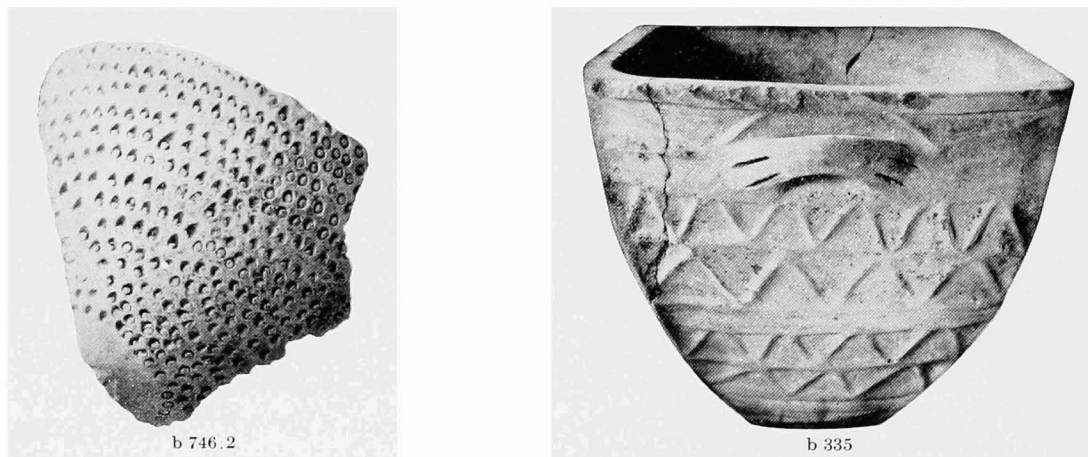


FIG. 50.—INCISED SHERD.
SCALE, 1:2

FIG. 51.—TROUGH WITH RELIEF ORNAMENTATION. SCALE, 1:12

VESSELS WITH RELIEF ORNAMENTATION

Trough b 335 (Fig. 51; cf. Plate IB), an excellent example of relief ornamentation,⁴⁷ was set in the floor of Level 3b in L 5 (cf. p. 30). At each end there is a horizontal handle with two pairs of incisions. Two old fractures had been repaired by means of ties (lead?), five pairs of

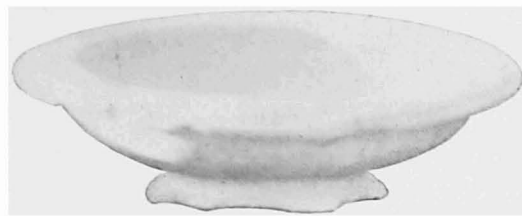
⁴⁷ See *OIP* VI 252 f. Though we formerly defined this type of ornamentation as Roman, the present vessel indicates that the type was known during pre-Roman times.

holes for repairing being present. The trough was apparently handmade, of medium, light brown paste. Its exterior and upper interior are coated with a light gray wash, light brown and light buff in places. The lower interior is light red-brown. The relief ornamentation of zigzag bands is shown clearly in Figure 51. Some fragments of a vessel with identical ornamentation were uncovered in the base level of the fortress in F 14. Fragments of similar style occurred as high as Stratum VI. For other sherds with relief ornamentation see Plate XB.

PLAIN VESSELS

The plates illustrated both occurred in the fortress complex, on Mounds B and D respectively. We found fragments of plates, however, on Mound A.

No. 561 (Fig. 52), from Plot 23 of 1927, 1 meter deep, is a typical plate, with stand and broad rim. The rim diameter is .274. The vessel has a medium, light brown paste and a light brown,



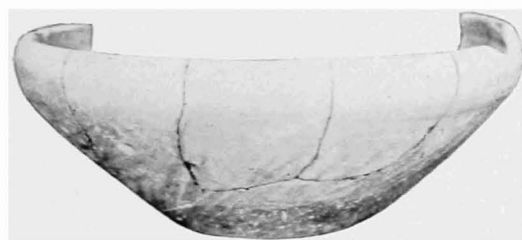
561

FIG. 52.—PLATE. SCALE, ABOUT 1:4



b 784

FIG. 53.—PLATE. SCALE, 1:4



a 114



a 163

FIG. 54.—PLAIN BOWLS. SCALE, ABOUT 1:4

somewhat rough, surface. No wheel marks are visible on this vessel, nor on most others of its type.

Plate 274 (not illustrated), found in Plot 13 of 1927⁴⁸ a little below the level of Coin 267, has a rim diameter of .25. Only half of the bowl-shaped body is preserved. There was most probably a foot such as that of Plate 561. The paste is medium and reddish brown. Both sides are smooth, almost polished, and coated with a red-brown slip containing some mica.

Plate b 784 (Fig. 53) occurred in H 3 at a depth of 1 meter. There were late and early Alişar V remains in the find-layer and a few Alişar VI sherds. The broad rim is squared off at the edge. The paste is medium and light brown. A brown-red wash or slip covers the light brown surface on both sides of the rim. This plate shows wheel marks, in contrast to other vessels of the same type.

Bowl a 114 (Fig. 54) occurred in Section 19 of Level 2. It has a flat bottom and incurved rim. The paste is medium with a gray core. The surface is light brown and smooth. There are three pairs of holes for repair ties, also one hole in the center of the bottom.

⁴⁸ OIP VI 83.

Bowls a 163, a 165, and a 1054 were found in Section 19 of Level 3 on Mound A. No. a 163 (Fig. 54) has a slightly concave bottom. The paste is medium and reddish. The surfaces are crackled, but the upper interior is smooth. The bottom of No. a 165 (not illustrated) is flat. The bowl has a medium, light brown paste. Both surfaces are crackled and coated with a gray, somewhat greenish, slip, light brown in places. No. a 1054 (not illustrated) has a flat bottom and a medium to fine paste with gray core and smooth, light brown surfaces.

Bowl b 835 (Fig. 55; cf. Plate IA) stood about .20 above the excavation bottom in Section 8 on Mound D (K 3). It is similar in form to the bowls from Mound A just described. Its medium paste is light brown. The surface is light gray-brown and porous.

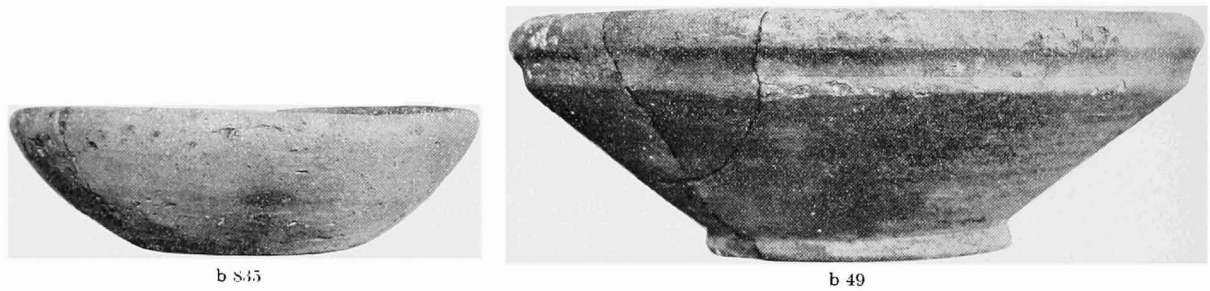


FIG. 55.—PLAIN BOWLS. SCALE, 1:4



FIG. 56.—PLAIN PITCHERS. SCALE, ABOUT 1:2

No. b 450 (Plate IA), found in Level 3a-3b in F 14, also resembles the Mound A bowls in form. Small stone particles are visible in the medium, light brown paste. A light gray slip covers the rather smooth surface. There is little doubt that the vessel is wheelmade, though no wheel marks are visible.

Bowl b 49 (Fig. 55; cf. Plate IA), from Level 3a-3b of F 14, has a short, solid foot and an elaborate rim. The paste is light brown and medium. The surface is blackened in places. The interior is rough, small stone particles of the paste cropping out.

Three pitchers almost identical in form were found in the upper sublevel of Level 3 on Mound A. They represent a definitely Alishar V type of vessel. No. a 669:16 was described on page 45. No. a 467 (Fig. 56) was in Section 18 in M 11. It is .075 high without the handle.

The bottom has a small, shallow depression. The paste is fine and light brown. The interior is rough; the exterior, almost polished. No. a 669:12 (Fig. 56) occurred in Section 23 in M 12. It is .113 high without the handle. The paste is medium to fine and light brown. The exterior, somewhat darker than that of the preceding vessel, is polished.

Vessel a 519 (Fig. 57) was found in N 13 directly below Section 16 of the lower complex of Level 2. Seen from the top, the body is elliptical and suggests that of a duck. The front is pointed below the tubular neck, and there is a short tubular spout at the posterior end. The handle was on the top of the vessel. The pot has a medium, light grayish brown paste. Both surfaces are light brown, and the exterior is smooth. The vessel shows no wheel marks and was presumably handmade.

Bottle 332 (Fig. 58) was found in the tower room in F 14 (Plot 12 of 1927)⁴⁹ at a depth of 1.90 below the preserved top of the fortress wall. It is .075 high. The paste is fine and light brown. The smooth, yellowish brown surface is decorated with two pairs of narrow red bands

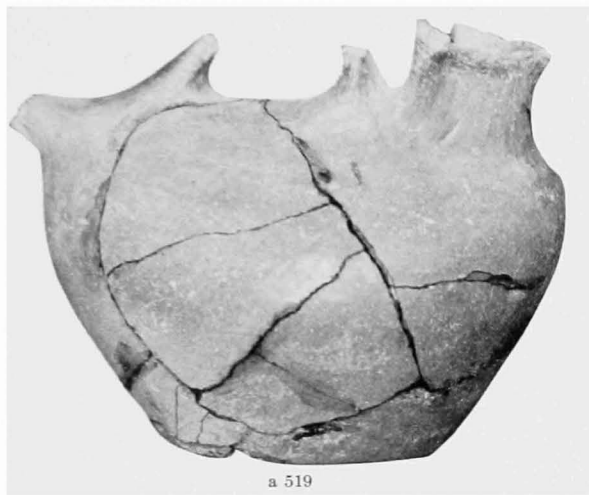


FIG. 57.—ZOÖMORPHIC(?) VESSEL. SCALE, ABOUT 1:2



FIG. 58.—SMALL BOTTLE. SCALE, 3:4

on the upper body and neck. Bottles of similar shape have been attributed to the Roman period.⁵⁰

Bottle a 1061 (Fig. 59) was found in L 13 in a refuse pit of Level 3 origin which extended as deep as Sections 11–12 of Level 4 (Stratum IV). The vessel is .23 high. The foot was probably solid.⁵¹ The handle has lengthwise grooves. The rim has an offset on the interior, the neck diameter being half as wide as that of the lip. The paste is medium to fine and light brown. The exterior is smooth, whereas the interior of the body shows deep wheel marks.

Two peculiar pots (Fig. 60) were found below the floor of Section 19 in O 12. They may belong either to the lower complex of Level 2 or to Level 3. The pointed bottoms of both vessels are perforated, making their purpose problematical. No. a 314 has a medium paste with brown core and lighter surfaces. Its smooth exterior is light brown with darker stains. The paste of No. a 315 is light brown throughout. This vessel bears a light gray slip on a porous surface.

Small jar No. a 470 (Fig. 61) was on the floor of Section 17 of Level 3 in M 12. Two small horizontal handles at opposite sides of the body are somewhat ear-shaped, each with an aperture only large enough to admit a cord. The jar has a fine light brown paste and a light brown surface. The exterior is very smooth.

⁴⁹ See *OIP* VI 84.

⁵⁰ *Ibid.* pp. 251 f.

⁵¹ Cf. Bottle 510, described in *OIP* VI 251.



FIG. 59.—BOTTLE. SCALE, 1:2

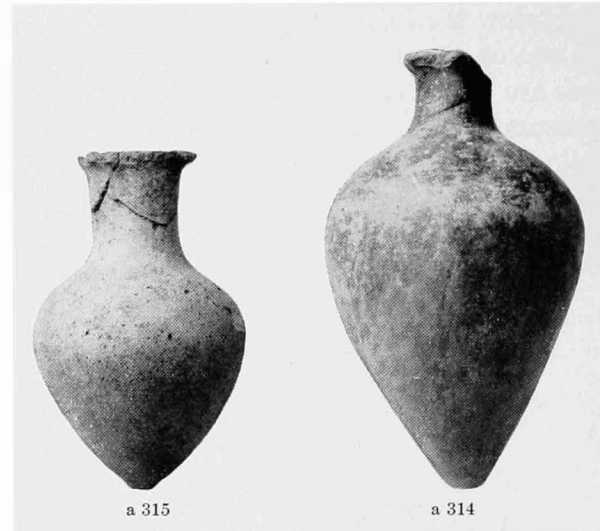


FIG. 60.—JARS WITH PERFORATED BOTTOMS. SCALE, 1:4



FIG. 61.—SMALL JARS. SCALE, ABOUT 1:2

Jar a 480 (Fig. 61) was found in Pit 20c (M 12), which may have been dug during either the Level 2 or the Level 3 occupation. It had only one handle, which rose above the lip. The bottom is flat and slightly concave. The medium paste is dark gray. The light brown surface, showing some mica, is almost entirely blackened by fire. The bottom, however, is hardly discolored.

Jar b 451 (Fig. 62; cf. Plate 1A) occurred in Level 3a 3b of F 14. It may have had two handles, but only one is preserved. This bears the impression of a finger tip at the lower end. The medium paste is light brown toward the interior of the vessel, gray toward the exterior. The surface is brown with reddish shades. The rubbing tool, probably a stone, left marks on the exterior. The bottom and the side opposite the handle are blackened by use over fire.

Jar b 168 (Fig. 62; cf. Plate 1A) was found in Level 2 of G 8. Its paste is medium and light grayish brown. The exterior is largely blackened by fire.

A well constructed jar, No. b 415 (Fig. 63; cf. Plate 1B), was uncovered in Level 2 of Section 8 on Mound D (K 3). The vessel is .58 high. The bottom had been broken and mended



FIG. 62.—SMALL JARS. SCALE, 1:2

with white, chalky material; and there are two holes for repairing, one on each side of an old fracture. The paste is medium to fine with light brown center and reddish surfaces. The lower body and the interior are light brown with brownish buff shades. The rest is coated with a brown-red wash or slip, almost purplish in parts. The fragments of Jar b 416, painted with the typical band decoration of Alişar V, were inside this vessel (cf. p. 32).

Jar a 164 (Fig. 64) was associated with Vessels a 134, a 163, a 165, and Lamp a 127 on the floor of Section 19 of Level 3 on Mound A. The jar is .45 high at present. There were probably two handles and a small flat bottom. The paste is medium with light brown center and red-brown surfaces. The exterior is coated with a light gray, almost whitish, slip. The interior is light brown.

A storage jar, No. a 134 (Fig. 64), stood in a small depression of Section 19 of Level 3 on Mound A, separated from the rest of the room by a series of upright slabs. Its rim was about flush with the floor. The jar, .502 high, may have been used for storing water or grain. The rim has a broad flat top (.037 broad). The bottom is somewhat concave. The paste is medium and light brown with small stone particles. The surface is light brown.

Nearly all of the lamps found in Stratum V were associated with Level 3 on Mound A. No. a 152 (Fig. 65) was in the refuse above Section 19 of Level 3 and may be of Level 2 origin. The cup-shaped vessel (.062 high) is handmade, as are all the lamps. It has a very thick, irregular

wall, and the bottom is flat and irregular. A medium, gray paste was used. The rough surface is apparently fire-blackened.

No. a 463 (Fig. 65) was on the floor of Section 19 of Level 3 (Mound A). The long sides are straight and diverge somewhat toward the top. Seen from above, the shape is trapezoid

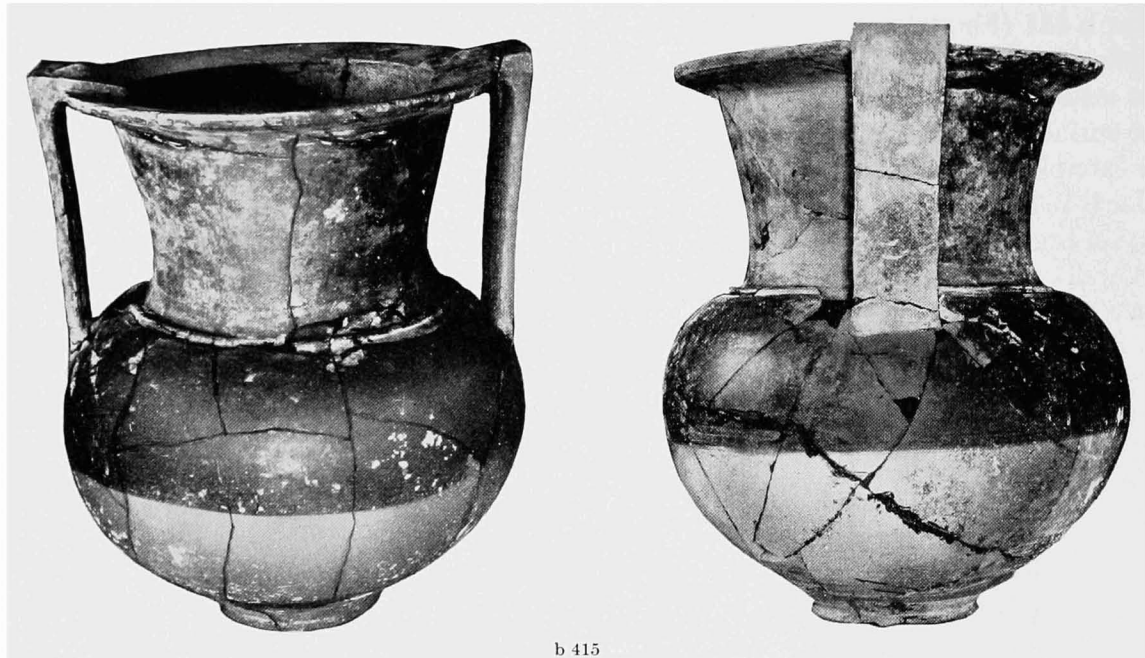


FIG. 63.—SIDE AND HANDLE VIEWS OF ELABORATE JAR. SCALE, ABOUT 1:8

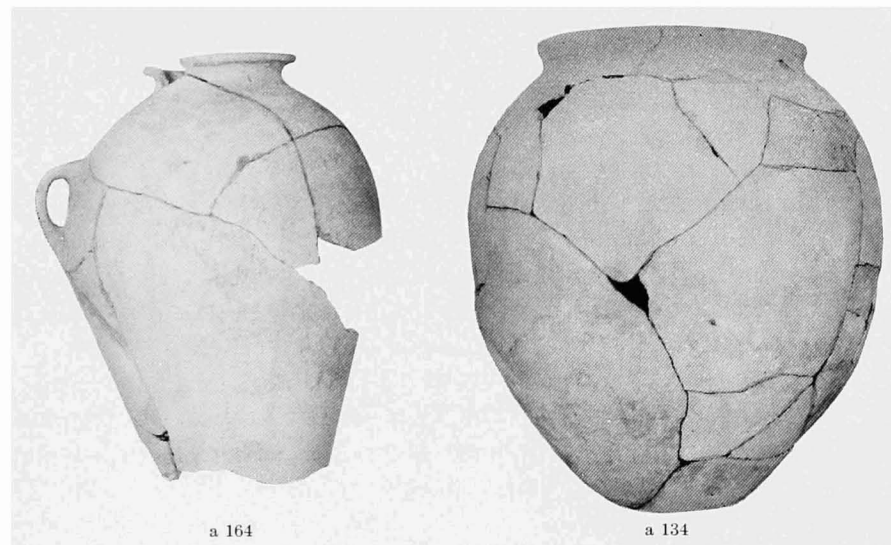


FIG. 64.—LARGE JARS. SCALE, 1:8

with rounded corners. One end narrows into a blackened spout (wick spout?). The paste is medium with a gray core. The surface is rough, light brown, reddish, and gray. There is some mica on the exterior.

No. a 127 (Fig. 65), from the floor of Section 19 of Level 3 (Mound A), may have been used as a lamp. It is .156-.168 across. A low rim is raised above the upper surface, which is divided into an oval depression, with a small fire-blackened spout, and a crescent-shaped de-

pression shallower than the first. The foot is a solid square with a cut-out rectangle at each side. The paste is medium and light brown. The surface is rough and has gray, grayish black, and light brown shades.

Lamp a 466 (Fig. 66) was in the southeast part of Section 17 of Level 3. The vessel is .113 high. Above the fragmentary solid foot there is an oval ring of clay ornamented with

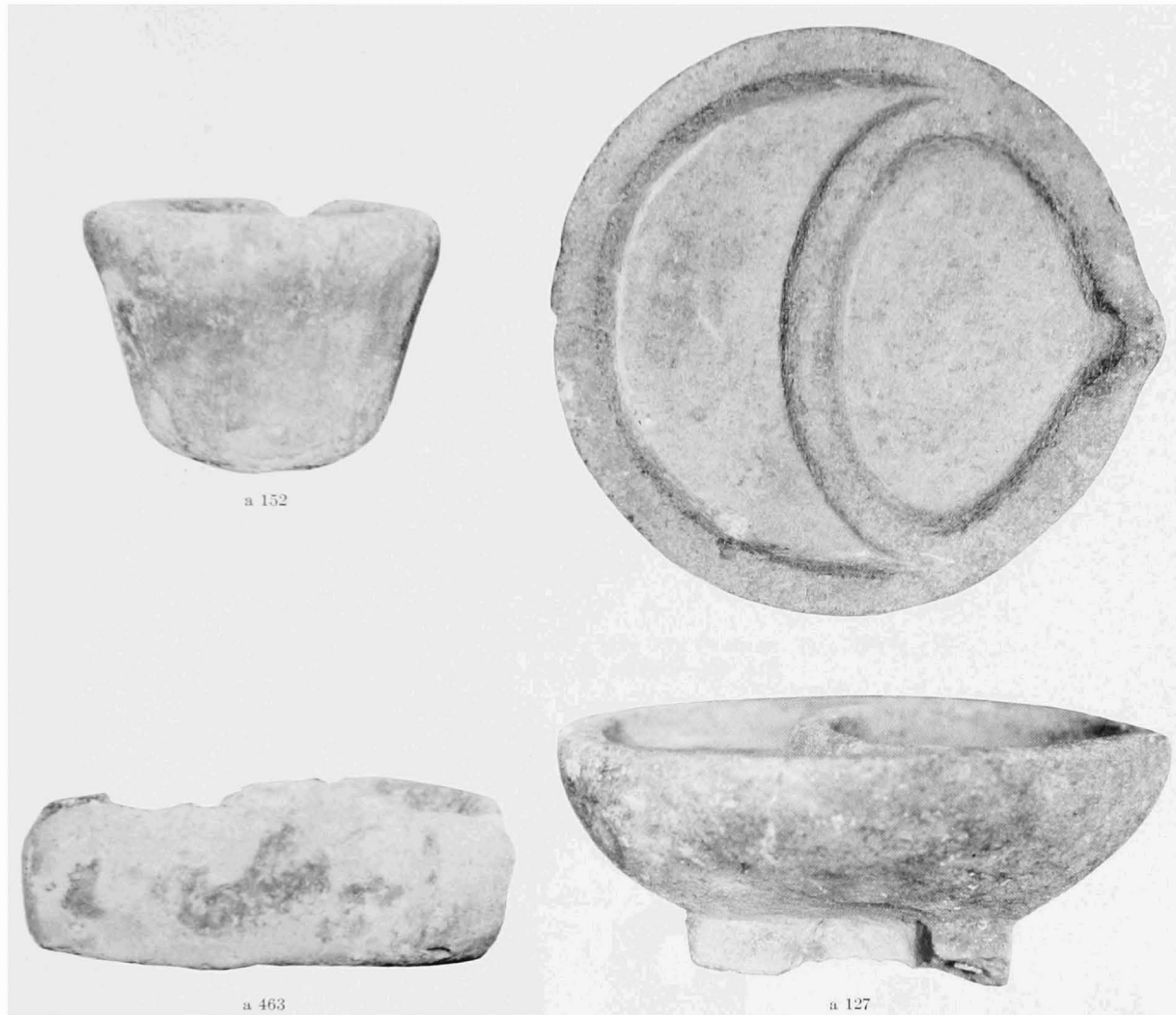


FIG. 65.—LAMPS. SCALE, ABOUT 1:2

small lumps of clay which were applied secondarily along the edge. The body spreads from the ring upward and is ornamented with vertical grooves. The rounded rectangular top has a shallow, fire-blackened depression. The paste is medium and grayish black. The surface is coarse.

Lamp a 198 (Fig. 66) was found in refuse 1 meter below the surface of the north slope of Mound A. The find-level corresponded approximately to the level of the walls of Section 10 (cf. p. 17). On a solid body with square base and paneled sides is a shallow, bowl-shaped container, blackened all over. The vessel has a medium, grayish green paste. The surface is coarse, light brown and grayish black.

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MISCELLANEOUS OBJECTS

The Alishar V loom weights have trapezoid sides, in contrast to the oval shape of earlier loom weights. The series obtained on Mound A includes those shown in Figure 67: No. a 84

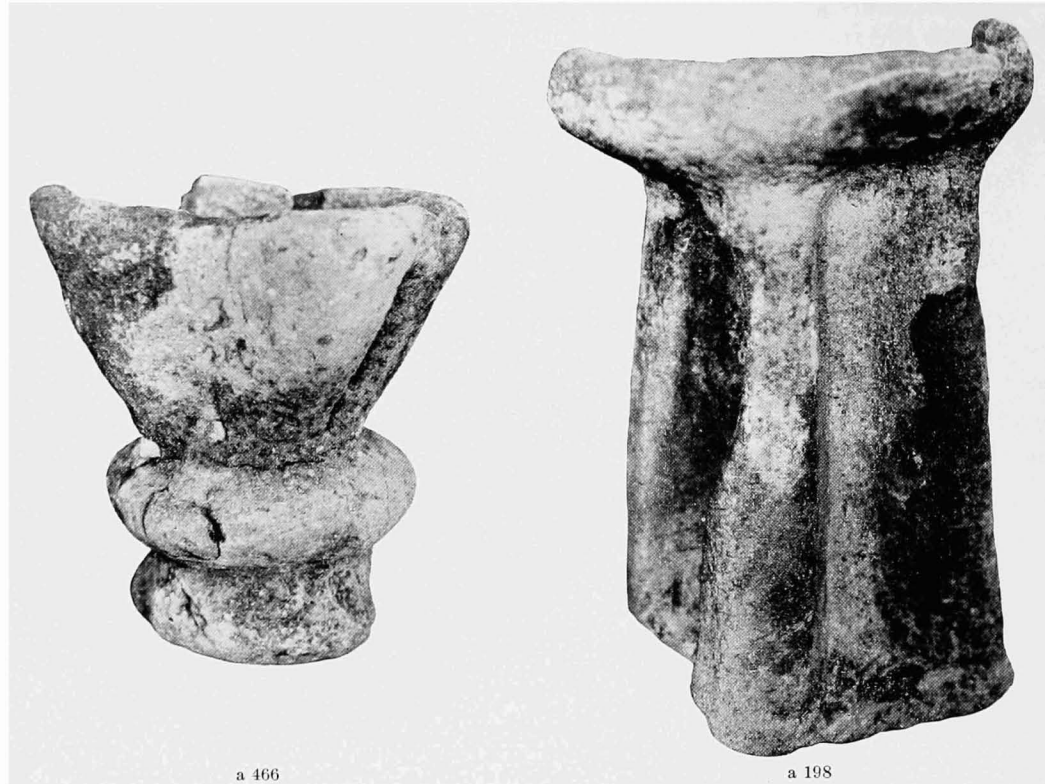


FIG. 66.—LAMPS. SCALE, ABOUT 1:2

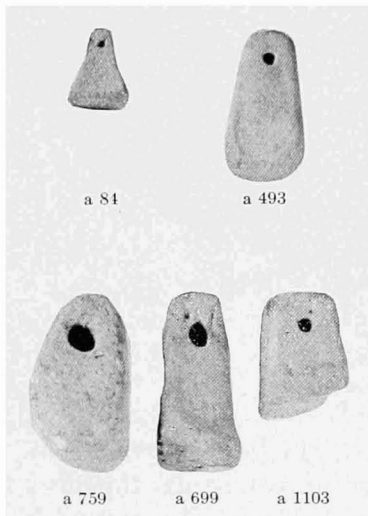


FIG. 67.—LOOM WEIGHTS FROM MOUND A

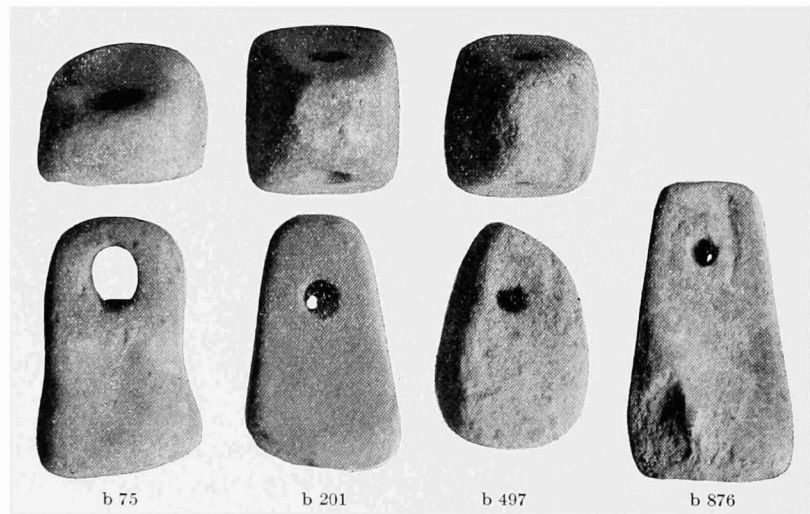


FIG. 68.—LOOM WEIGHTS FROM MOUNDS C AND D. SCALE, 1:2

from Level 2; No. a 493 from Level 2-3; and Nos. a 759, a 699, and a 1103 from Level 3-4. Nearly all these weights have been fired and show shades of brown, red-brown, and yellowish brown. No. a 759 is unfired, crude, and gray; it is apparently plant-tempered.

Loom weights found elsewhere are shown in Figure 68. No. b 75 (G 8, Level 1) has an un-

usually large perforation and an irregular shape. No. b 201 (G 8, Level 2) is well fired, with a light red-brown surface. No. b 497 (H 5-6, Level 1) is rougher and light gray. No. b 876 was found in R 6 at a depth of 1.50-1.75. We attributed this specimen to Alişar V on account of its form. It is well fired and light brown.

Clay Disk b 214 (Fig. 69), though found in Stratum V on Mound C (G 8, Level 2), is not a typical Alişar V object. It resembles closely the "cakes" occurring in great numbers in Stratum II. It is a gray oval disk with small oval figures impressed on one flat surface.

Rings of pottery and clay, like those present in most strata of the mound, are also shown in Figure 69. No. b 199 (G 8, Level 2) is fired and grayish brown. No. b 881 (K 3, Level 3) is unbaked, crude, and gray.

Pottery figurines and fragments of zoöomorphic vessels are described on pages 59-63.

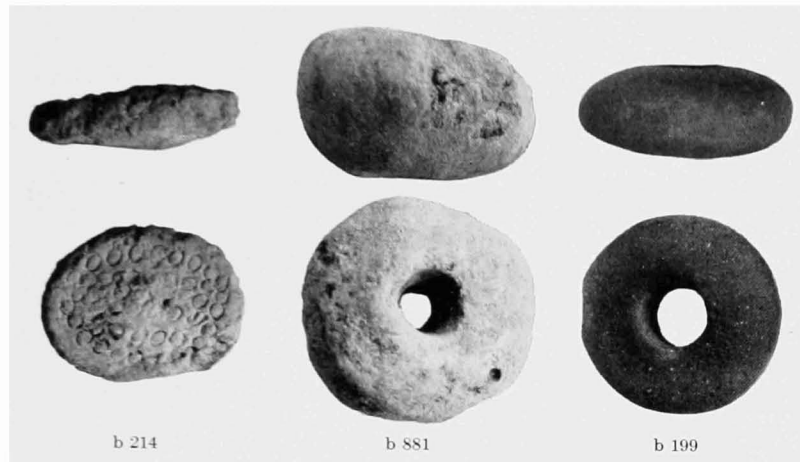


FIG. 69.—CLAY "CAKE" AND RINGS OF CLAY AND POTTERY. SCALE, 1:2

SPINDLE WHORLS

POTTERY

Again the relatively inconspicuous whorls appear as important chronological clues. The typical pottery whorl of Alişar V is truncated biconical. It is found in all sublevels of the stratum.

In addition, the following forms occur on Mound A: conical, globular, semiglobular, oval, discoid, and tubular. No. a 357 from Level 2-3⁵² (Fig. 71) and Nos. a 408 and a 476 from Level 3 (Fig. 72) are intrusive concavo-convex whorls of Alişar III make. The illustrations (Figs. 70-73) are arranged according to levels and give a fairly good idea of the relative frequency of the whorl shapes. Many whorls, particularly those of the typical shape, are smooth or polished; but crude, irregular whorls also occur. Gray and grayish black are the most common colors; but brown, light brown, and red-brown are frequent.

In Stratum V on Mounds B, C, and D a similar series of whorls was found. For illustration a type collection has been selected (Fig. 74) which includes truncated biconical, No. b 81 (L 5, depth .50) and No. b 375 (L 5, Level 3b), two specimens which illustrate the uniformity of this whorl type during all building phases of the fortress; truncated conoid, No. b 559 (I 3, Level 2-3); convexly biconoid, No. b 23 (F 14, Level 3); globular, No. b 174 (F 8, Level 1-2); semiglobular, No. b 253 (L 4, Level 1, outside of fortress wall); oval, No. b 560 (G-H 4, depth 1.20-1.50); discoid, No. b 113 (M 5, Level 1-2); tubular, No. b 200 (G 8, Level 2); and cartwheel-shaped, No. b 178 (F 14, Level 1-2).

⁵² The system of numbering levels has been described on page 5.

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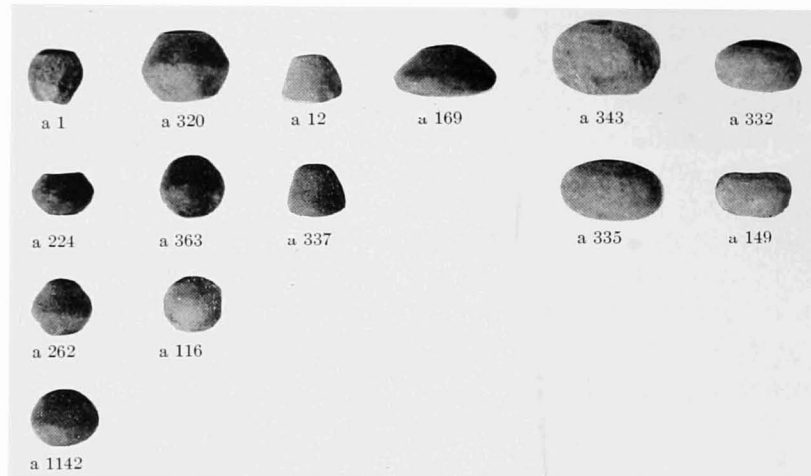


FIG. 70.—POTTERY SPINDLE WHORLS FROM LEVEL 2 ON MOUND A. SCALE, 2:5

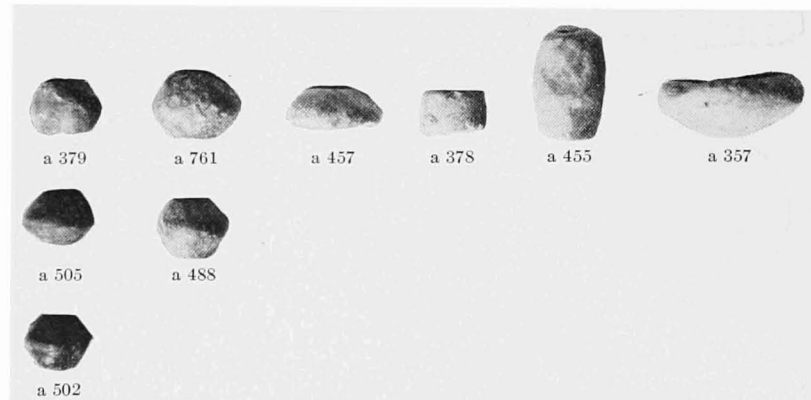


FIG. 71.—POTTERY SPINDLE WHORLS FROM LEVEL 2-3 ON MOUND A. SCALE, 2:5

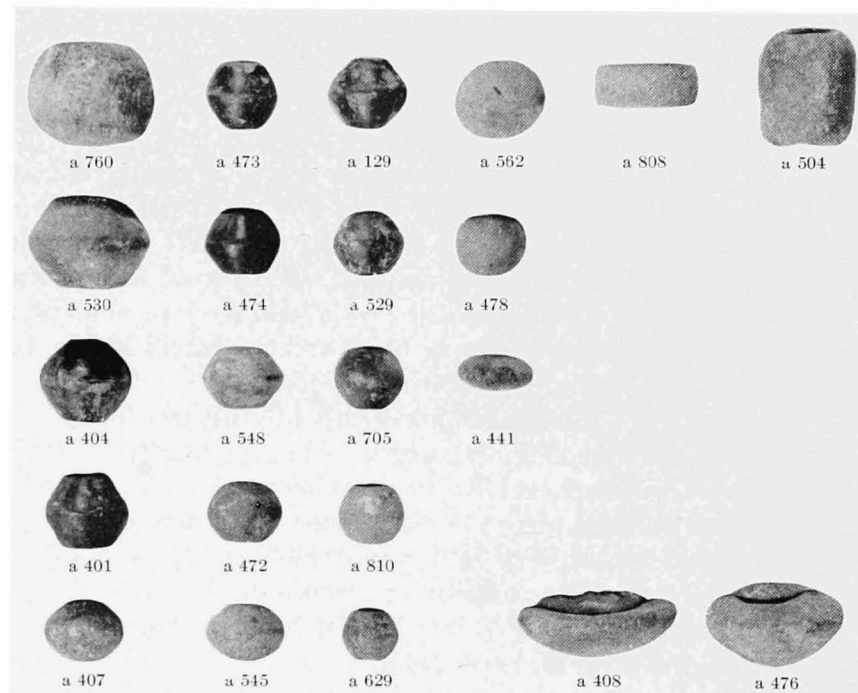


FIG. 72.—POTTERY SPINDLE WHORLS FROM LEVEL 3 ON MOUND A. SCALE, ABOUT 2:5

STRATUM V

57

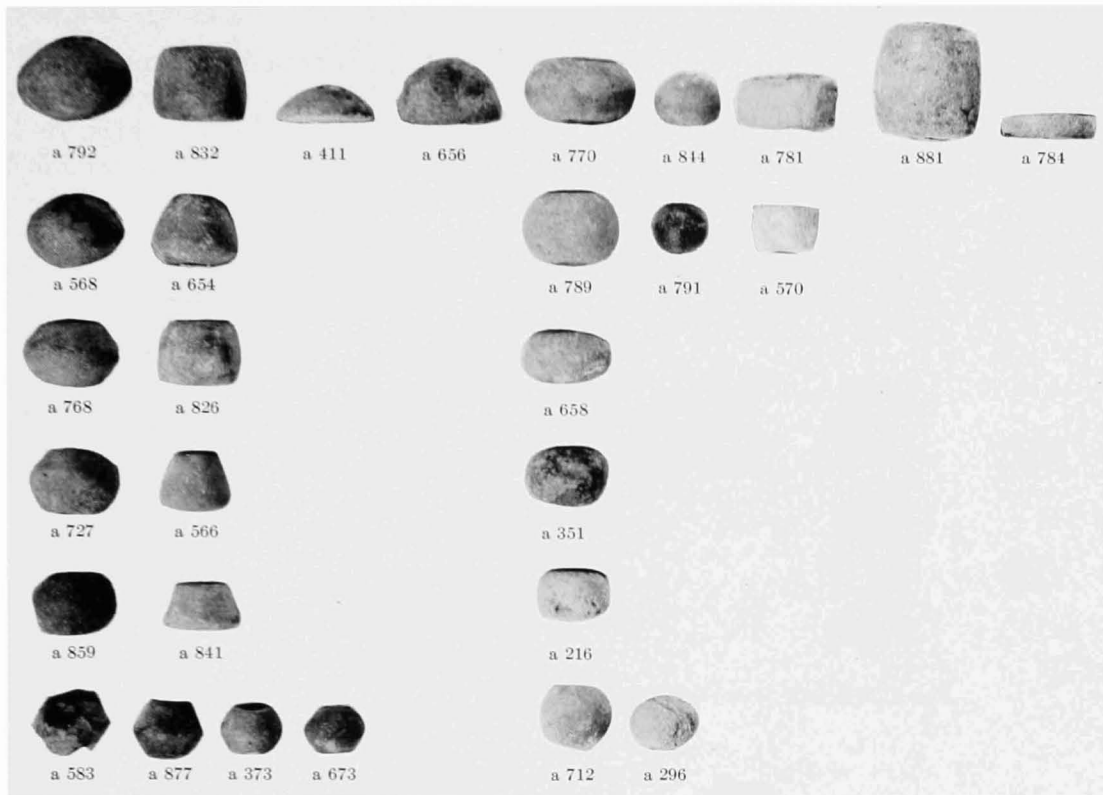


FIG. 73.—POTTERY SPINDLE WHORLS FROM LEVEL 3-4 ON MOUND A. SCALE, ABOUT 2:5

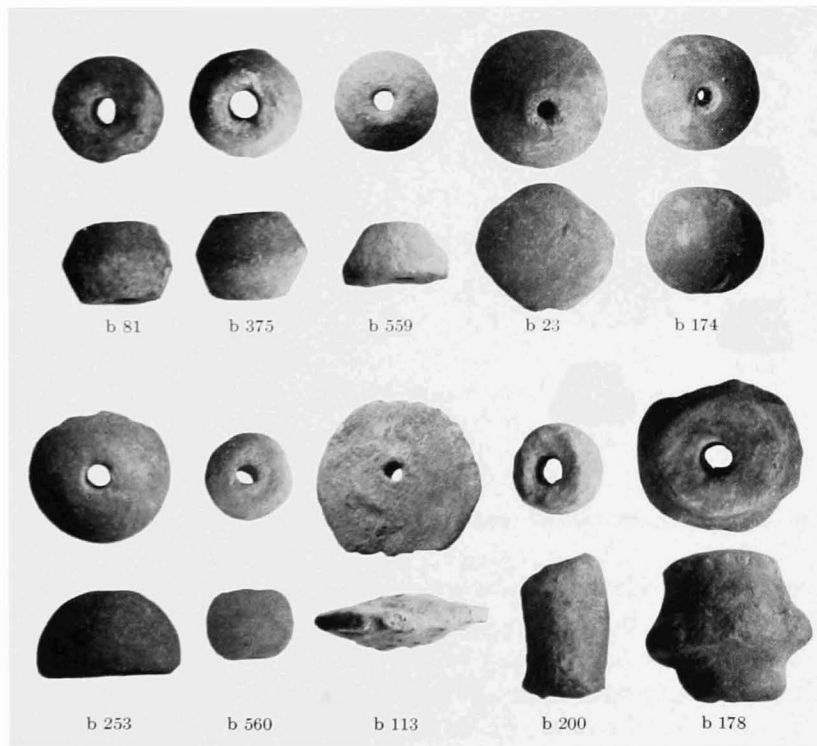


FIG. 74.—POTTERY SPINDLE WHORLS FROM MOUNDS B, C, AND D. TOP AND SIDE VIEWS. SCALE, 1:2

STONE

The typical stone whorl of Alishar V is truncated conical, either plain or ornamented with incisions encircling the side and often the base. In addition, biconoid, globular, semiglobular, oval, and discoid whorls occur on Mound A. The collection from Mound A (Figs. 75-78) is arranged according to the scheme of the pottery whorls in order to show the uniformity of

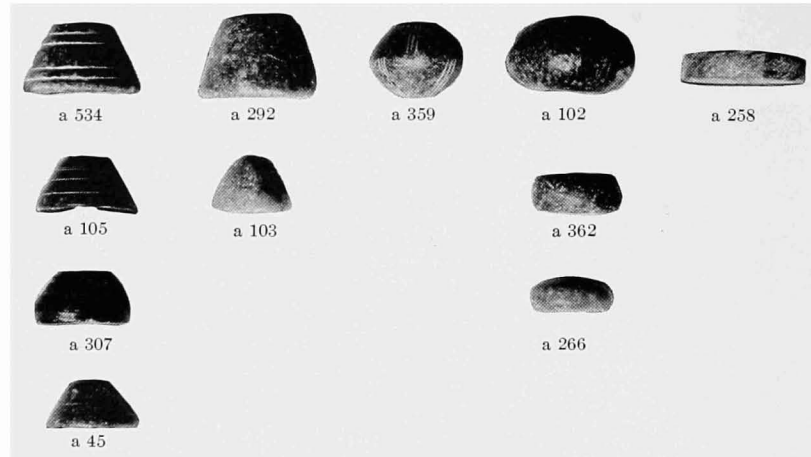


FIG. 75.—STONE SPINDLE WHORLS FROM LEVEL 2 ON MOUND A. SCALE, 3:5

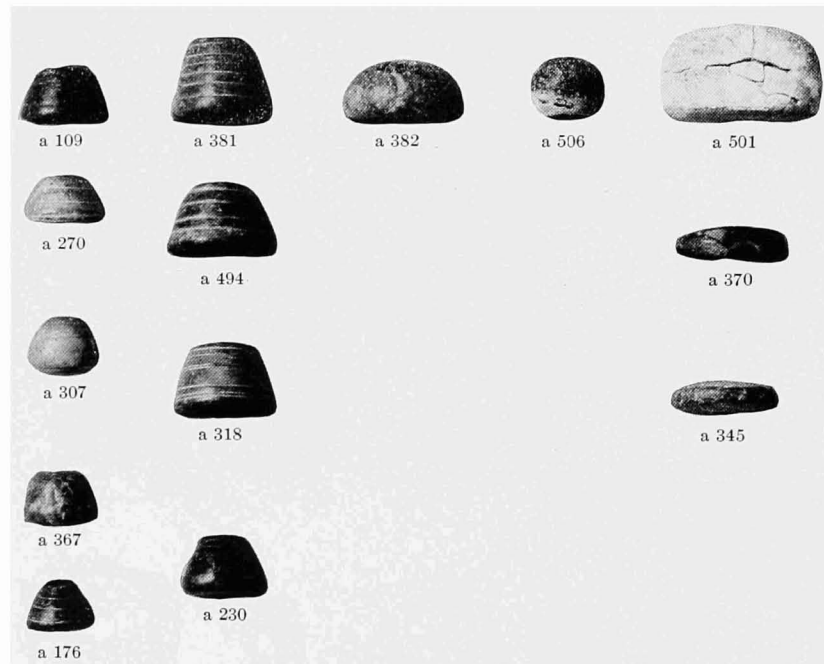


FIG. 76.—STONE SPINDLE WHORLS FROM LEVEL 2-3 ON MOUND A. SCALE, 3:5

the principal type and the relative frequency of the various shapes in each level. The material is serpentine as a rule, but limestone(?) also is used. The colors are black, gray, light gray, grayish green, purplish brown, and bluish white. No. a 469 from Level 3 (Fig. 77) is made of a soft, brittle, white substance. Whorl a 359 (Fig. 75), with cross-shaped incisions, though found in Level 2, is, of course, an intrusive specimen from Stratum I.⁵³

⁵³ See *OIP* XIX 50.

The situation in the fortress complex parallels that on Mound A rather accurately, except for the lack of some individual whorl shapes. The series of typical ornamented whorls in Figure 79 includes No. b 62 (F 8, Level 1), with one circle on the base; No. b 211 (F 8, Level 2, low), one circle on the base; No. b 310 (F 8, Level 3), concave plain base; No. b 324 (G 8, Level 3), two circles on the base; and No. b 496 (H 5-6, Level 1), two circles on the base. No. b 872, with two circles on the base, was found among Period VI objects at a depth of 1.50-1.75 in R 6.

The series of typical plain whorls (Fig. 79) includes No. b 162 (G 8, Level 2, high); Nos. b 316, b 369, and b 319 (F 8, Level 3); No. b 541 (I 3, Level 1); and No. b 209 (L 4, Level 1).

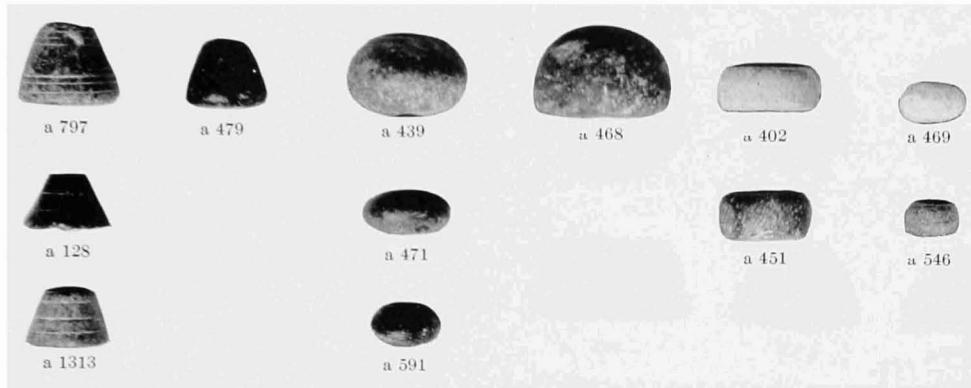


FIG. 77.—STONE SPINDLE WHORLS FROM LEVEL 3 ON MOUND A. SCALE, 3:5

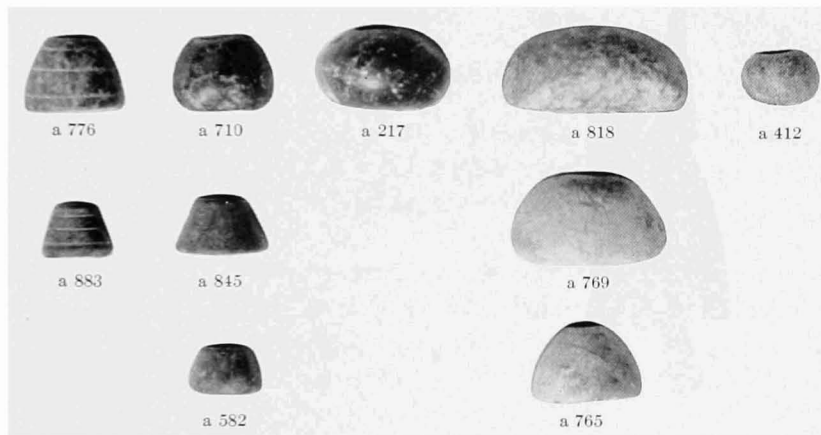


FIG. 78.—STONE SPINDLE WHORLS FROM LEVEL 3-4 ON MOUND A. SCALE, 3:5

FIGURINES

Only a few figurines were found in Stratum V. No. b 143 (Fig. 80), a well executed bronze(?) figurine of a dog, was discovered during the removal of Level 1⁵⁴ in G 8. It appears to be solid. After cleaning, the collar and ribs show plainly.

No. a 191 (Fig. 81), a pottery fragment found in Alişar V-VI refuse from Mound A, represents part of the head of a quadruped(?). The muzzle is dark brown, the rest yellowish white. It measures .042×.032×.025. No. a 249 (Fig. 81) was found in dump soil from the top of

⁵⁴ The system of numbering levels has been described on page 5.

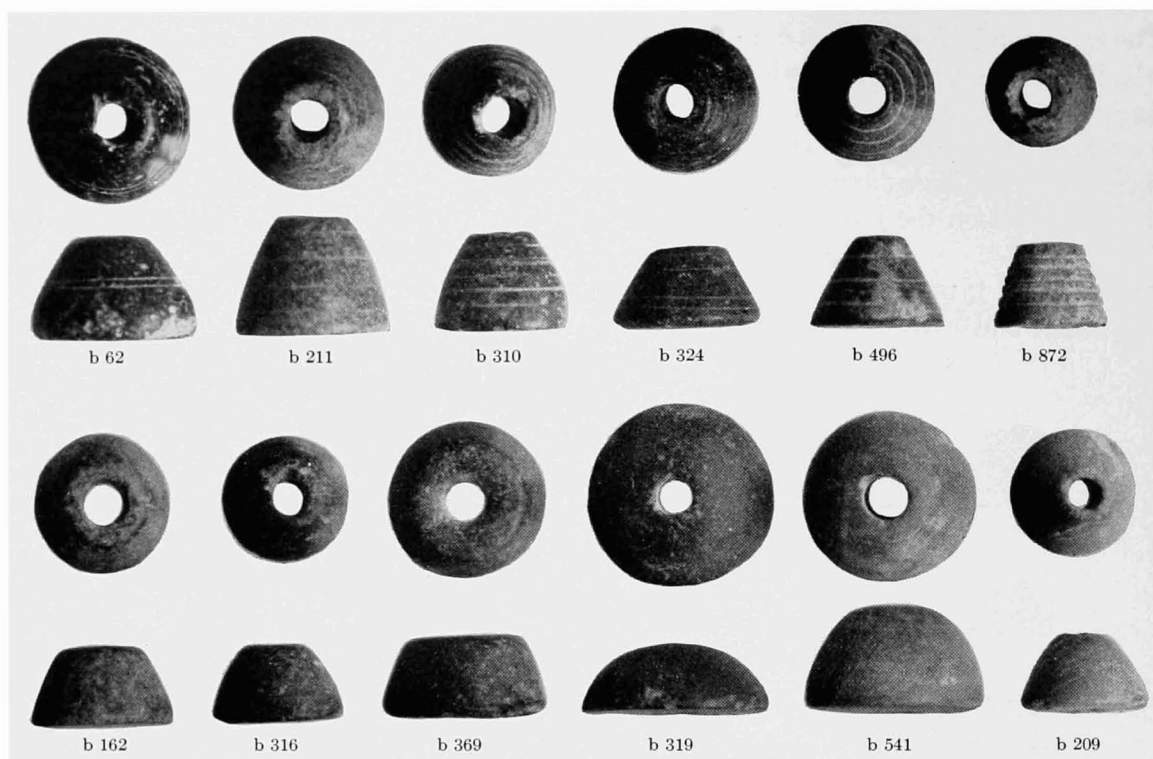


FIG. 79.—STONE SPINDLE WHORLS FROM MOUNDS C AND D AND FROM R 6. TOP AND SIDE VIEWS. ACTUAL SIZE



FIG. 80.—BRONZE(?) FIGURINE OF A DOG. ACTUAL SIZE

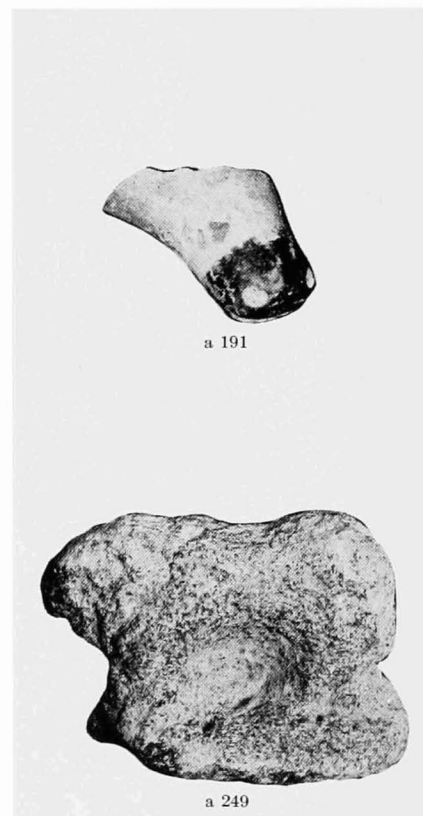


FIG. 81.—FIGURINES OF POTTERY AND STONE

Mound A (Alishar V–VI refuse). This corroded stone figurine represents a quadruped (lion?) on a pedestal. Its dimensions are $.07 \times .037 \times .0485$.

No. a 648 (Fig. S2), found in O 12 at a depth of less than 1 meter, is an unfired clay object resembling a shoe with upturned toe. Its dimensions are $.06 \times .035 \times .045$.

No. a 71 (Fig. S3), found in Level 2–3 refuse from Mound A, is a bone pendant in the form of a bird (cf. No. b 409). It is .0035 thick.

No. a 76 (Fig. S3), from mixed Alishar V and VI refuse in O 11, is a well executed Egyptian eye amulet .004 thick. The frit base is white; the eye design, applied in relief, is dark green. No. a 541 (Fig. S3), a fragment of an Egyptian eye amulet, was found in Level 3 of M 13. It is .0045 thick and is perforated through its long axis. The material is light green frit. No. a 767⁵⁵ (Fig. S3), similar in form and material to No. a 541, was found during the removal of the walls of Level 3 in M 11. It is .0035 thick.

No. a 9 (Fig. S4), a fragment of an oddly shaped angular vessel, was .20 below the surface in O 13, above Section 18. The handle is modeled in the form of a ram(?) with thick horns. The eyes were secondarily attached. The paste is medium and reddish. The exterior is coated with an irregular gray wash or slip on which brown-red and gray-black decoration was applied.

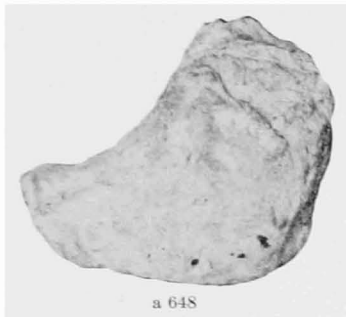


FIG. S2 —SHOE FIGURINE OF CLAY



FIG. S3 —A BONE PENDANT AND EYE AMULETS OF FRIT. ACTUAL SIZE

Brown-red and gray-black dashes alternate on the horns, and gray-black circles inclose the eyes. Near the lower edge of the sherd is a plant design with leaves and a bud. The specimen is unique and may have been imported. According to the find-spot it may be somewhat more recent than Period V.

Sherd b 2594 (Fig. S4) comes from a layer 0–.40 deep in J 33. The head of an animal in low relief served as a handle. The paste is medium with light gray core and light brown surface covered with a brown-red slip. Light buff panels are decorated with dark brown lines. The upper edge of a decorated panel is visible at the fracture. Since Vessel b 2542 of Alishar IV was found at about the same depth in this plot, the present specimen may possibly belong to Stratum IV, though we are inclined to consider it an Alishar V object on account of its panel decoration.

No. b 2 (Fig. S4), a fragment of a zoöomorphic vessel, was low in Level 2 of F 14. It seems to represent a horse, though the head is rather short. The ears, originally erect, are broken. The chest merges into the broken legs. Between the legs is a perforated protuberance, apparently a spout. The gray paste is coarse to medium, with stone particles. The surface is gray and brown. The exterior is smooth where it has not been corroded.

Sherd b 166 (Fig. S5), found high in Level 2 of G 8, has a medium, gray paste. The interior is grayish brown. The exterior is painted brown and creamy white. The relief ornamentation (.006 high) shows the posterior parts of two quadrupeds (oxen?). The animal in front is brown, whereas the legs of the animal behind and almost hidden by it are painted white. What ap-

⁵⁵ The object numbered a 767 in *OIP* XIX 55 is really No. 1944, described in *OIP* VII 38.

THE ALISHAR HÜYÜK, 1928-29



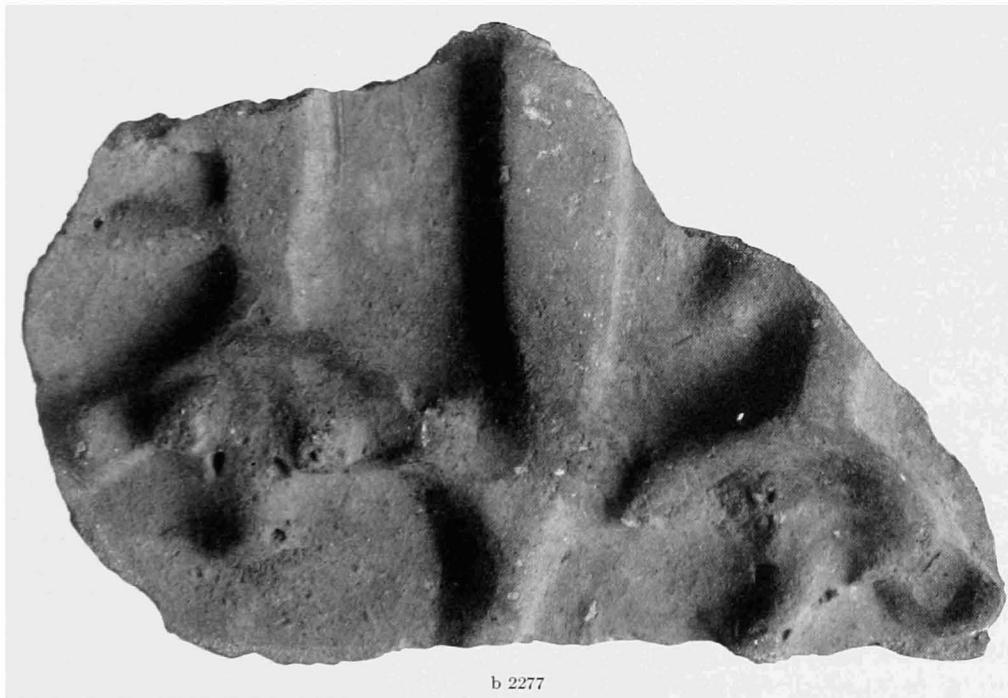
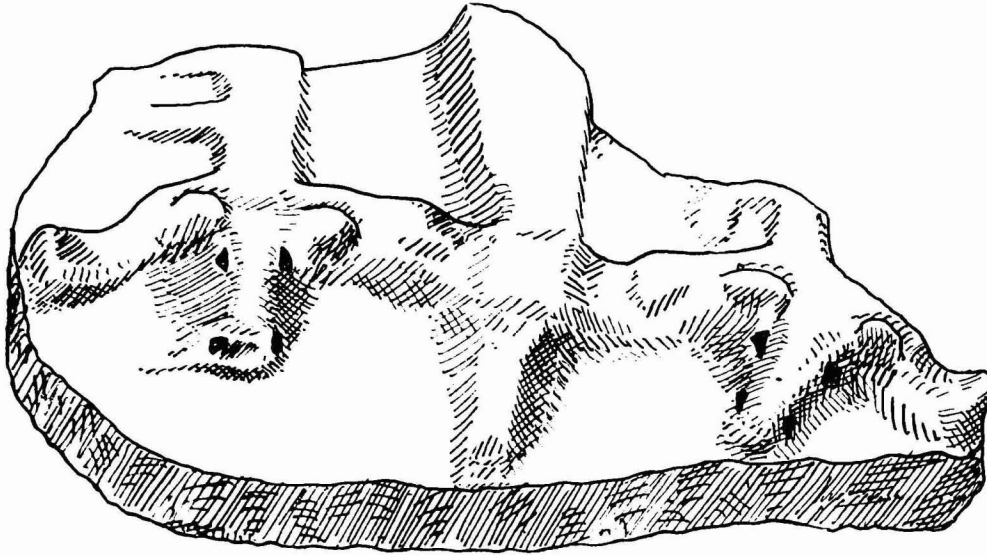
FIG. 84.—VESSEL HANDLES AND A SPOUT IN ANIMAL FORM. SCALE, 1:2



FIG. 85.—SHERD WITH RELIEF ORNAMENTATION. ACTUAL SIZE

pears to be the end of the tail of the first animal may represent some other object continued beyond the fracture. The joints are marked by knobs.

Sherd b 2277 (Fig. 86) may belong to Alishar VI rather than to Alishar V, since the find-layer in DD-EE 10 showed remains of both periods. The light brown paste is coarse to medium



b 2277

FIG. 86.—SHERD WITH RELIEF ORNAMENTATION. ABOUT ACTUAL SIZE

and contains small stone particles. The surface is light brown with some red-brown patches. The relief ornamentation, representing two oxen under a yoke attached to a cart pole, is interesting. Although the animals are viewed from above, their legs show laterally.

SEALS

The collection of seals from Stratum V (Fig. 87) is small. It consists of stamp seals, made of serpentine and rock crystal, and of one seal impression on clay.

No. a 184 from Level 2⁵⁶ on Mound A is a serpentine stamp seal with a pattern resembling those of Period III. The distance from its find-spot to the top of Stratum III is too great to permit the assumption that the object migrated to Stratum V because of building activities

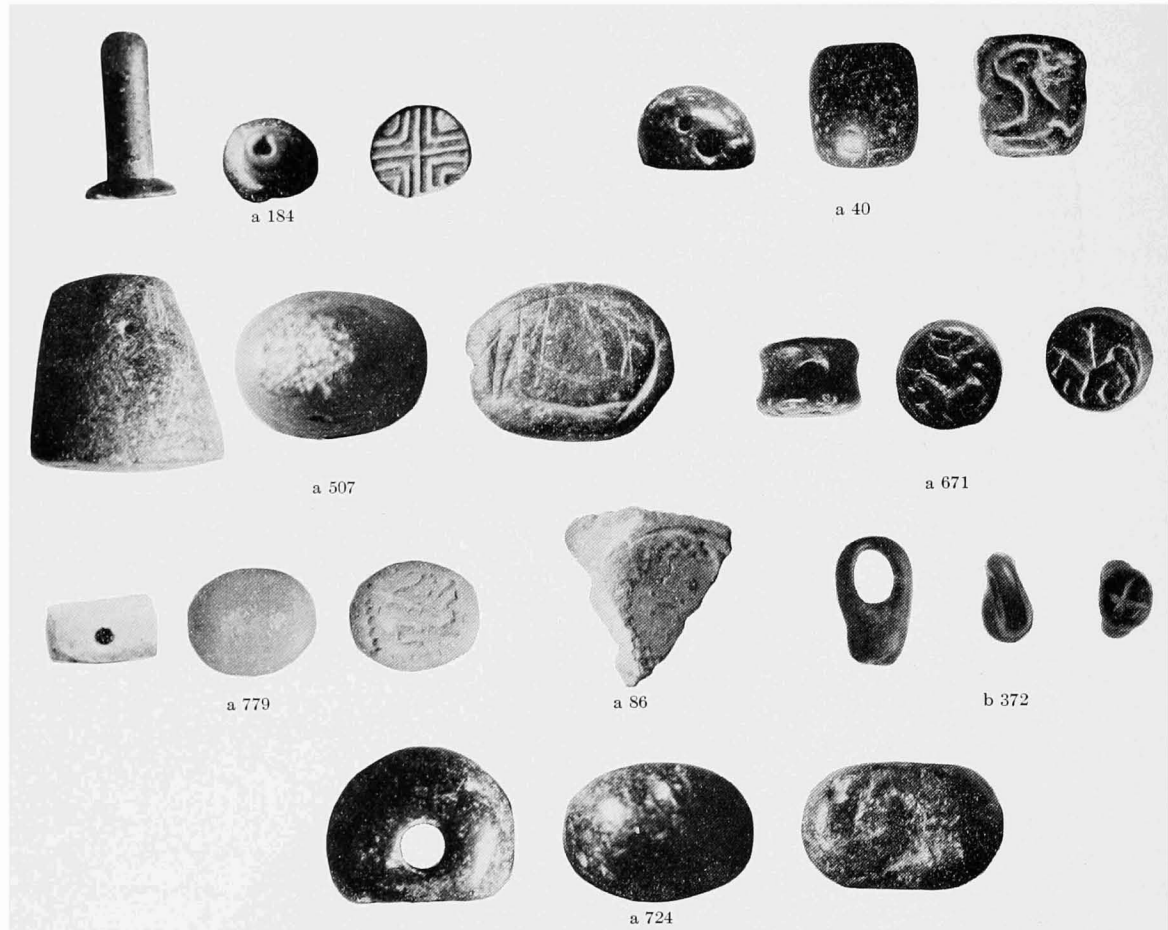


FIG. 87.—STAMP SEALS AND BULLA a 86. ACTUAL SIZE

etc. Perhaps it was found and re-used during the later period. On the other hand, the pattern may have persisted from Period III. No. a 40, from Level 2 on Mound A, is of serpentine. Two cross-shaped incisions occur a little above the base of the seal, which bears a bird(?) pattern. No. a 507 (M 12, Level 2-3) is a truncated cone of serpentine, with an unfinished perforation. The base is slightly convex and shows traces of a design.

No. a 671 (M 13, Level 3-4) may be either a seal or an amulet. The black serpentine disk is horizontally perforated. On one side is represented a highly conventionalized animal with a branch(?) above it. On the other side there seems to be a bird above a similar animal. No. a 779 (N 12, Level 3, low) is a scaraboid of rock crystal, perforated through its long axis. The pattern represents a crouching winged sphinx with a high headdress (cf. Vessels a 518 and a 824).

⁵⁶ The system of numbering levels has been described on page 5.

We were surprised to find a Sassanian seal,⁵⁷ No. a 724, in Level 3-4 of M 13. Almost the only explanation of its occurrence about 2 meters below the point where it would be expected to appear is the possibility that it was carried down by the digging of a pit. This serpentine stamp seal has a large perforation through its compressed sides. There are traces of patterns on the back(?) and on the oval sealing base.

No. a 86, associated with the top refuse of Stratum V in M 12, is a clay bulla bearing the impression of a stamp seal. The pattern shows a double twist encircling faint hieroglyphs.

No. b 372 (F S. Level 3), the only stamp seal found in the fortress complex, is of grayish brown serpentine with polished surface. Two crossed lines are irregularly incised on the slightly oval sealing base.

METAL OBJECTS

Many types of Alişar V metal objects are known to us from preceding periods. Spindle-shaped points (including small arrow points), spatulate points, bracelets, rings, and pins of bronze or copper persist from the earliest periods. The arrowhead of Stratum IV is continued,

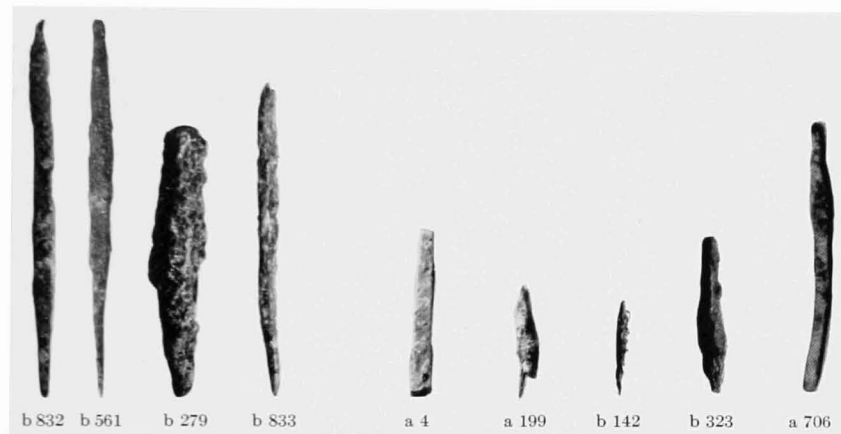


FIG. 88 —SPINDLE-SHAPED POINTS OF BRONZE OR COPPER. SCALE, 2:3

though somewhat modified, and new types appear. A long awl-shaped object seems to be characteristic for Alişar V. An extremely puzzling phenomenon is the almost total absence of the needle, frequent in Strata II and IV. The fibula, which appeared first in Stratum IV, or perhaps in Stratum III, is continued and elaborated in Stratum V.

A few lead rings of the type first employed by the Alişar II people and some lead repair ties were found.

Iron objects seem to increase in number. Weapon heads closely resembling Alişar IV specimens form a large percentage of the iron objects. Blades are somewhat modified from Alişar IV forms. The battle(?)-ax appears for the first time. Rings include some finger rings with bezels.

BRONZE OR COPPER

Large spindle-shaped points (Fig. 88), persisting since Period I, occurred in the fortress complex on Mounds C and D only. No. b 832 (K 3, Level 2-3)⁵⁸ is .004 square at the point of greatest expansion. No. b 561 (G-H 4, depth 1.20-1.50) is .004 square in cross-section, and

⁵⁷ Cf. H. H. von der Osten, "The Ancient Seals from the Near East in the Metropolitan Museum," *Art Bulletin* XIII, No. 2 (1931) pp. 10 f.

⁵⁸ The system of numbering levels has been described on page 5.

No. b 279 (F-G 8, Level 2-3) is .006 square. No. b 833 (K 3, Level 2-3) has a circular cross-section .0035 in diameter. Others have circular or rectangular cross-sections.

Small spindle-shaped points (Fig. 88) were found both on Mound A and in the fortress complex. They may have been used as arrowheads, though they were well adapted for various other uses also. Nos. a 4 and a 199 are from Level 2 on Mound A. Others from Level 2 and from Level 3-4 are of the same type. No. b 142, from Level 2 in L 5, is .0025 square. No. b 323 (G 8, Level 3) is rectangular in cross-section (.0025 × .0035). No. a 706, from Level 3 on Mound A, is a point with one spatulate end.

In Stratum IV the arrowhead became an important "index fossil." The head with fluted triangular point and socket, which appeared first in Stratum IV, persists in the lower layers of Stratum V on Mound A. The points of this type found in Stratum V are somewhat broader than those of Stratum IV. Nos. a 782 and a 827, found high in Level 3-4, represent this type (Fig. 89). No. a 804 from Level 3 has a straight-sided triangular cross-section. In Level 2 on Mound A we found a new type of arrowhead with a socket and one barb. Nos. a 339 and

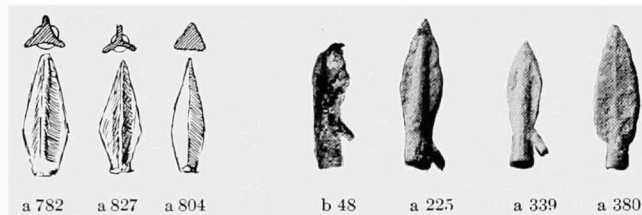


FIG. 89.—ARROWHEADS OF BRONZE OR COPPER. SCALE, 1:2



FIG. 90.—SPATULATE OBJECTS OF BRONZE OR COPPER. SCALE, ABOUT 1:2

a 225 (Fig. 89) are good examples of this type. Arrowhead b 48, identical in form, was found on Mound B (F 14, Level 2-3).⁵⁹ Another new type of arrowhead, represented by No. a 380 (Level 2-3 on Mound A), has a thin lanceolate blade with a central rib and a socket. In addition to these three types, spindle-shaped points may have been used as arrowheads.

Nos. a 83 (M 12, .30-1.00 below the surface, late Alishar V), a 763 (N 13, Level 2-3), and a 461 (M 12, Level 2-3) are spatulate tools (Fig. 90).

We are uncertain about the use of the characteristic awl-shaped objects (Fig. 91) found on Mounds C and D. Some may have been awls. Others may have been knitting or weaving tools or the like. No. b 69 (G 8, floor of Level 1) has one round, tapering end; incised lines encircle the opposite end, which is broken. No. b 490 (K 3, Level 1, late Alishar V) is the longest specimen preserved. It is plain and has one rounded and one spoon-shaped end. No. b 414 (K 3, Level 2) has one rounded point and one spatulate end. No. b 962 (I 3, base level of the fortress) has one rounded, tapering end; the other end is broken off beyond the ornamentation.

No. a 486 (Fig. 91), found in Level 2-3 on Mound A, is .098 long and .003 in diameter. Although it has an eye, its size suggests that it was used as an awl, not as a needle.

⁵⁹ Two similar arrowheads (Nos. K 41 and K 59) with barbs and one (No. K 73) without barb were associated with the stratum of the original builders of the city on Kerkenes Dağ. Two specimens of the fluted triangular (apparently older, but persisting) type also (Nos. K 64 and K 87) were found there. See *AJSL* XLV (1928/29) 269-70.

The puzzling lack of bronze or copper needles⁶⁰ has been mentioned. We are inclined to consider the two specimens found on Mound A as intrusive, since no needles appeared in the fortress complex on Mounds B, C, and D. No. a 59 (Fig. 91) was associated with refuse above the floor of Level 2 in M 13. This would seem to indicate that it may be of Alişar VI (presumably Roman) origin, but needles of bronze or copper were absent from Stratum VI also. No. a 661 (.075 long) was in Level 3-4, though its find-spot was closer to the Level 3 floor.

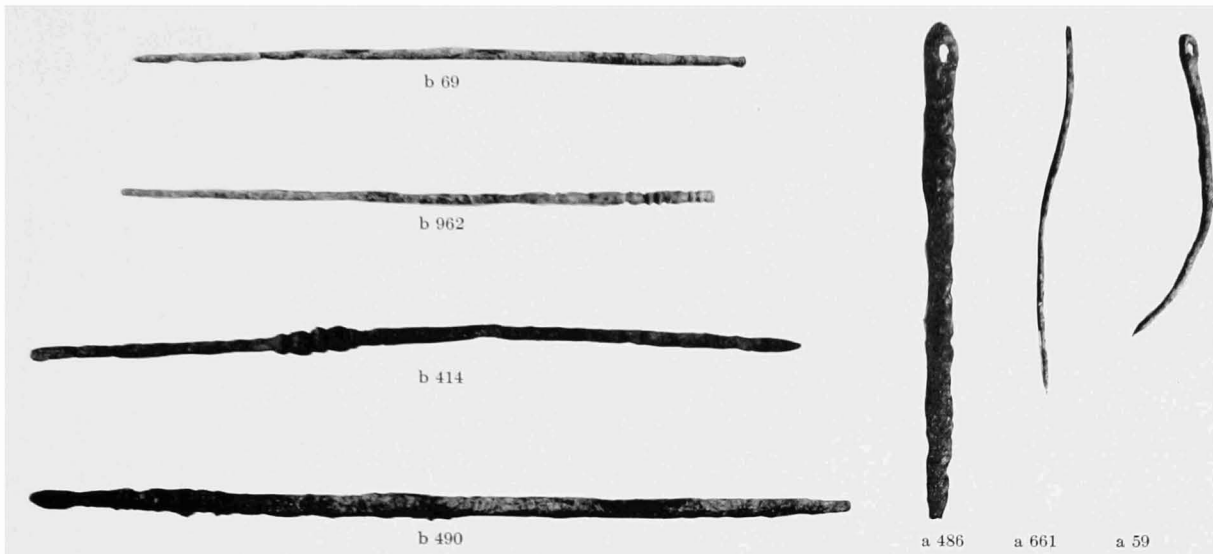


FIG. 91.—AWL-SHAPED OBJECTS AND NEEDLES OF BRONZE OR COPPER. SCALE, 2:3

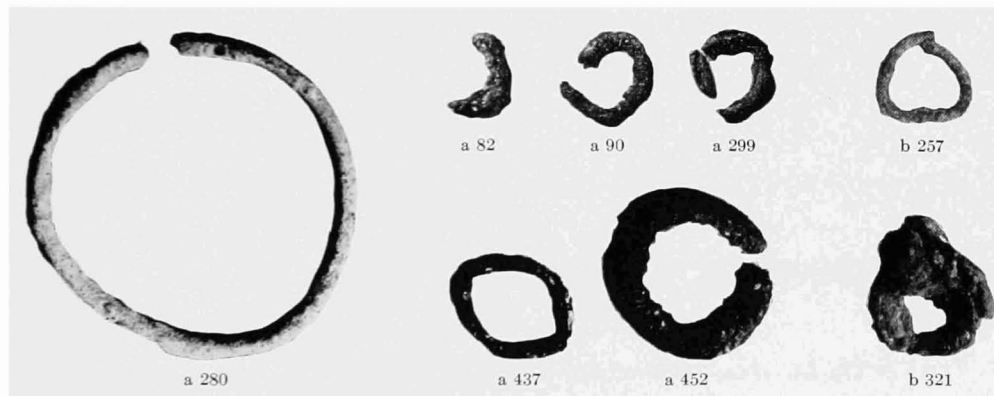


FIG. 92.—BRACELET AND RINGS OF BRONZE OR COPPER. ABOUT ACTUAL SIZE

No. a 280 (Fig. 92), from Level 2 of O 13, is a plain open bracelet. Rings a 82 and a 90, found high in Level 2 (perhaps Alişar VI), and a 299, from Level 2 on Mound A, may have been used as ear pendants (Fig. 92). Nos. a 437 and a 452, from Level 3 on Mound A, are presumably finger rings. They seem to be plain, though ornamentation may be hidden below the oxide. Ring b 321 (F 8, Level 3) is heavily oxidized. There seems to be a fragment of a second ring attached to it. No. b 257 (M 4, Level 1, outside the fortress wall) is plain with somewhat overlapping ends.

⁶⁰ We have found no needles of other materials. It is hard to believe that if there had been any iron needles they would have corroded to such an extent as to leave no traces.

Fibulae (Fig. 93) like those of Stratum IV, with roughly triangular or roughly semicircular bows, some with ornamental grooves at either end, were found in Levels 3 and 3-4 on Mound A. Examples are Nos. a 556 and a 794 from Level 3 and a 863, a 702, and a 787 from Level 3-4. No. a 803, found in Level 3, represents a more elaborate clasp type which is continued in Level 2. The bow is divided into sections of various forms with pleasing effect.⁶¹ Nos. a 14 and a 22 of this elaborate type are tentatively attributed to Level 2, though they were found

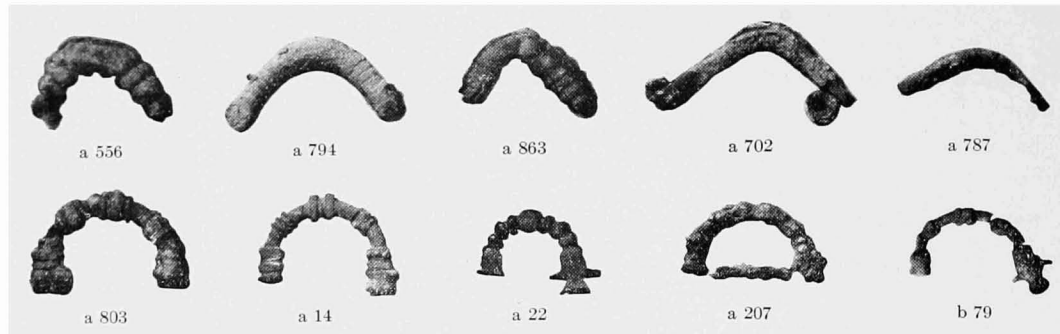


FIG. 93.—FIBULAE OF BRONZE OR COPPER. SCALE, ABOUT 1:2

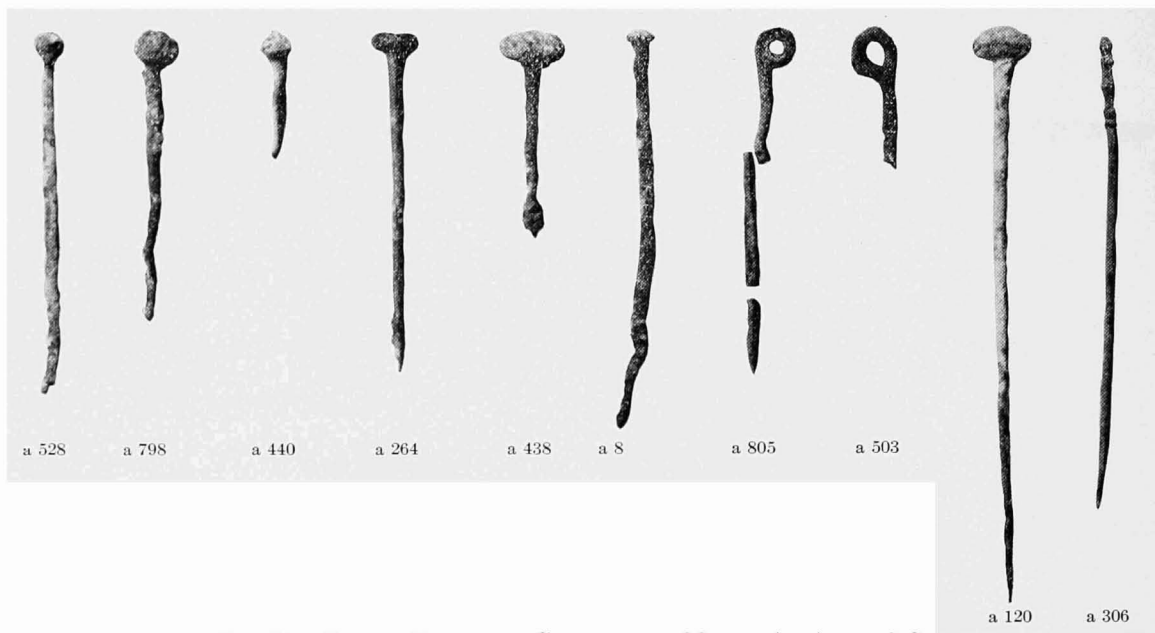


FIG. 94.—PINS OF BRONZE OR COPPER FROM MOUND A. SCALE, 2:3

in refuse mixed with Alishar VI remains. A plain fibula, No. a 207, was found in Alishar V-VI refuse. Fibula b 79 from Mound B (F 14, Level 3) has rectangular protuberances on a round bow and is, therefore, related to the elaborate type.

Pins are, as usual, classified according to head form. There are only two new types, those with ring-shaped and with elaborately beveled heads. Head types found on Mound A are represented by the following examples (Fig. 94): globular, No. a 528 (Level 3); elliptical, No. a 798 (Level 3); conical, No. a 440 (Level 3); discoid, No. a 264 (Level 2); plano-convex, No. a 438 (Level 3) with ornamental grooves below the head and No. a 8 (Level 2, high); coiled, Nos. a 805 and a 503 (Level 3); pyramidal, No. a 120 (Level 2); and elaborately beveled, No. a 306 (Level 2).

⁶¹ Cf. the elaborate bronze(?) fibula from Kerkenes Dağ, *AJSL* XLV 270-71.

STRATUM V

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The following head forms were encountered in the fortress complex on Mounds B, C, and D (Fig. 95): semi-globular, Nos. b 234 (L 4, Level 1-2, outside the fortress wall) and b 917 (I 3, Level 1-2); concavely discoid, No. b 528 (J 3, depth 0-1.00, no Roman sherds); star-shaped, No. b 176 (F 14, Level 1-2), with diamond-shaped cross-section of shaft (.002 \times .003) and a lanceolate point; plano-convex, No. b 212 (F-G 8, Level 2-3); and ring-shaped, Nos. b 339 (L 3, Level 1, high) and b 204 (M 5, Level 2-3). No. b 339 has grooves below the head and a spatulate point. No. b 204 measures .0055 \times .0015 where it is flattened below the head.

In Level 2 on Mound A we found the following miscellaneous objects (Fig. 96): No. a 3, a small disk or lid; No. a 764, a band fragment; No. a 192, a double tube formed by rolling up



FIG. 95.—PINS OF BRONZE OR COPPER FROM MOUNDS B, C, AND D. SCALE, 2:3

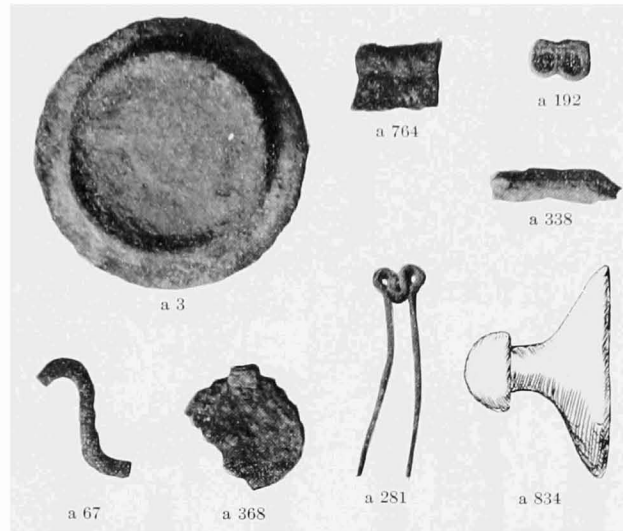


FIG. 96.—MISCELLANEOUS OBJECTS OF BRONZE OR COPPER FROM MOUND A. SCALE, ABOUT 1:2

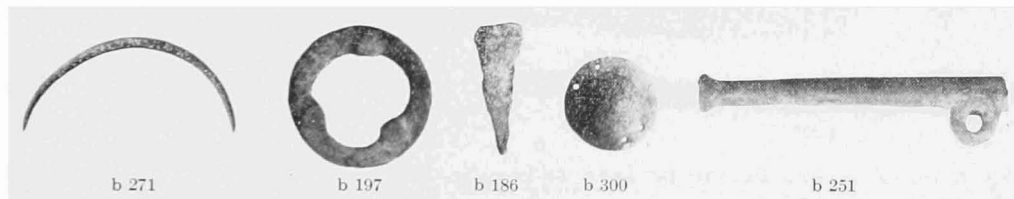


FIG. 97.—MISCELLANEOUS OBJECTS OF BRONZE OR COPPER FROM MOUNDS B, C, AND D. SCALE, 1:2

both ends of a band; No. a 338, a fragment of a tube; No. a 281 (Level 2, low), a hairpin(?); No. a 67, a double hook; and No. a 368 (Level 2-3), a fragment of a discoid object suggesting a belt clasp. No. a 834, perhaps the boss of a shield, was in Level 3-4.

Miscellaneous objects from Mounds B, C, and D (Fig. 97) include No. b 271 (F 14, Level 3c), a crescent with diamond-shaped cross-section, tapering toward the points; No. b 197 (G 8, Level 2), a ring with oval cross-section (.004 \times .007) and three projections; No. b 186 (F-G 8, Level 2), a triangular flat object with the head bent to form a hook; No. b 300 (F 8, Level 2-3), a flanged, semiglobular object with pairs of perforations on opposite sides of the flange (total height .01); and No. b 251 (L 5, Level 3), a fragment of a horse's bit(?).

A bronze or copper dog figurine, No. b 143, has been described on page 59.

LEAD

No. a 177 (Fig. 98), a fragmentary ring, of the type first used by the Alishar II people, was the only lead object found in Level 2 on Mound A. Nos. a 538 and a 600 are similar lead rings from Level 3-4. Nos. a 836 and a 685 (both from Level 3-4 refuse) are fragments of repair ties. No lead objects were discovered in Stratum V on Mounds B, C, or D, although pairs of holes in several vessels found there indicate the use of repair ties.

IRON

A common type of iron weapon head in Stratum V is the spindle-shaped point. Examples from Mound A (Fig. 99) are Nos. a 328 and a 321 from Level 2, No. a 762 from Level 2-3, and Nos. a 850, a 774, a 847, and a 238 from Level 3-4. On Mounds B, C, and D the spindle-

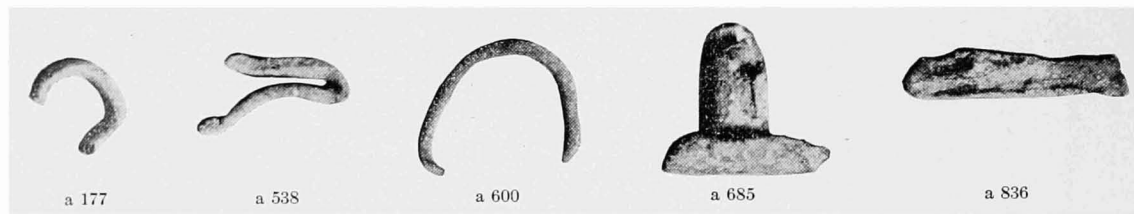


FIG. 98.—FRAGMENTS OF LEAD RINGS AND REPAIR TIES

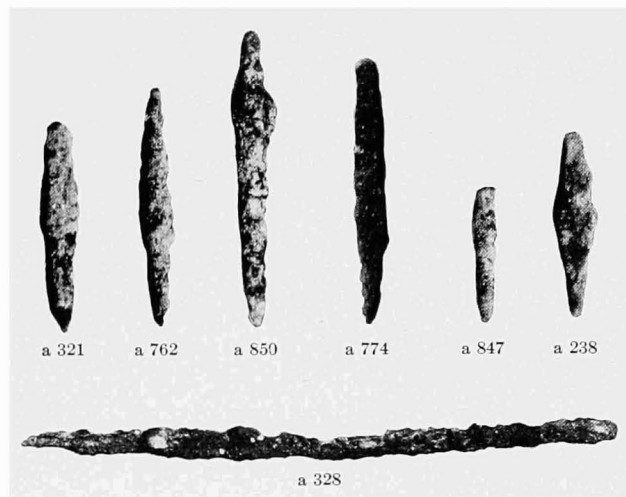


FIG. 99.—SPINDLE-SHAPED POINTS OF IRON FROM MOUND A

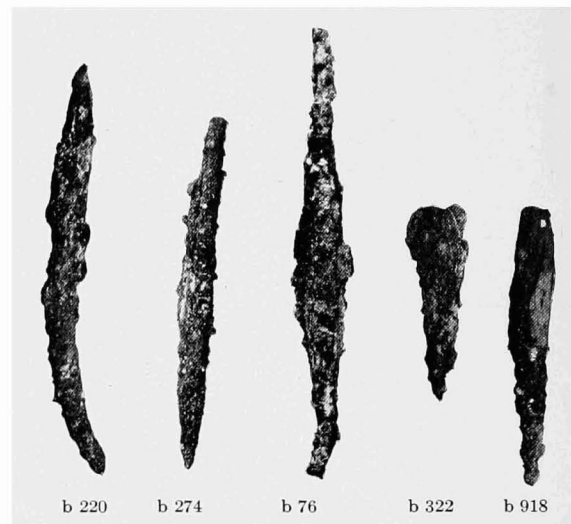


FIG. 100.—SPINDLE-SHAPED POINTS OF IRON FROM MOUNDS B, C, AND D. SCALE, 1:2

shaped point was the most common type. Examples (Fig. 100) are No. b 220 (F 14, Level 3c), .006 square in cross-section; Nos. b 274 (F 14, Level 3c), b 76 (G 8, Level 1, floor), and b 322 (F 8, Level 3), each .007 square(?); and No. b 918 (K 3, Level 3). No. b 918 is particularly interesting because charred remains of its wooden shaft are preserved. These indicate, as was reasonable to assume, that the spindle-shaped points were driven into the shaft as far as the maximum cross-section. The end of the shaft of No. b 918 is .035 from the end of the iron point, and the specimen is .008 square at that spot.

A second type of weapon head is a long or short, more or less lanceolate blade with a tang. Points of this type found on Mound A (Fig. 101) are No. a 324 (Level 2, high), No. a 397 (Level 2), Nos. a 400 and a 796 (Level 3), Nos. a 254 and a 297 (Level 3-4), and Nos. a 820 and a 713 (Level 3-4, low). No. a 1135 (Level 2-3) has a short ovate blade and a long tang.

Weapon points with similar blades from Mounds B, C, and D (Fig. 102) include No. b 144 (G 8, Level 1-2), with a short blade and a long round projection on the tang;⁶² No. b 370 (F 8, Level 3); and No. b 236 (L 4, Level 2). No. b 206 (not illustrated), found high in Level 1 of L 4, is .356 long with a relatively short blade and a tang with rectangular cross-section approximately $.008 \times .011$. No. b 177 (not illustrated), from Level 1-2 in F 14, seems to be the tang (.006 \times .009?) of a similar blade.

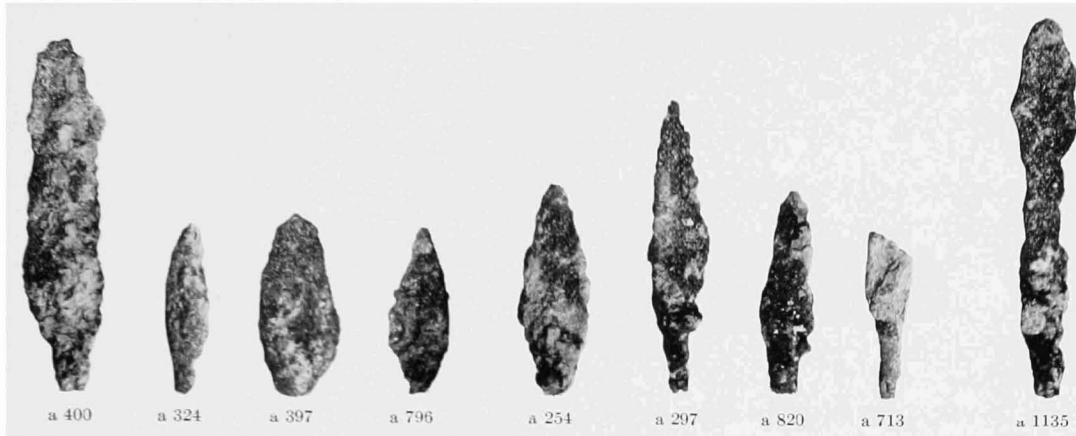


FIG. 101.—WEAPON HEADS OF IRON FROM MOUND A

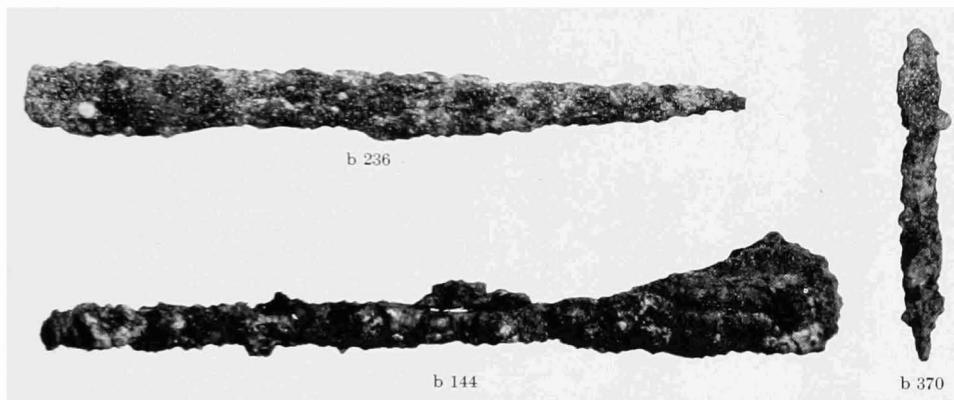


FIG. 102.—WEAPON HEADS OF IRON FROM MOUNDS C AND D. SCALE, 1:2

Two new types of weapon points (Fig. 103) appear in Level 2 on Mound A. One, a long spearhead with socket, is illustrated by Nos. a 141 and a 445. No. b 325 (G 8, Level 3) is a socket fragment of such a point, with remains of wood inside. The other type, represented by Nos. a 375 and a 1147, is an arrow- or spearhead which has a thin diamond-shaped blade and a slender tang. However, several features speak for attributing this type to Stratum VI. No. a 375 was found in dump soil from Mound A with mixed Alişar V-VI remains, and No. a 1147 was found on the mound slope in O 12 in a layer containing *terra sigillata* fragments. Certainly the objects are not earlier than the late phase of Stratum V.⁶³ The lack of oxidation and the total difference in form also suggest the later period.

⁶² Traces of such flanges were repeatedly noticed on the iron spearheads and arrowheads of Stratum V, but in many cases it was uncertain whether they were of oxide or were parts of the original tang.

⁶³ Two almost identical arrowheads (Nos. K 58 and K 86) were found on Kerkenes Dağ (*AJSL* XLV 269-70). Their find-spots suggest that they were used by the original builders of the town, but they may be intrusive from the later (Roman?) stratum.

Blades a 61a and a 317 (Fig. 104) were found in Level 2 on Mound A. It would seem that the cutting edges were at the convex sides of these blades. Blades a 817 and a 885 were found in Level 3-4. The better preserved specimen, No. a 817, has the cutting edge at the concave side of the blade. The handle end is rectangular. Four specimens from Mounds B, C, and D

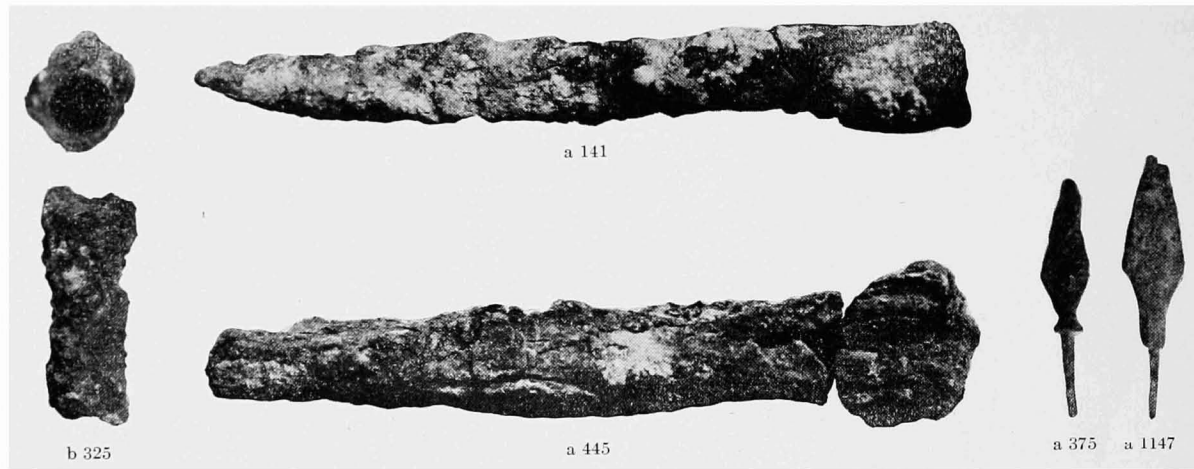


FIG. 103.—WEAPON HEADS OF IRON. NEW TYPES FROM LEVEL 2. SCALE, 1:2



FIG. 104.—IRON BLADES FROM MOUND A. SCALE, ABOUT 1:2



FIG. 105.—IRON BLADES FROM MOUNDS B, C, AND D. SCALE, 1:2

are illustrated in Figure 105. No. b 287 (F 14, Level 3-4) is a blade(?) fragment. No. b 187 (F 8, Level 2) has the cutting edge at the concave side of the blade. A fragment of horn(?) found with this object and illustrated with it may be part of the handle. No. b 126 (L 5, Level 1-2) is an unusually broad oblong blade(?), apparently double-edged. It is .005 thick. No. b 878 (K 3, Level 3) is a double-edged fragment with a blunt end.

As far as we know, the iron ax (Fig. 106) appears in Stratum V for the first time at Alişar, although No. a 879 was slightly below Level 3 on Mound A. No. b 315 was found in Level 3 of F 8. The cross-section of its central portion is $.0135 \times .0075$. No. b 445 was in Level 2 of L 4. The cross-section of its central part is $.022 \times .012$. The ax was probably inserted horizontally into a handle. Nos. a 879 and b 445 may have been used as battle-axes, whereas No. b 315 is too small and light to be effective.

No. a 308 (not illustrated), the only iron ring found in Stratum V on Mound A, was high in Level 2. It is a finger ring with an expanding bezel too much oxidized to show a possible design. The finger rings shown in Figure 107 were discovered on Mounds B and D. No. b 275 was found in Level 3c of F 14. No. b 494 (K 3, Level 2) has an oblong bezel $.012$ long. No. b 411 (K 2, Level 3), with a bezel $.025 \times .03$, has the appearance of a seal ring. No. b 410 (K 2, base of fortress wall, outside) has a slightly expanding bezel.

Knucklebone a 265 (see Fig. 129), with a piece of iron wire attached, Pin a 303 with globular head, and Tweezers a 268 (not illustrated), heavily oxidized, were found in Level 2 on Mound

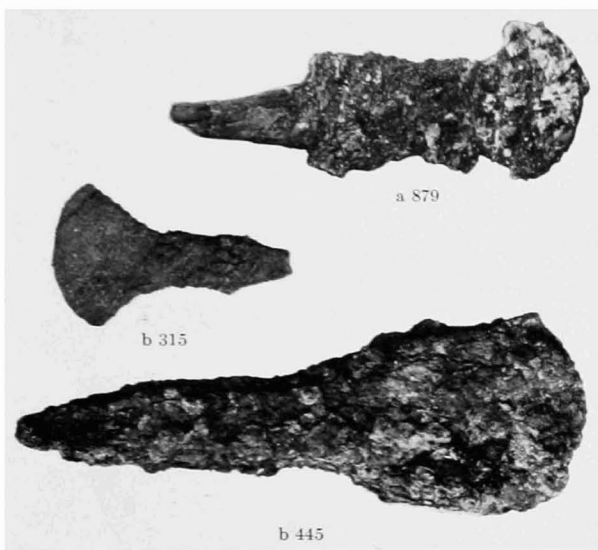


FIG. 106.—BATTLE-AXES OF IRON. SCALE, 1:2

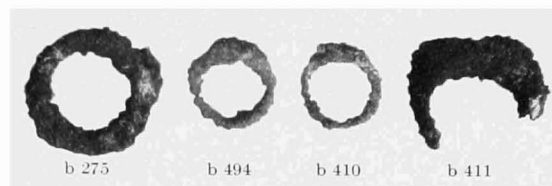


FIG. 107.—IRON RINGS. SCALE, 1:2

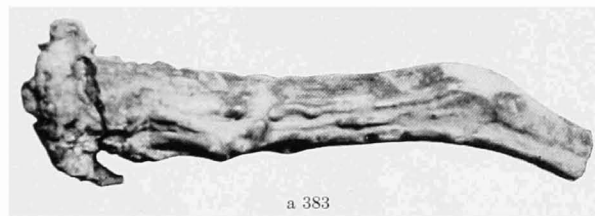


FIG. 108.—FRAGMENT OF HORN WITH AN IRON HEAD

A. No. a 383 (Fig. 108), a fragment of horn with an iron head, and Knucklebone a 462 (see Fig. 129), holding a piece of iron wire, were found in Level 3. Miscellaneous objects from Mounds B and C are shown in Figure 109. No. b 25 (F 14, Level 3), $.005$ thick, has two broken points. No. b 273 (F 14, Level 3c) has two projections near one end. No. b 303 (G 8, Level 2-3) may be a distorted point. No. b 193 (F 8, Level 3), a double hook $.009$ in diameter, may also be a distorted point.

GOLD

The find-spot of No. b 1 (Fig. 110), the only piece of gold from Stratum V, was directly west of the west border of F 14 at a depth corresponding approximately to that of Level 1-2 (above the fortress). The specimen is oval, very thin, and perforated at each end.

STONE OBJECTS

Stone objects are much less likely to change in style than are many other features of the material culture; hence they must be used with caution as chronological criteria. The mace-heads are of a type persisting since Stratum I. Flake knives, celts, polishing stones, pestles,

and small polished stones cannot be distinguished from those of the earliest periods. Whetstones are identical with those from Strata II, III, and IV; and "miniature hammers" are identical with those found in Strata I and III. The Alishar V molds could occur in any stratum, and the same is true for many beads. Stone vessels,⁶⁴ an advanced type of mill, a die, and some bead shapes are the only new forms found in Stratum V. Of these only the mill may be considered an "index fossil."

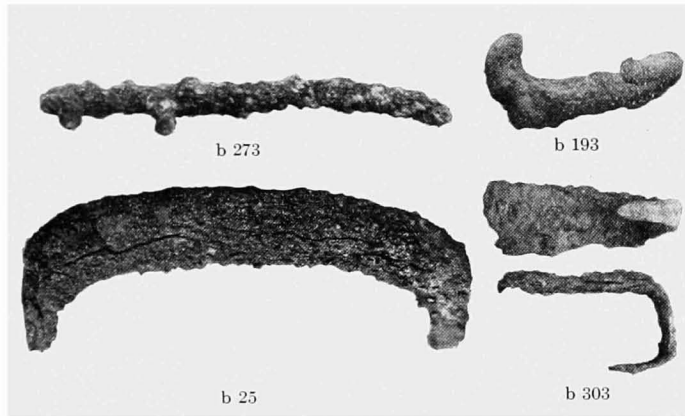


FIG. 109.—MISCELLANEOUS IRON OBJECTS. SCALE, 1:2

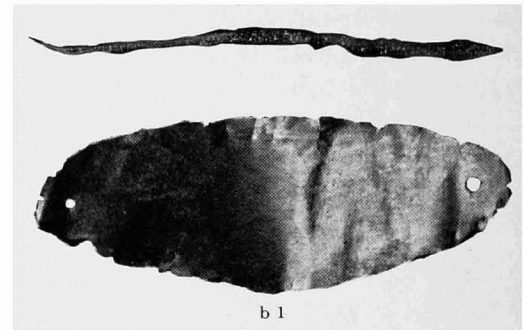


FIG. 110.—PIECE OF GOLD. SCALE, 2:3

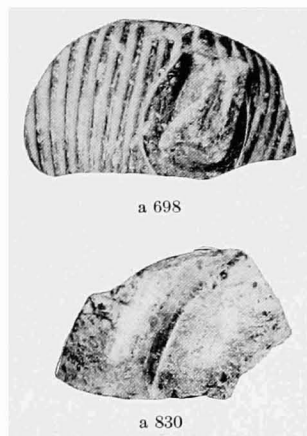


FIG. 111.—FRAGMENTS OF
STONE VESSELS FROM
MOUND A

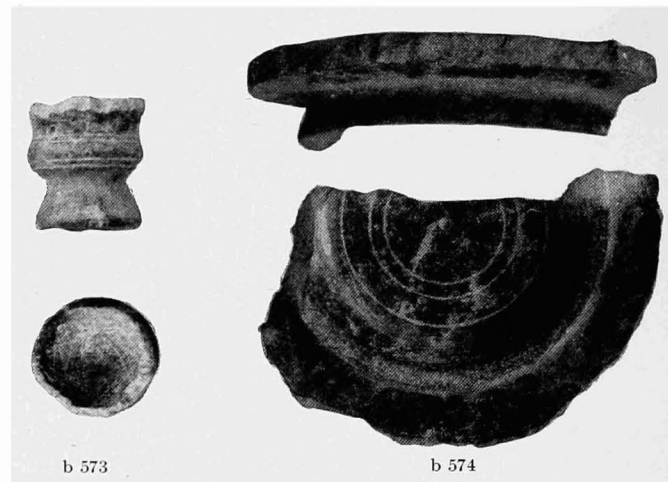


FIG. 112.—FRAGMENTS OF STONE VESSELS FROM MOUND C.
SCALE, 1:2

Fragments of stone vessels are illustrated in Figures 111-12. No. a 698 (Mound A, Level 2),⁶⁵ made of steatite, measures $.08 \times .052 \times .0085$. The interior is plain and polished; the exterior, fluted. The preserved handle fragment has three perforations. No. a 830 (Mound A, Level 3-4) is a highly polished bottom fragment of a steatite vessel. It measures $.0695 \times .044 \times .007$. No. b 573 (F-G 8, Level 1) is apparently the base of a small vessel of polished grayish green serpentine. The foot is solid but concave. No. b 574 (F-G 8, Level 2-3) is of dark green and bluish green stone, highly polished. On a well made ring bottom are incised concentric rings with a centered dot.

⁶⁴ One somewhat earlier stone vessel (No. a 1065), associated with the intermediate level between Strata IV and V, was described in *OIP* XIX 273.

⁶⁵ The system of numbering levels has been described on page 5.

STRATUM V

75

Two fragmentary maceheads found in Stratum V on Mound A may be intrusive. No. a 816 (not illustrated), found high in Level 3-4, is discolored and cracked, apparently by heat. Its conical perforation is .043 high. No. a 1132 (Level 3) is apparently a fragment of a globular macehead with tubular perforation (Fig. 113). No maceheads were found in Stratum V on Mounds B, C, or D.⁶⁶

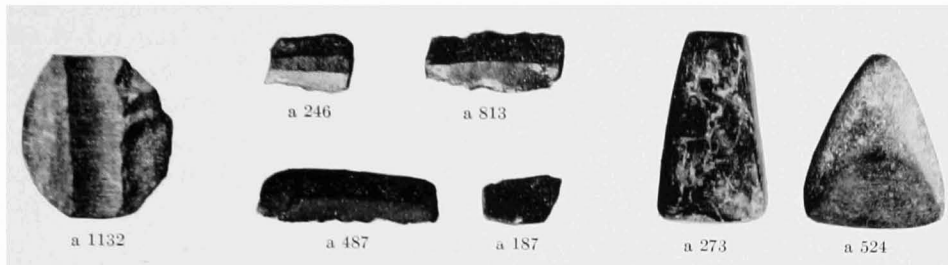


FIG. 113. STONE MACEHEAD, FLAKES, AND CELTS. SCALE, 1:2

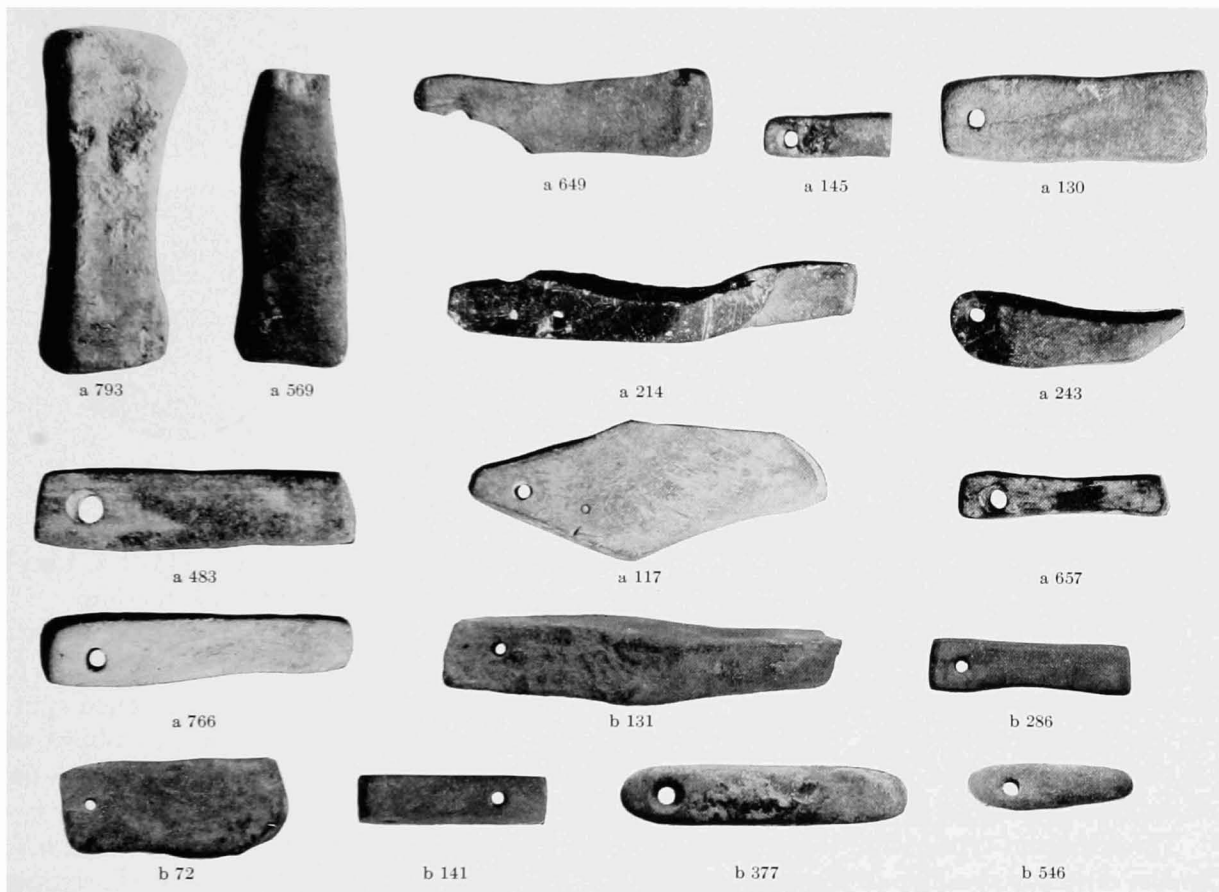


FIG. 114.—WHETSTONES. SCALE, 1:2

Some or all of the flakes (Fig. 113) found on Mound A may be intrusive from Stratum IV, since none was definitely associated with Level 2. We found no flakes on Mounds B, C, or D. Flake a 246, of yellowish chalcedony, and No. a 487, of dark brown quartzite(?), were found in Level 2-3. No. a 813, a brown chalcedony flake, was in Level 3-4. An obsidian fragment, No. a 187, was in Alişar V refuse mixed with some Alişar IV remains.

⁶⁶ But compare No. b 224 (Fig. 115), which may be an unfinished macehead.

Celts (Fig. 113) were found on Mound A only. No. a 273 (Section 6 in Level 2) is of black serpentine with rather sharp cutting edge. No. a 524 (Section 24 in Level 3) is of greenish serpentine, polished in part. We have no doubt that these objects were made during Period V.

Whetstones were frequent in all sections and sublevels of Stratum V. The material is mainly sandstone and slate. Two unperforated specimens, Nos. a 793 and a 569, were found in Level 3-4 on Mound A (Fig. 114). The following whetstones of the usual perforated type were found on Mound A: high in Level 2, Nos. a 649 and a 145; in Level 2-3, Nos. a 130 and a 214; in Level 3, Nos. a 243, well worn by use, a 483, and a 117; in Level 3-4, Nos. a 657 and a 766. In F 14 on Mound B we found No. b 131 (Level 3, low), with its broad sides and parts of its narrow ones polished by use, and No. b 286 (Level 3c) with all surfaces polished. No. b 72, from the floor of Level 1 in G 8, is polished all over by use. On Mound D we found No. b 141 (L 5, Level 1-2), with two perforations (one at each end) in different planes, No. b 377 (K 2, base



FIG. 115.—MISCELLANEOUS STONE OBJECTS. SCALE, 1:2

level), with almost square cross-section at the center of the length, and No. b 546 (I 3, Level 1-2), with oval cross-section, in contrast to the common rectangular or square section.

No. b 643 (Fig. 115) from L 5, Level 3, is a common type of polishing stone, used, apparently, during all periods at the mound. It is roughly oval and polished by use. No. b 644 (L 5, Level 3) is of light grayish white quartzite(?), smooth and globular, with one flattened spot. It may be a hammerstone. No. b 224 (L 4, Level 1) is a highly polished circular object of diorite with a polished depression at the center of either face. It may be a polishing stone for some special purpose or an unfinished macehead.

The advanced type of mill⁶⁷ shown in Figure 116 is at present an "index fossil" for Stratum V. In the center of one side of a roughly rectangular rock is a rectangular depression, becoming conoid toward the base, where there is a somewhat irregular hole. The central depression is connected with two sides of the mill by grooves, one of which is either deeply incised at the end or perforated. The opposite face of the mill, usually somewhat convex, is the grinding surface. The device was presumably employed as follows: The top part of the mill (that here illustrated) rested on a stationary plain millstone with a concave grinding surface. A stick with a pin was fitted into the grooves, the pin being inserted into the hole or incision in one groove. When grain was poured into the central depression, the hole in the bottom admitted only a

⁶⁷ Cf. *OIP* VI 112.

small amount to the space between the grinding surfaces. The amount to be ground at one time could be increased by raising the upper millstone. The stone is heavy, and one would assume that an animal (or a slave?) was employed to rotate the upper part.

Pestle a 316 (Fig. 117) was found in Level 2 on Mound A. It is somewhat bell-shaped and highly polished. No. a 11 from Level 2-3 is also polished.

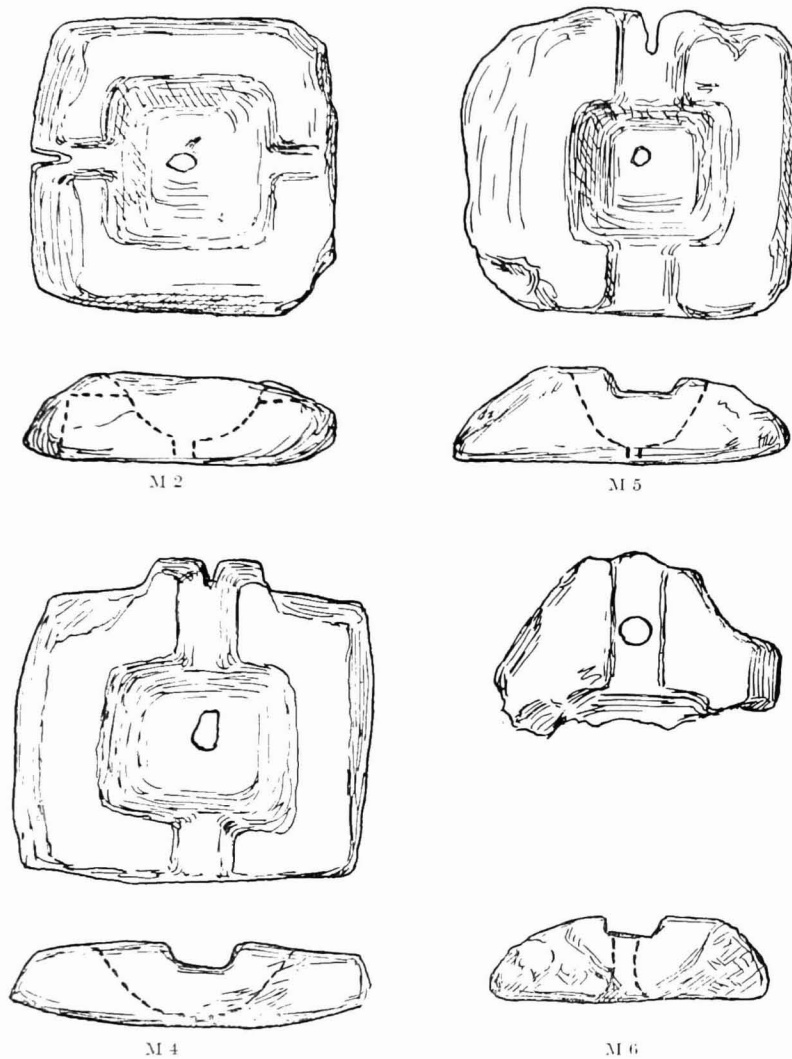


FIG. 116.—ELABORATE STONE MILLS. SCALE, 1:10

Mold b 284 (.85 long), found low in Level 3c of F 14, is of grayish green serpentine(?). It shows parts of two connected grooves (Fig. 118). No. a 652 (.127×.0785×.05), found in Level 3-4 on Mound A, may be a mold fragment, as suggested by the remains of a circular depression.

An interesting serpentine die, No. a 523 (Fig. 119), was on Fireplace 17d in Level 3 on Mound A. The numbers, marked by circles with centered dots, run from two to seven.⁶⁸

⁶⁸ Dr. A. T. Olmstead tells us that at Arehsun (ancient Zoropassus) on the southern bank of the Halys he once purchased a die on which the five had been changed to seven.

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The beads illustrated in Figure 120 came from Mound A. The following specimens were in Alishar V-VI refuse: No. a 178 (.0125×.012), an irregular feldspar bead; No. a 92 (.016×.013×.0035), a flat oval of rock crystal; No. a 158 (.011×.009), brown chalcedony, almost globular; and No. a 153 (.011×.0065), of milky quartz, pyramidal, with a perforation through the apex. From Level 2 come No. a 346 (.015), a globular limestone bead; No. a 196 (.006×



FIG. 117
STONE PESTLES.
SCALE, 1:4

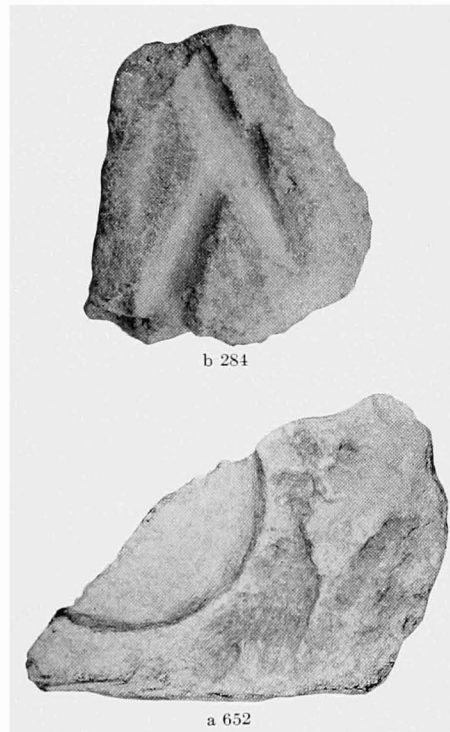


FIG. 118.—STONE MOLDS. SCALE, ABOUT 1:2

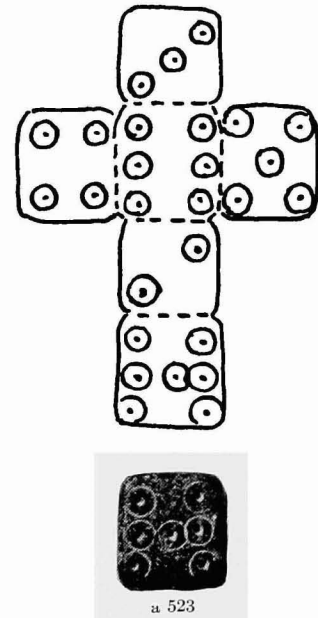


FIG. 119
STONE DIE. ACTUAL SIZE

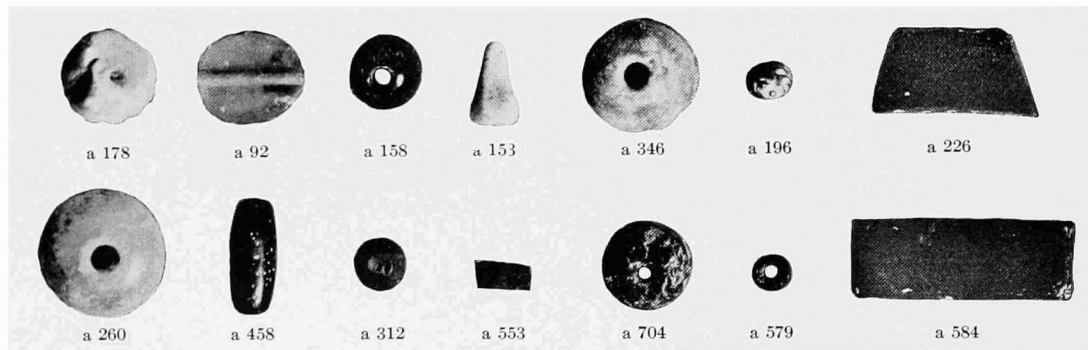


FIG. 120.—STONE BEADS. ABOUT ACTUAL SIZE

.005), of banded agate; and No. a 226 (.021×.011×.003), a trapezoid bead of carnelian, with five vertical perforations. In Level 2-3 we found No. a 260 (.017), a rock crystal globe, and No. a 458 (.0165×.0075), of jasper. From Level 3 we have No. a 312 (.0065×.0065), of reddish jasper in truncated biconical form (that of the typical pottery whorls of this period), and No. a 553 (.008×.0035), a tube of the same material. The following are from Level 3-4: No. a 704 (.014×.0085), of reddish chalcedony in flattened globular form; No. a 579, a small

carnelian disk (.006 \times .003); and No. a 584 (.0285 \times .0095 \times .0055), a peculiar chalcedony bead(?) with six perforations (vertical in the illustration; cf. Bead a 226).

Beads and pendants found on Mounds B, C, and D are shown in Figure 121. No. b 179 (F 14, Level 1-2), of polished gray stone with dark gray veins, has a hexagonal cross-section. No. b 194 (G 8, Level 1-2) is of smoky rock crystal(?), well polished. No. b 1039 (I 3, base level) is of smoky, light gray rock crystal(?). This polished oval pendant has a ledge along one side. No. b 1010 (I 3, base level) is a small ball of dark red carnelian.

Small polished stones (Fig. 122) like those which occurred in great numbers in Strata I and II are Nos. a 272 (Mound A, Level 2), b 128 (L 5, Level 1-2 refuse), and b 196 (G 8, Level 2-3).

Three "miniature hammers" (Fig. 122) were found on Mound A. Nos. a 51 and a 87 were in Level 2, and No. a 660 was in Level 3-4. None has been found on Mounds B, C, or D.

Spindle whorls, a figurine, and seals of stone were described in the sections dealing with those subjects.

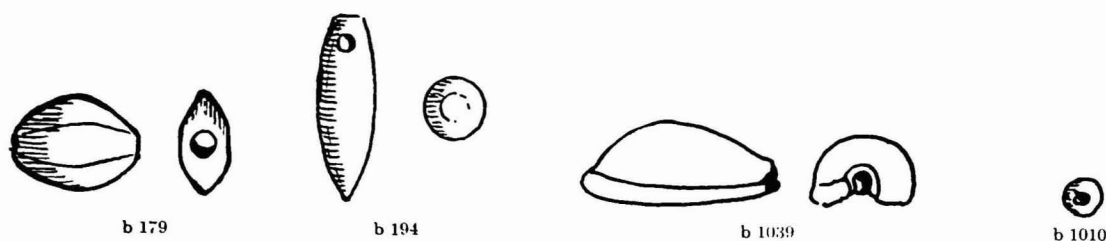


FIG. 121.—STONE BEADS AND PENDANTS. ACTUAL SIZE

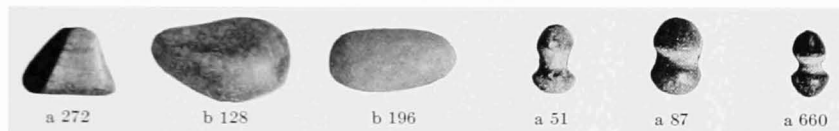


FIG. 122.—SMALL POLISHED STONES AND "MINIATURE HAMMERS." SCALE, ABOUT 1:2

BONE OBJECTS

Though a considerable number of bone objects appeared in Stratum V, there are scarcely any types which have not been encountered in one or more of the earlier strata. For this reason the bone objects of Stratum V are almost useless as "index fossils," whereas in Strata I and II the character and frequency of certain types of bone objects make them valuable chronological clues.

Bone tubes (Fig. 123), frequent in Stratum II, occurred in Stratum V on Mound A and in the fortress complex. Tube a 366 (Level 2-3 on Mound A), a light yellowish brown bone of a bird, has three incisions. No. a 861, yellowish white, polished, with incised ornament, and No. a 857, yellowish brown, polished, are from Level 3-4 on Mound A. No. b 500 (L 3, refuse of Levels 1-3) is rough. No. b 412 (K 3, Level 2) and Nos. b 1059 and b 1060 (I 3, base level) are brown or light brown and polished. No. b 1059, like many of the Alişar II tubes, is serrated at one end.

The most common type of bone point (Fig. 124) has a head marked off by a notch. Examples found on Mound A are (in Level 2-3) No. a 1145, light yellowish brown, rectangular in cross-section, and (in Level 3) No. a 475, brown, smooth but crude, perhaps of horn, and No. a 801, gray-brown, smooth, and crude. Examples from Mound C (F 8, Level 3) are Nos.

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b 366, light brown, and b 373, gray-brown, both smooth but crude. No. a 46 (Mound A, Level 2), light yellowish brown and polished, with two notches below the head, may be a pin. Point a 775, brown and smooth, with the shaft cut to an angle, was found in Level 3-4 on Mound A.

The common bone slip has a perforation at each end (Fig. 125). Examples found on Mound A are No. a 267 (Level 2), gray-brown, rough; No. a 459 (Level 2-3), yellowish brown, smooth; and No. a 822 (Level 3-4), grayish brown, polished. No. b 283, the only slip of this type found in the fortress section (F 8, Level 2), is brown and polished. Two unperforated

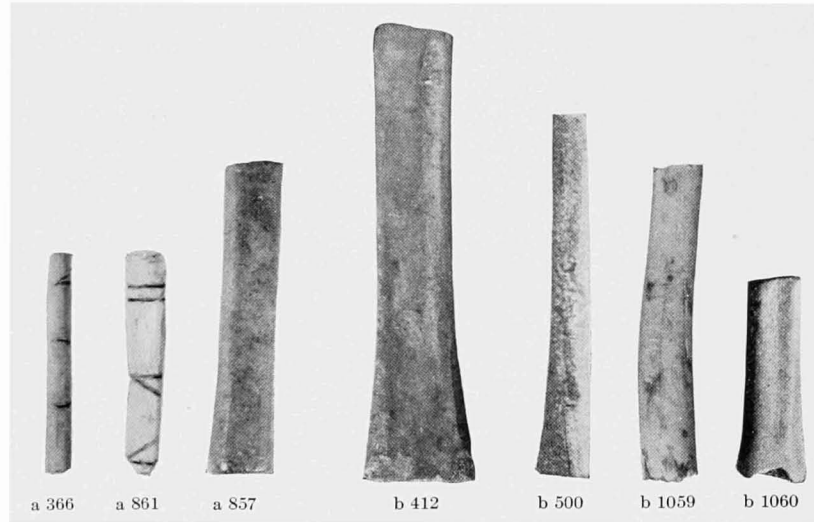


FIG. 123.—BONE TUBES. SCALE, 3:5

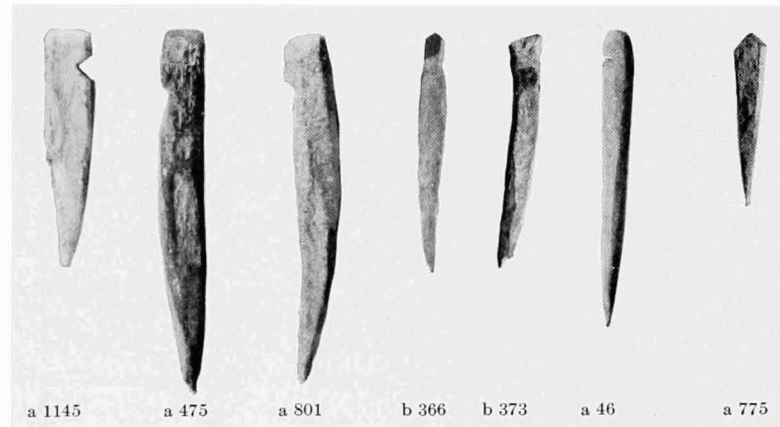


FIG. 124.—BONE POINTS. SCALE, 3:5

slips (Fig. 125) were found on Mound A. No. a 1138 (Level 2-3) is yellowish brown, smooth in places. No. a 334 (Level 2), somewhat charred, shows an incised pattern on a smooth dark brown surface.

Bone awls (Fig. 126) from Level 2 on Mound A are No. a 175, light yellowish brown, polished, with three incised circles with centered dots; No. a 48 (ivory?), light yellowish brown, polished, with two grooves encircling the head end; Nos. a 293, a 148, and a 85, polished yellowish brown fragments; No. a 146, a crude fragment with rough yellowish brown surface; and No. a 81, dark grayish brown and smooth, with only the point wrought. From Level 3 come No. a 800, yellowish white and polished, well made, with rounded head end, and No. a 550, yellowish brown (the point a darker brown) and smooth. No. a 799 (ivory?) is

yellowish white and smooth. Its head is square in cross-section, and crossed incisions leave points at the four corners. The shaft is encircled by three incised lines just below the head. Two awls are from Level 3-4. No. a 854, gray and rough, apparently of horn, is oval in cross-

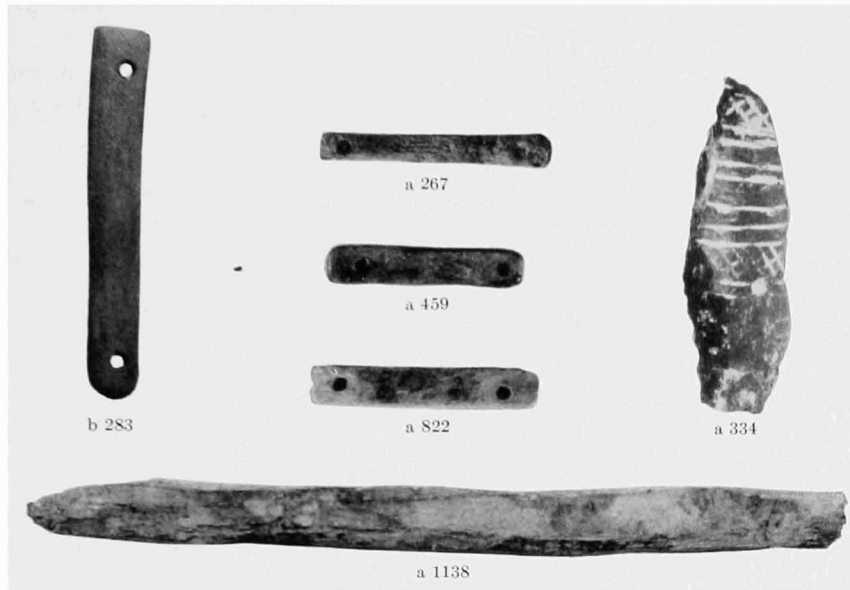


FIG. 125.—BONE SLIPS. SCALE, 3:5

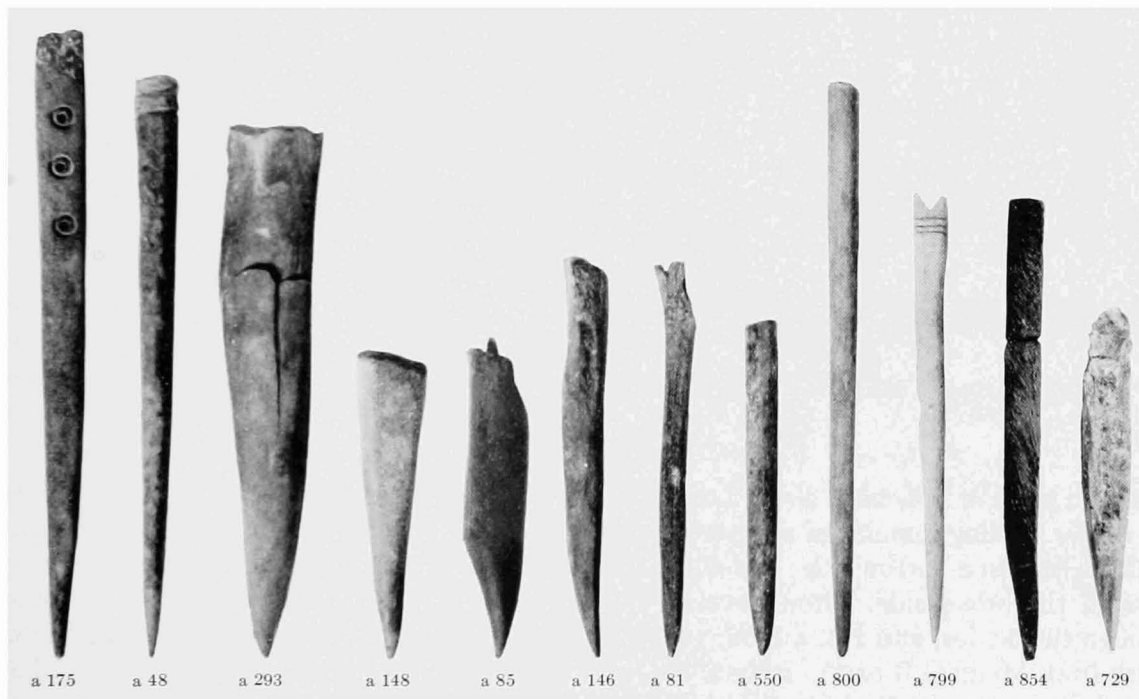


FIG. 126.—BONE AWLS FROM MOUND A. SCALE, 3:5

section. No. a 729 is grayish brown and crude; only its point is wrought. From Mound C (Fig. 127) we have No. b 63 (F 8, Level 1), light brown and smooth, with a perforated head; Nos. b 70 and b 74 (G 8, Level 1), light brown, rough; No. b 302 (G 8, Level 2-3), of horn(?), light brown, highly polished, with a groove across the head; and No. b 367 (F 8, Level 3),

dark brown, polished, with incised ornamentation. Awl b 444 from Mound D (L 4, Level 2) has a somewhat spatulate end, and its point of greatest diameter is midway between the ends.

Two augerlike points (Fig. 128) were found in Level 2 on Mound A: No. a 172, yellowish brown and rough, and No. a 302, yellowish brown and smooth, somewhat irregular. They are of a type characteristic of Stratum II.

Weaving(?) tools from Mound A (Fig. 128) include No. a 539 (Level 3), a polished, yellowish brown fragment, and Nos. a 653 and a 855 (both from Level 3-4), light yellowish brown and polished.

Knucklebones (Fig. 129) from Level 2 on Mound A are No. a 329, perforated through one end, and No. a 265, yellowish brown, with a perforation through the center of the broad side

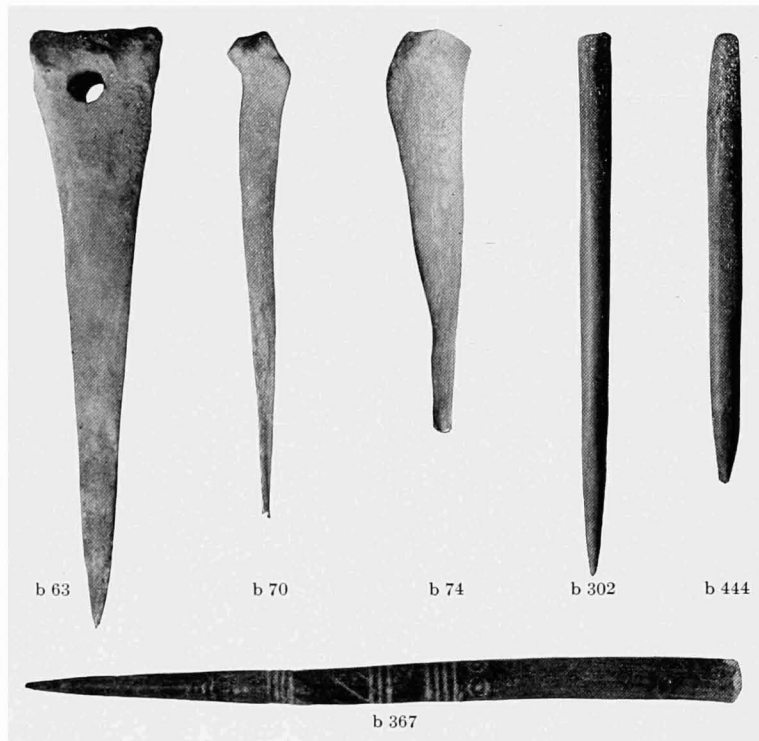


FIG. 127.—BONE AWLS FROM MOUNDS C AND D. SCALE, 3:5

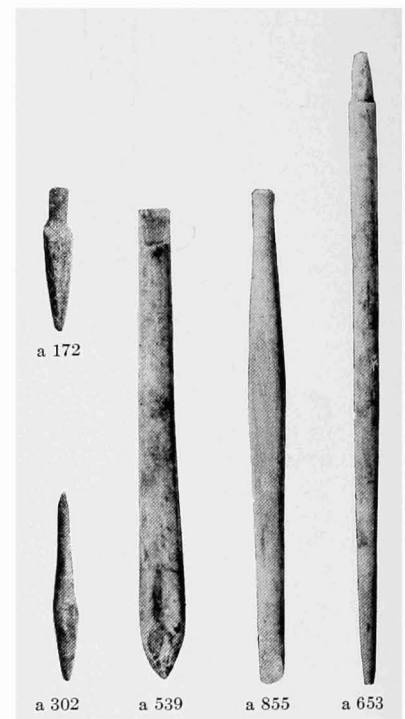


FIG. 128.—AUGERLIKE POINTS AND WEAVING(?) TOOLS OF BONE. SCALE, 3:5

holding a piece of iron wire. From Level 3 come No. a 462, brown, with a perforation through the center holding remains of an iron wire; No. a 482, light yellowish brown, with a centered circle incised on a narrow side; and No. a 1099, light yellowish brown, with three perforations through the broad side. From Level 3-4 we have No. a 700, yellowish brown, perforated through the center, and No. a 1092, yellowish brown, perforated through one end. Knucklebones from Mounds B and C include No. b 27 (F 14, Level 3), brown, with one vertical and one horizontal perforation, and No. b 191 (F 8, Level 2, low), brown, with three perforations.

Bead a 567 (Level 3-4, Mound A) is yellowish brown and polished (Fig. 129).

The following bone pins (Fig. 129) are from Mound A: No. a 80 (Level 2), light yellowish brown, polished, with a slight protuberance at one side as a head; No. a 465 (Level 2-3), yellowish white, smooth, with discoid head; and Pin(?) a 1134, yellowish brown, with polished shaft, perforated through the flattened head. On Mound C (F 8, Level 3) Pin b 409 (Fig. 130) was found. It is light brown and polished and bears on its cubical head a well modeled bird

(hawk?). We should expect to find such a specimen in Stratum II rather than in any other layer.

Two bone disks (Fig. 129) were found. No. a 156 (Mound A, Level 2) is yellowish brown and smooth. No. b 184 from Mound C (F S, Level 2) is light brown and smooth but rather distorted.

No. a 300 (Fig. 131), a yellowish white object with a smooth spatulate end, is from Level 2-3 on Mound A.

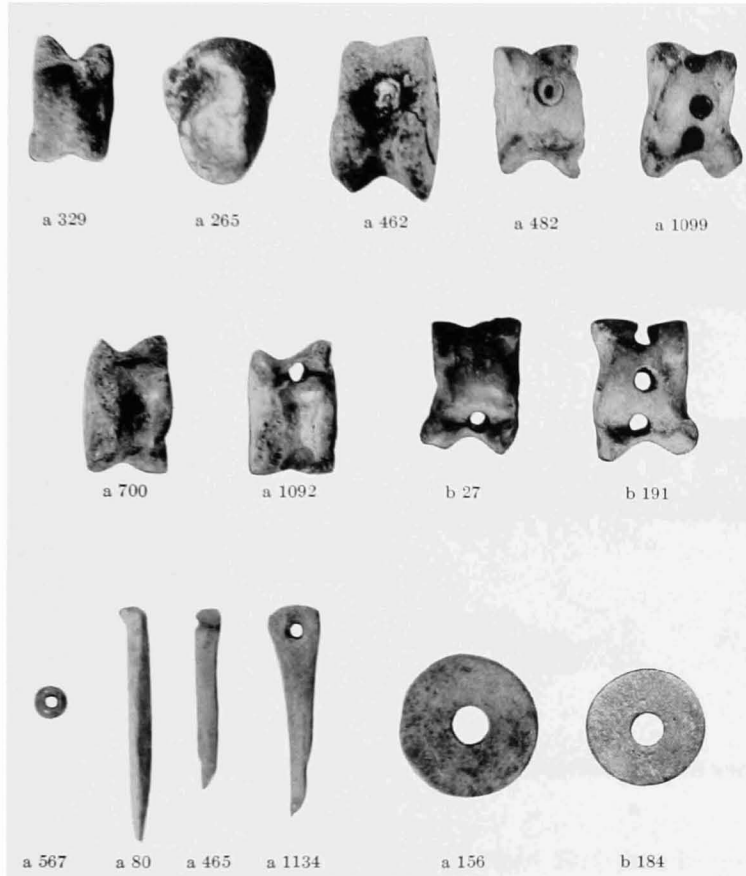


FIG. 129.—KNUCKLEBONES, BONE BEAD, PINS, AND DISKS. SCALE, 3:5

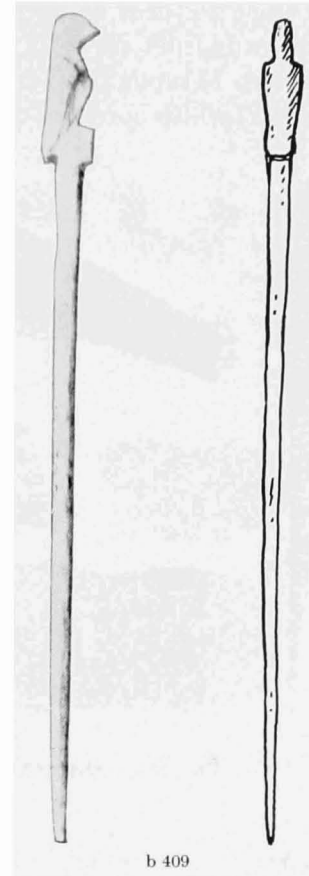


FIG. 130.—ELABORATE BONE PIN. ACTUAL SIZE

A group of miscellaneous objects (Fig. 131) was found on Mound D. No. b 785 (H 3, .50–1.00 deep) is a brown and light brown horn, chipped in places. No. b 547 (I 3, Level 1–2), the jaw of an animal, has dark brown polished sides. The top and base of the jaw have been cut off or abraded. No. b 524 (I 3, base level), brown and abraded, is a vertebra of a large animal. No. b 1007 (I 3, base level), brown and polished, is a slightly concave spatula with three holes near the handle end. Grooves ornament the broken handle, which is rectangular in cross-section. No. b 556 (Fig. 132), a mortuary gift with Skeleton b X4 in L 4, Level 2, is a light brown, fan-shaped object made apparently from the scapula of a large quadruped. One side is polished, and the rough texture of the bone has been partly smoothed on the other side.

A bone pendant in the form of a bird was described on page 61.

GLASS, FAYENCE, AND FRIT

A few eye amulets of frit were described on page 61; but most of the glass, fayence, and frit objects found in Stratum V are beads. Since small objects migrate easily, a bead type can be considered characteristic of a stratum only when it has been found there repeatedly. The Period V collection includes specimens which may have originated during some other period, and such possibilities are mentioned in the individual cases. According to Eisen⁶⁹ eyespots are common on beads of 600-500 B.C., and tubular beads with dragged patterns occur during the 4th century B.C. The Alishar V eye beads and barrel-shaped beads with dragged patterns may belong to these categories.

The beads from Stratum V on Mound A are not available for description. Eye beads of glass⁷⁰ from Mounds B, C, and D are illustrated in Figure 133. No. b 21 (F 14, Level 3⁷¹) once had four(?) white-bordered dark blue eyes on a dark blue ground. No. b 67 (G 8, Level 1, high)

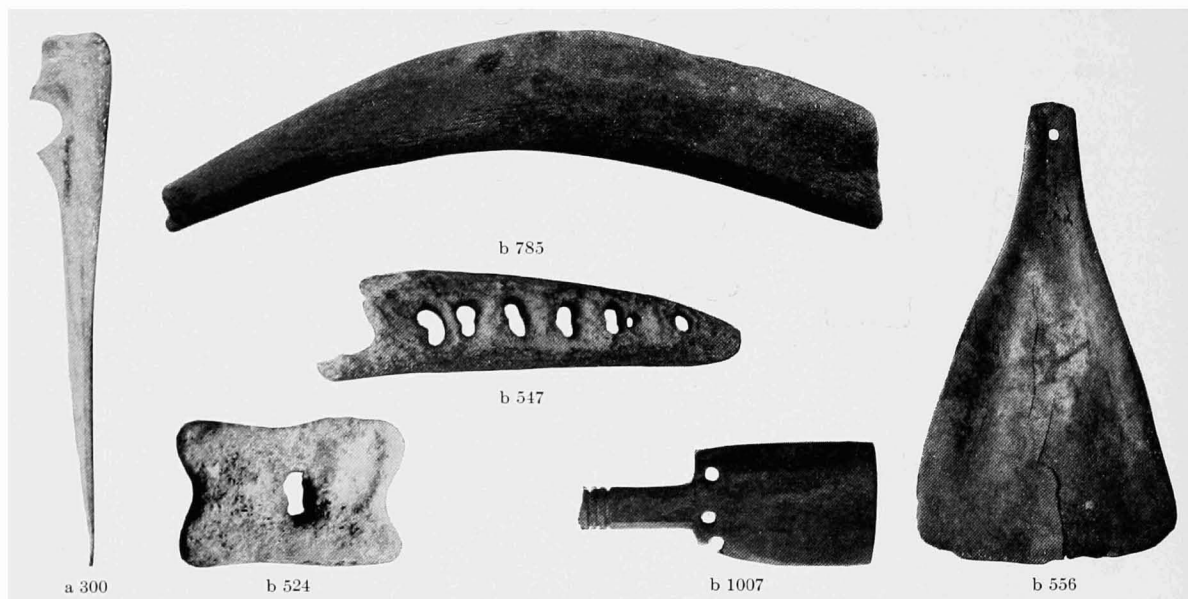


FIG. 131.—MISCELLANEOUS BONE OBJECTS. SCALE, 3:5

FIG. 132.—“BONE PADDLE.”
SCALE, 1:5

had three(?) white- and brown-bordered dark blue eyes on dark blue. It may be later than Alishar V. No. b 195 (G 8, Level 1-2 refuse) is somewhat pear-shaped, with three white-bordered dark blue eyes on greenish blue. No. b 592 (M 5, base level) has white on dark blue. In a pit in the base level of I 3 we found No. b 1061, with six irregular, dark blue eyes with white borders on a dark blue ground, and No. b 1062, which originally had three(?) white-bordered blue eyes on dark blue. No. b 537 (H 3, 0-1.00) had four or five white-bordered dark blue eyes on light blue. It may belong to Alishar VI. Several eye beads were found in test plots. No. b 532 (H 5-6, Level 1) had three or four white-bordered dark blue eyes on dark blue. No. b 2628 (Q 33, 0-.40) has four small white eyes with blue central dots and black borders on a gray ground. A few *terra sigillata* sherds were present near its find-spot, and the bead should perhaps be attributed to Alishar VI. No. b 671 (Y 7, 1.50-2.10) is of a considerably larger type. Its eyes, originally three(?), consist of alternating white and dark gray rings on dark gray.

⁶⁹ Gustavus A. Eisen, *Glass I* (New York, 1927) 84.

⁷⁰ We are not able to tell in every case whether a bead is made of true glass; some appear to be of fayence.

⁷¹ The system of numbering levels has been described on page 5.

This bead is not of true glass, but appears to be of fayence. The association of this bead with Stratum V is doubtful. Alişar IV sherds prevailed, but there were Alişar V fragments and some *terra sigillata* sherds (Alişar VI) also. No. b 824, with three white and gray-brown eyes on gray-brown, was found in X 19 at a depth of 3.80-4.10. Although Alişar II sherds prevailed and some sherds of nearly all other periods were present, including one of Alişar VI, the bead belongs either to Alişar V or to Alişar VI. No. b 2506, found in Complex II of Stratum II (DD 19), is of glazed frit or fayence rather than of glass. It has three yellow eyes on a gray surface. According to its find-spot the bead should belong to Stratum II, but for the present we attribute it to Stratum V.

Barrel-shaped glass beads with dragged patterns (Fig. 134) are No. b 160 (G 8, Level 2, high), with three dragged white lines on dark blue; No. b 192 (F 8, Level 3), with three dragged white lines on dark blue; No. b 95 (L 5, Level 1), with two dragged white lines fading through

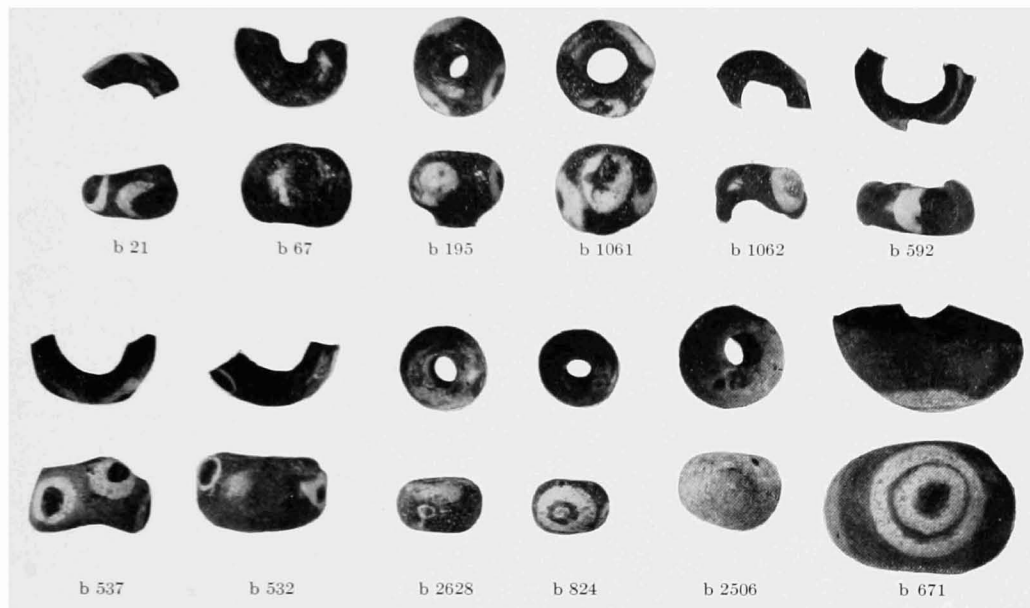


FIG. 133.—EYE BEADS. TOP AND SIDE VIEWS. ACTUAL SIZE

light blue into the dark blue ground; and No. b 498 (H 5-6, Level 1), with two (or three?) dragged white lines on dark blue. No. b 338 (L 3, Level 1, high) is a rectangular glass bead with a pattern of three dragged white lines on dark blue. It may belong to Alişar VI. No. b 223 (L 4, Level 1), a globular bead, has a dragged pattern on a brownish black ground. There are oblique lines in white, orange, light blue, and brown-red, vertical lines in white, orange, grayish white, and brown-red, and a grayish white equatorial line.

No. b 575 (F-G 8, Level 3), a cylindrical bead of light brown fayence(?), has an incised pattern of crossed lines.⁷² We have four scalloped beads (Fig. 134): No. b 22 (F 14, Level 3), greenish blue; No. b 281 (G 8, Level 2), frit(?), light bluish green; No. b 368 (F 8, Level 3), greenish blue, glossy; and No. b 883 (K 3, Level 3), light bluish green.

Plain beads are illustrated in Figure 135. Three are ring-shaped: No. b 219 (F 14, Level 3c), dark blue; No. b 169 (G 8, Level 2, high), greenish blue, with a very small dark blue stain (eye?); and No. b 299 (F 8, Level 2-3), dark gray. No. b 218 (F 14, Level 3c) is of dark green glass. Its cross-section is almost square. No. b 499 (H 5-6, Level 1) is globular, light blue, and glossy. The following beads are light blue: No. b 210 (F 14, Level 3c), slightly biconoid; No.

⁷² An almost identical bead (No. b 2699) occurred in Stratum II. See *OIP* XIX 181.

b 159 (G 8, Level 2, high), irregularly biconoid; No. b 374 (F 8, Level 3), biconical; No. b 208 (L 4, Level 1, high; Alishar VI?), somewhat globular; No. b 1011 (I 3, base level), irregularly biconoid; No. b 538 (H 3, 0-1.00; Alishar VI?), irregularly biconoid. No. b 448 (K 2, Level 3) is a discoid bead of light blue fayence(?). Its perforation is off center.

Of possible beads (Fig. 136), No. b 272 (F 14, Level 3c), of peculiar light blue frit, with two perforations and a simple incised ornament, may conceivably be an eye amulet. No. b 217 (F 14, Level 3, low), of light bluish green glass, looks like a bead, but has no perforation.

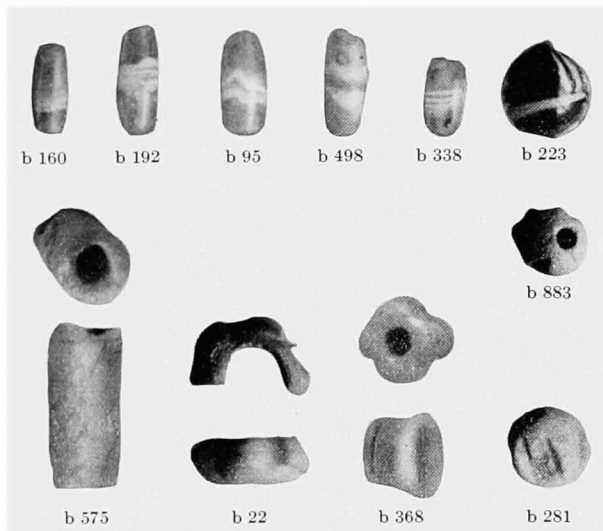


FIG. 134.—ORNAMENTED BEADS OF GLASS AND FAYENCE. ACTUAL SIZE

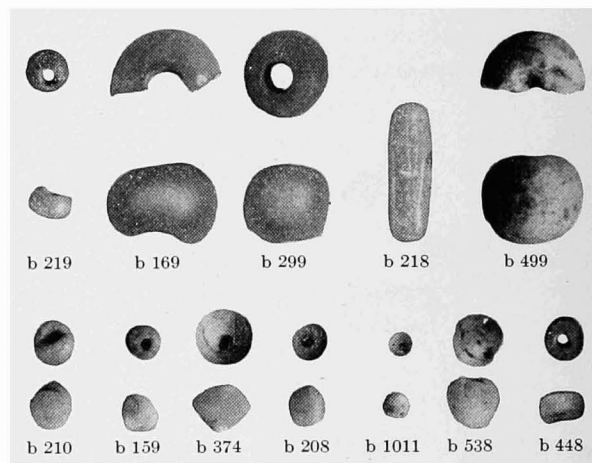


FIG. 135.—PLAIN BEADS OF GLASS AND FAYENCE. ACTUAL SIZE

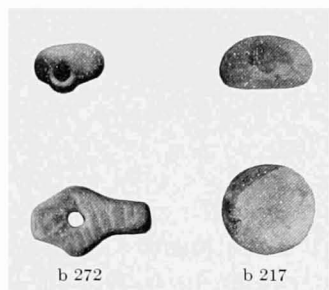


FIG. 136.—BEADS(?) OF FRIT AND GLASS. ACTUAL SIZE

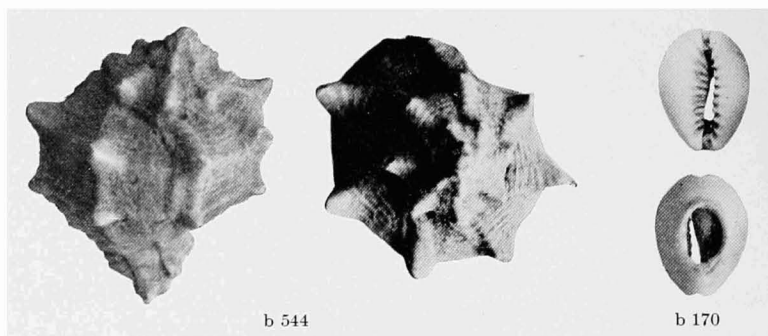


FIG. 137.—SHELLS. ACTUAL SIZE

SHELLS

Shell b 170 (Fig. 137), found high in Level 2 of G 8, is a bead or pendant of a type still in use in Anatolia. It is white and is perforated through the broad side opposite the mouth. A similar shell bead, b 1743, was found in the Roman hoard of Stratum VI (p. 101). The unwrought grayish white shell No. b 544 (I 3, Level 1-2) is of a type very frequent in Stratum II.

DISPOSAL OF THE DEAD

Most of the burials uncovered during the first three seasons were in the town terrace, suggesting that living conditions on the main mound had become so crowded that the dead were customarily taken to the terrace or beyond. The practice of burying the dead within the

settlement seems to have been more common in Periods I and II than at any other time.⁷³ Only four skeletons were found in Stratum V during 1928 and 1929, one on Mound A and three on Mounds C and D. Apparently they had been disposed of by settlers of occupational levels later than those in which they were found. They were buried in plain earth, with legs either contracted or extended. There were very few mortuary gifts.

Skeleton a X1 (Figs. 138-39), of an adult male, was definitely associated with the lower complex of Level 2⁷⁴ on Mound A. When Section 6 was excavated to the bases of its walls, the face and left arm of a skeleton appeared, level with the floor belonging to the lower complex and .25 below the pavement which belonged to the upper complex of Level 2 (cf. p. 9 and



FIG. 138.—SKELETON a X1 IN SECTION 6 OF LEVEL 2 ON MOUND A. FROM SOUTH

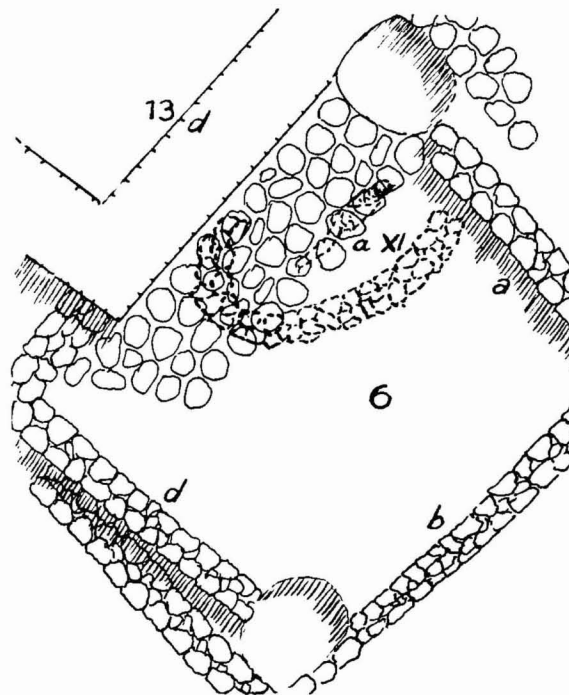


FIG. 139.—DIAGRAM OF BURIAL a X1 IN SECTION 6 OF LEVEL 2 ON MOUND A. SCALE, 1:100

Fig. 5). A curved wall which seemed to inclose the skeleton was found later to be the upper edges of Walls 25a and 23a of Level 3 (cf. Fig. 12). When the pavement had been removed, eight slabs appeared which covered the upper part of the skeleton and reached as far as Wall 6a. The skeleton lay on its left side. Its legs were slightly bent, and its toes were extended to lie almost in line with the leg bones. The right arm was bent, the hand supporting the chin. The left arm was extended beside the body. The hand was curved and touched the left *caput femoris*. The skull, badly crushed, lay to the northeast. Most of the other bones were brittle and broken. There were no mortuary gifts.

Skeleton b X1, that of a mature female, was found in Level 2 of F 8 alongside the southeast wall of Passage 4. Stones of a paved patch of Level 1 had been disturbed by the burial, which may belong to a time later than the end of Period V. The body lay on its right side. The left arm, slightly flexed, lay alongside the body. The right arm was extended, the hand being in front of the pelvis. Both legs were flexed, the right one more strongly; and the feet lay in the

⁷³ Cf. *OIP* VII 32 and *OIP* XIX 72 and 181.

⁷⁴ The system of numbering levels has been described on page 5

line of the vertebral axis. The skull lay to the northeast. Light skull construction and weak supra-orbitals indicated the sex, whereas the fact that the sagittal suture was united and the teeth were badly worn indicated the age. The preservation was poor: most of the long bones were broken, the mandible was powdered, and the clavicle and scapula were pushed inside the crushed cranium. Two small fragments of bronze or copper, perhaps pieces of a garment pin, were found just under the cranium.

Skeleton b X4 (Fig. 140), of a weak male (or female?) adult, was in Section 5 of the fortress on Mound D. It lay 1.50 below the overhanging top of the fortress wall, approximately on the floor of Level 2. It may have been deposited by occupants of Level 1. The skeleton lay on its right side. Both legs were much flexed; the left patella was near the shoulder, the right one

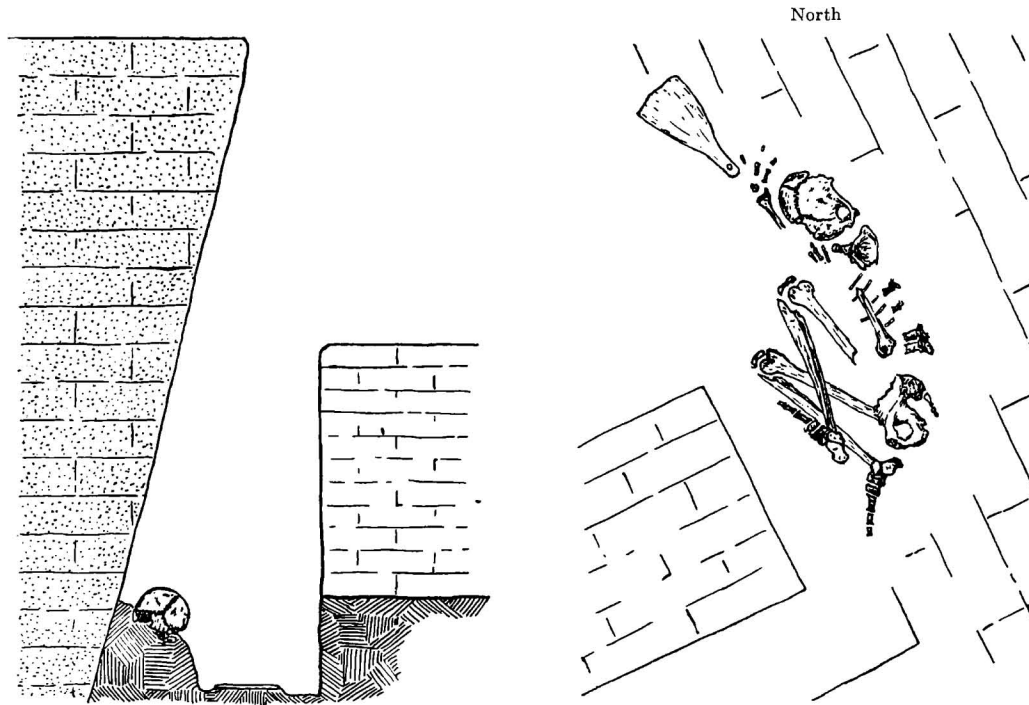


FIG. 140.—DIAGRAMS OF BURIAL b X4 IN SECTION 5 OF THE FORTRESS ON MOUND D. SCALE, 1:20

near the fifth thoracic vertebra. The feet were in front of the pelvis. The left arm was flexed, the hand near the shoulder. The right hand was extended above the cranium and had apparently clasped the accompanying bone "paddle." All the bony structure was rather light. The direction of the vertebral column was 20° west of north, the skull being north. The skull was pushed forward and lay on the right cheek bone. The preservation was fair, though the long bones were in poor condition. The mandible was missing. Bone "paddle" No. b 556 (Fig. 132) was a mortuary gift.

Skeleton b X5 was that of a male(?), adult or older but not senile. It had been buried a little below the floor of Level 2 in Section 7 of the fortress on Mound D (cf. Fig. 17A). The position of the body was dorsal. The legs were extended, and the arms probably had been extended alongside the body. The direction of the vertebral column was 30° west of south, the skull being southwest. The bones were apparently in good condition, but the skeleton was badly injured when first struck by the workers. All the bone fragments were masculine in character. There were no mortuary gifts.

II

STRATUM VI

In 334 B.C. Mithrobarzanes, satrap of Southern Cappadocia, joined other Persian leaders in opposing Alexander the Great on the Granicus.¹ Alexander defeated this confederation and advanced into Asia Minor. He was in Gordium in 333 and continued his march toward An-cyra (Ankara). Apparently he never entered the territory inclosed by the bend in the Halys River (Kızıl Irmak) within which Alişar is located. This region was ruled by Ariarathes, satrap of Northern Cappadocia.

After the death of Alexander his empire was under the nominal rule of his half-brother Philip III (the half-witted Arrhidaeus) and the infant Alexander IV.² When the empire was divided, Cappadocia, Paphlagonia, and Pontus were allotted to Eumenes, Alexander's Greek secretary. However, Cappadocia was not yet subdued. Perdicas invaded it with Philip III and an imperial army and conquered it in 322 B.C., marking the end of Persian rule there. Two years later Eumenes was defeated by Antigonus, who gradually gained control of most of Asia Minor. In the battle of Ipsus (301 B.C.) Antigonus was defeated by Lysimachus and Seleucus. Northern Cappadocia was ruled by Lysimachus until 281 B.C., when he lost his empire and his life to his former ally, Seleucus.³ Seleucus, the last of the Diadochi, was killed a few months later.⁴ During the reign of his son, Antiochus I,⁵ the Galatians coming from Thrace invaded Asia Minor (278-277 B.C.) and occupied central Anatolia, the tribe of the Trocmi settling within the Halys bend.⁶ Though their southern border may not have included Alişar, we may be certain that the Alişar VI settlement suffered from these barbarous neighbors.

The Seleucid rulers who followed Antiochus I found it difficult to hold their possessions in Asia Minor. During this period Northern Cappadocia, Southern Cappadocia, Bithynia, Pergamum, and other provinces became independent states. When Antiochus III (the Great) came to the throne, the Ptolemies of Egypt had acquired a large part of the littoral regions and predominated in the Aegean. Free Hellenic cities were located on the western and northern coasts.⁷

The Romans appeared in Asia Minor for the first time in 190 B.C.,⁸ when they defeated Antiochus the Great in the Battle of Magnesia. In 189 they drove two other Galatian tribes into the territory occupied by the Trocmi, within the Halys bend. The political beginning of the Roman period in Asia Minor was marked by the conquest of Pergamum,⁹ which had been willed to Rome by Attalus III in 133 B.C. According to Theodor Mommsen,¹⁰ Ariarathes V Philopator, king of Cappadocia 163-130 B.C., introduced Hellenic culture "into the hitherto almost barbarous Cappadocia" and fell while fighting for Rome against a pretender to the throne of Pergamum. This was the beginning of a long struggle between a strong anti-Roman

¹ For the Hellenistic phase in Asia Minor see W. W. Tarn in *Cambridge Ancient History* VI (Cambridge, 1927) chaps. xii and xv.

² That coins were struck in Philip's name is shown by Alişar coin No. 267, *OIP* VII 54. See also Tarn, *op. cit.* p. 462.

³ Benedictus Niese, *Geschichte der griechischen und makedonischen Staaten* I (Gotha, 1893) 404.

⁴ *Ibid.* p. 406.

⁵ *Ibid.* II (1899) 71 ff.

⁶ *Ibid.* pp. 78 ff.; H. Kiepert, *Atlas Antiquus*, 4. Auflage (Berlin, 1867) Tab. III.

⁷ Niese, *op. cit.* II 357 f.

⁸ *Ibid.* pp. 735 ff.

⁹ *Ibid.* III (1903) 368 ff.; Theodor Mommsen, *The History of Rome* III (New York, 1898) 277 ff.

¹⁰ *Op. cit.* p. 280.

faction in Cappadocia, aided by Mithradates of Pontus, and the increasing power of Rome.¹¹ The last king of Cappadocia won the throne in 41 B.C. with the support of Marcus Antonius. In 17 B.C. Cappadocia ceased to be a client kingdom and became a Roman province.

As a Roman province Cappadocia was repeatedly the base for Roman operations against Armenia and indirectly against Parthia, for example under Nero (A.D. 54-68) and perhaps under Trajan (A.D. 98-117). During the Parthian war of A.D. 161-65 the Parthians may have invaded Cappadocia. Ardeshir, founder of the Sassanid dynasty, penetrated Cappadocia in 231 during the reign of Alexander Severus. After the capture of Valerian (258) the Persians took Caesarea (Kayseri) in Cappadocia and ravaged all of Asia Minor, but the country was recovered by Aurelian in 272. In 392 Asia Minor was ravaged by the Huns as it had been by the Persians.

When the Roman Empire was divided, Anatolia, of course, went to Byzantium.¹² During the reign of Heraclius the Persians again penetrated Asia Minor and captured Caesarea (611) and Ancyra (619) before they were driven back. The expansion of the Arabs followed. They first appeared at the Bosphorus in 668. They continued to invade Asia Minor and to attack Constantinople at intervals until they were defeated at Akroenos (Afium Karahisar) in 740.¹³ In 786 Harun al-Rashid built a splendid fortification system reaching from Melitene (Malatya) to Tarsus,¹⁴ which served as an efficient base for future operations. During the reign of the Armenian dynasty in Byzantium (867-1025) it is probable that Cappadocia, at least the part east of the Halys River, was under the rule of the Arabs, for the Armenian general Kurkuas succeeded in pushing the border of the Eastern Roman Empire from the Halys to the Tigris-Euphrates (920-42).¹⁵

Early in the 11th century hordes of Seljuks appeared in Armenia.¹⁶ In 1064, under Alp Arslan, they conquered Armenia and soon reached the province of Pontus. Temporarily checked in 1068, they invaded Cappadocia in the following year and devastated it. Once more they were repelled; but in the decisive battle of Manzikert in 1071 the imperial army was defeated and Romanus IV, the Byzantine emperor, was captured by Alp Arslan.¹⁷ In Armenia and Cappadocia the year 1071 marks the beginning of the Seljuk period.

Although each of this long series of invasions must have left its mark on the remains of the district, we have little doubt that the bulk of the Alishar VI material is derived from the Roman period. Were it not for coins of the Hellenistic phase, we could only guess that the mound was inhabited during that time. It seems probable that during most of the Byzantine phase the site was not occupied. Very few of the typical sherds with greenish glaze have appeared on the mound, although the presence of Byzantine coins would lead one to expect other remains of that period. During the Roman period the site was more important, and we may hope that the name of the town will be determined in the near future, as the Alishar settlement was not far from an important road connecting Euagina¹⁸ with Basilica Therma.¹⁹

We found few building remains in Stratum VI. There were no traces of fortifications except (on Mound A) the walls of a Roman structure which we consider a guardhouse.²⁰ Some walls

¹¹ For the line of Ariarathes ruling at this time see Pauly-Wissowa, *Realencyclopädie der classischen Altertumswissenschaft*, III. Halbband (Stuttgart, 1895) 818-21.

¹² For the Byzantine period see H. Gelzer in Karl Krumbacher, *Geschichte der byzantinischen Litteratur*, 2. Auflage (München, 1897) pp. 911 ff.

¹³ *Ibid.* p. 961.

¹⁵ *Ibid.* p. 980.

¹⁷ *Ibid.* p. 1010.

¹⁴ *Ibid.* p. 964.

¹⁶ *Ibid.* p. 997.

¹⁸ Identified with Köhne by W. M. Ramsay, *The Historical Geography of Asia Minor* (Royal Geographical Society, *Supplementary Papers* IV [London, 1890]) p. 261.

¹⁹ Identified with Terzili Hamam, *ibid.* pp. 265 and 268.

²⁰ See *OIP* VI 108 f.

were almost identical with earlier constructions, whereas some foundations showed a decided advance in the art of building. Traces of mortar were observed in Level 1 on Mound A. The facing of some walls was perfect, although we found only sporadic examples of wrought stones.

There are few indications at Alişar that the civilization of this period possessed greater wealth and was more elaborate than that of earlier times. The better constructed walls, the coins,²¹ a few vessels, and some metal objects are the chief archeological clues. The pottery, presumably of the Roman phase, is technically the best produced during the long history of the mound. Often the presence of Alişar VI remains was indicated by great numbers of sherds only, the "index fossils" being in most cases *terra sigillata* or fragments closely resembling this ware. There are some beautiful figurines in pottery and metal, and a few metal objects appear to be more elaborate than were earlier types. Spindle whorls are rare and are no longer of

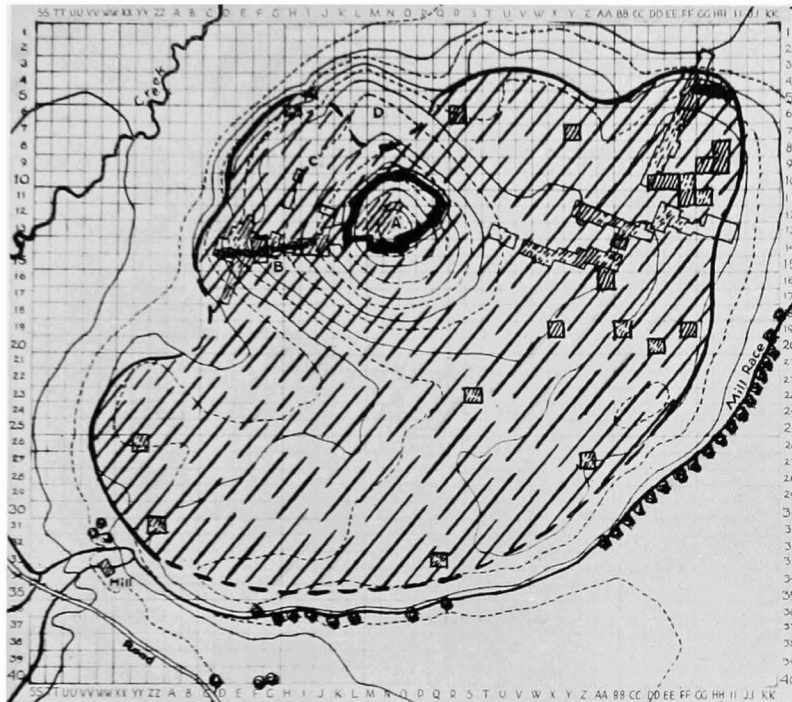


FIG. 141.—SETTLEMENT PLAN OF ALIŞAR VI

characteristic form. Seals are very rare. Some stone vessels excel, but the elaborate mills of Stratum V do not appear. Bone objects are rare and not characteristic. Beads of glass, fayence(?), and shell abound. No Alişar VI burial ground has been found, but one burial has been tentatively attributed to this period.

THE SETTLEMENT

Almost everywhere on the mound Alişar VI remains were struck immediately below the sterile mound shell, but we do not believe that the whole area marked on the settlement map (Fig. 141) was occupied at any one time. Small town or village sites probably shifted as settlements of other periods did and as modern settlements do. The thickness of Stratum VI is, as a rule, 1 meter or less, though the stratum represents the deposits of about 1,400 years. This inconsiderable depth may be explained by the shifting sites of the settlements and by the

²¹ Cf. E. T. Newell's historical notes on the coins in *OIP* VII 66 ff.

long periods when the mound was probably almost uninhabited; an additional reason lies in the fact that the buildings were unimportant.

Although the Alishar mound was probably not an important site during Period VI, many ruins in the neighborhood show signs of occupation during this period. Remains of columns and capitals, sculptures, inscriptions, large pithoi, and the like are present in the villages and cemeteries.²² A more important classical site, presumably Roman, is situated between the mound and the village of Alishar. Byzantine ruins are indicated a few hundred yards east of the mound by glazed sherds on the surfaces of low elevations. In some cases the contours of inclosures can be traced. Fuller information about the archeology and more accurately defined remains of Period VI would undoubtedly be obtained at such sites as these, which probably were occupied during Period VI only.

The best information obtained on the Alishar mound was derived from Level 1 on Mound A and from R 6 and HH 8.

ARCHITECTURE

MOUND A

The few architectural remains of Level 1 on Mound A²³ have been described in the report of the first season.²⁴ The use of mortar in Room 1 of Plot 40²⁵ was distinctive, and characteristic Alishar VI specimens were found there. The room was apparently a Roman guard-house, built on top of the main mound to protect the settlement situated 20 meters below on

the *hüyük* terrace. Wall fragments, some superimposed on the main walls of Level 1 and others intermediate between Levels 1 and 2, showed that this lookout was occupied over a long period. This may explain the time differences shown by the few Period VI coins found on Mound A. According to Mr. E. T. Newell, the oldest coin found on Mound A is No. 1129, from Plot 43.²⁶ It was struck under the rule of Ariarathes VI,²⁷ about 125-111 B.C. Other coins were No. 1013 (Plot 39), of uncertain origin, perhaps 1st century B.C., and No. 1050 (Plot 38), of Constantine the Great (struck A.D. 324-26).

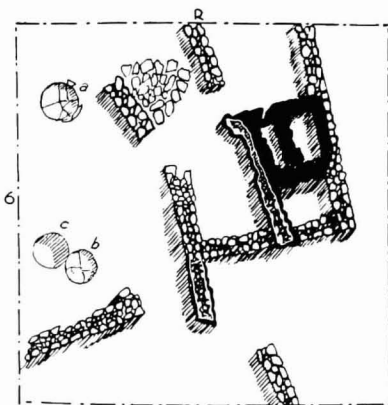


FIG. 142.—PLAN OF LEVEL 1 IN R 6.
SCALE, 1:200

PLOT R 6

Three sublevels of Level 1 could be distinguished in this plot, excavated in 1929. The uppermost wall fragments inclosed two small narrow chambers (black in Fig. 142). Below these were two walls (outlined in black) superimposed in their turn on the walls of the lowest sublevel. Probably the other disconnected wall fragments and the paved patch belonged to either the second or the third sublevel. No considerable time could have elapsed between the construction of the successive foundations. One could not guess from the construction of the walls (Fig. 143) that they had been built during the technically advanced Roman period, to which is ascribed the beautiful façade of Terzili Hamam²⁸ (Basilica Therma) only a few kilometers away. The unwrought wall stones were carelessly laid, large ones often interchanging promiscuously

²² See *OIC* No. 6, pp. 12-50.

²³ See cross-section on plot border 12-13 in Fig. 3.

²⁴ *OIP* VI 108 ff.

²⁵ For the location of this and other 1927 plots see Fig. 186.

²⁶ For his descriptions of coins see *OIP* VII 54-56.

²⁷ The successor of Ariarathes V; cf. page 89.

²⁸ See *OIP* V 18.

with smaller ones, though the walls were usually built with larger stones in the border courses and small stones in the core. As in walls of preceding periods, mud was used for mortar.

Level 1 in R 6 was ascribed to Period VI because of the objects associated with the walls. There were great numbers of *terra sigillata* sherds, fragments of glass vessels, some broken pithoi, and two fragments of domestic furniture made of concretelike material. Two fragmentary pithoi (*a* and *b* in Fig. 142) standing near the west border of the plot probably be-



FIG. 143.—LEVEL 1 IN R 6, FROM WEST OF NORTH

longed to the second or third sublevel. Coin b 868*b* of Alexander Severus (cf. p. 105) in Pit *c* dated these structures and objects accurately. A bronze figurine, No. b 866, was found in the same pit.

PLOTS DD–EE 10

In 1927 the northwest corner of DD 10 was found to contain structures attributed to the Osmanli occupation (Period VII).²⁹ But the age of the main inclosure in Level 1 of DD–EE 10 (Fig. 144), excavated in 1929, is less certain. No objects of definitely Roman manufacture were found inside the rooms. Some fragments of rectangular or trapezoid roof tiles similar to those found in Plot XX of 1927 are probably Turkish.³⁰ But these tiles were probably con-

²⁹ See *OIP* VI 158–62 (Plot VIII).

³⁰ Plot XX adjoins Plot VIII and DD 10 on the north. The room in which the roof tiles were found was ascribed to the Osmanli period because the associated pottery seemed to be Turkish. Cf. *OIP* VI 162–64.

temporary not with Sections 1 and 2 but with a Turkish baking oven, 3c, which was evidently built later than the walls of those sections (cf. p. 95). A bath, 2a, resembles one presumably of Period VI origin found in Plot XXIII of 1927.³¹ The sherds in the rooms were rather characterless (apparently late Alishar VI). East of and lower than the rooms Roman *terra sigillata* appeared. Hence these rooms may belong to the late Roman or to the Byzantine phase of Period VI.

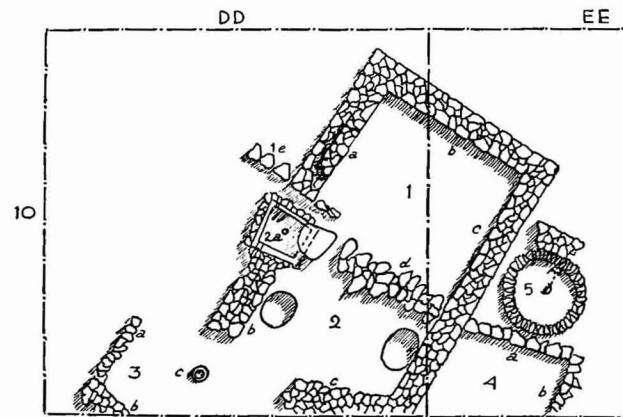


FIG. 144.—PLAN OF LEVEL 1 IN DD-EE 10. SCALE, 1:200



FIG. 145.—LEVEL 1 IN DD-EE 10, FROM SOUTHWEST

Sections 1 and 2 may have been one large inclosure, subdivided by a row of stones, 1d. Walls 1a, 1b, and 1c were exceedingly well built and were preserved to an average height of 1 meter (Fig. 145). Unwrought rocks and slabs were placed in such a way that the wall faces were almost perfectly straight. Small stones filled the centers of the walls. The flat tops of the stone foundations suggested that *kerpich* walls had rested upon them, but no traces were preserved. A layer of stones forming a narrower wall on top of Wall 1a indicated perhaps that

³¹ See *OIP* VI 176-80.

the upper parts of these walls were narrower than the foundations. Only a short piece of Wall 2*b* was preserved. A rock pile, 2*c*, suggested the site of the southwest wall of Section 2.

Wall 1*c* may have survived from an annex inclosing a bath or baptistry, 2*a* (Fig. 146), which closely resembled the presumably contemporaneous one in Plot XXIII of 1927.³² Its plan was irregularly trapezoid, its northeast wall being the longest. The floor was of cement with rough and granular surface. A depression .05 deep and .15 wide was in the center. The somewhat slanting walls, smooth on the inner face, were of cement .10-.15 thick and were inclosed by a thin stone wall. The tops of the walls were broken. No *kerpich* was observed. The top of the bath as found was flush with the base of the adjoining foundation, but probably its original top was level with the floors of the rooms. A depression in the northwest wall .25 above the floor ended in drainage holes in the northeast and southwest walls. A large rock lay a little above the top of the southeast wall (cf. Fig. 145). It may have been the crumbled-off "end stone" of Wall 1*d*.

Wall 3*b* belonged to the same complex as Sections 1 and 2. Wall 3*a*, built of upright slabs like the walls of the Turkish room in Plot VIII, was on the level of that room. A baking oven,

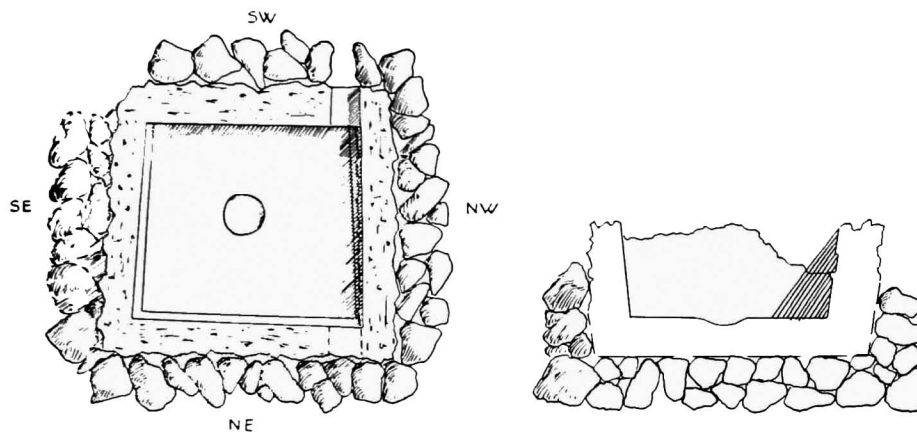


FIG. 146.—PLAN AND CROSS-SECTION OF BATH IN LEVEL 1 OF DD-EE 10. SCALE, 1:40

3*c* (Fig. 147), closely resembled the Turkish baking oven (called *tandır* by the Turks) found in Plot XIII of 1927.³³ Its orifice was about flush with the base of Wall 3*a* and somewhat lower than the base of Wall 2*b*. The latter had apparently extended farther southward originally, but had been partially destroyed before the oven was built. The fire pot, a truncated cone, was made of crude brittle red-brown earthenware. It was surrounded by a layer of earthenware slabs. An oval opening directly above the bottom had apparently been connected with a flue.

Section 4 was poorly built. It may have been of earlier origin than Sections 1 and 2.

Cist 5 was inclosed by a circle of small stones neatly set (cf. Fig. 176). No traces of *kerpich* could be found. The pit contained Skeleton b X38. It may have been built primarily as a mortuary cist, or it may have been a refuse or storage pit used secondarily as a grave.

A ROMAN HOARD

A valuable hoard, cached .20-.40 below the surface in HH 8, was imbedded in top refuse of Stratum II.³⁴ The find included objects of pottery, bronze, iron, stone, fayence, glass, frit, and shell and two coins. There was no trace of a container for the objects; but they were close

³² See OIP VI 176 f.

³³ *Ibid.* pp. 141 f.

³⁴ Cf. OIP XIX 92.

together, and there is no doubt about their contemporaneity. We have ascribed this hoard to the Roman period, but it may be Hellenistic (cf. p. 110).

The beautifully modeled horse's (stallion's?) head No. b 1738 (Fig. 148) is part of a rhyton. It was probably molded. The paste is light reddish brown and fine, but not as fine as *terra*

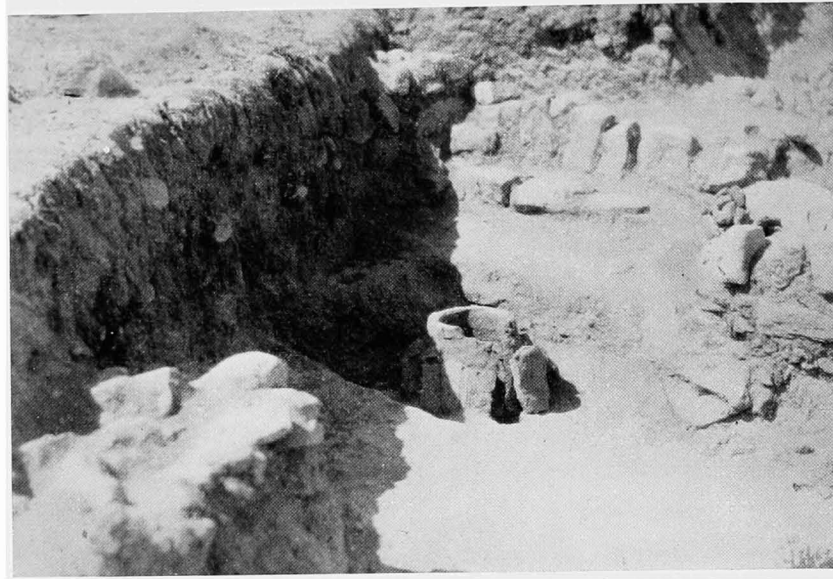


FIG. 147.—TURKISH BAKING OVEN IN LEVEL 1 OF DD-EE 10, FROM EAST

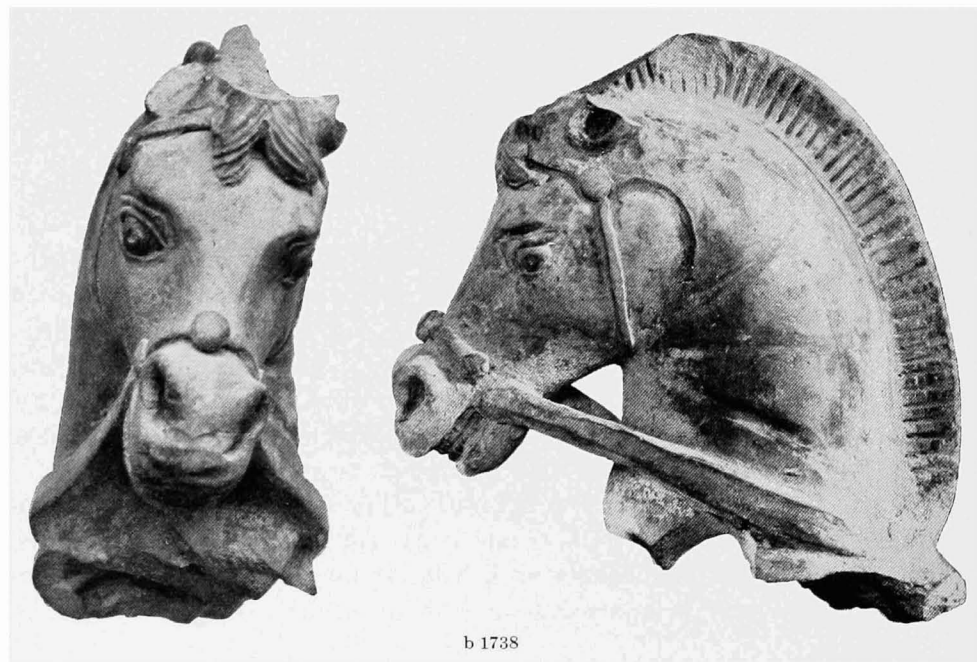


FIG. 148.—HORSE'S HEAD OF POTTERY. SCALE, 2:3

sigillata. The light brown surface is covered with a red wash and is smooth, in parts polished. The slightly conventionalized mane is carefully incised and ends in two forelocks. The ears (lost) were raised. The eyes and the dilated nostrils give a spirited appearance. The teeth are carefully marked in the slightly opened mouth. The headstall is ornamented with disks at

the sides and in front. The bit does not show. The reins are connected behind the neck, but the knot is broken.

Lamp b 1739 (Fig. 149) is of ware like that of the horse's head. The twelve holes around the edge are fire-blackened.

The hoard contained a single smooth pottery spindle whorl, No. b 1759 (Fig. 150). It is important for its association with the other objects.

The metal objects in the hoard are almost all of bronze (or copper; cf. p. 105, n. 54). Numerous small fragments of bands and crescents, some of them perforated, are grouped as No. b 1761. Many of them may have been dress ornaments (e.g., Fig. 151A). Some may be remains of thin blades (e.g., Fig. 151B). No. b 1760 (Fig. 151C), with a flange .001 thick, may be another sort of dress ornament.



FIG. 149.—POTTERY LAMP FROM THE ROMAN HOARD. SCALE, 1:2

Other bronze objects are shown in Figure 152. No. b 1764 has a flaring spatulate end. Two peculiar strips, No. b 1766, have bezels like those of finger rings. Nos. b 1765 (oval in cross-section) and b 1767 may be finger rings. No. b 1762 may be a bracelet. It has a wire core .002 thick, spirally wound with finer wire. No. b 1763 includes a fragment of a bracelet(?) like No. b 1762 and odd parts of wires or rings. Coins b 1768a and b 1768b were with the hoard. Coin b 1772 was about 2 meters to the north. They were too badly abraded and oxidized to permit identification in the field.³⁵

The iron objects found with the hoard are not illustrated. They include a heavily oxidized finger ring (b 1770) with a small bronze head at one of the overlapping ends, fragments of a seal ring (b 1769), and some unidentified scraps.

No. b 1740 (Fig. 153), a fragmentary stone lid(?) of a vessel, was in the hoard. It is of rather hard greenish gray polished stone. Two stone beads are described on page 101.

A boar's tusk, No. b 1741a (Fig. 154), may have been used as an ornament.

³⁵ Unfortunately these coins could not be exported for examination by an expert numismatist.

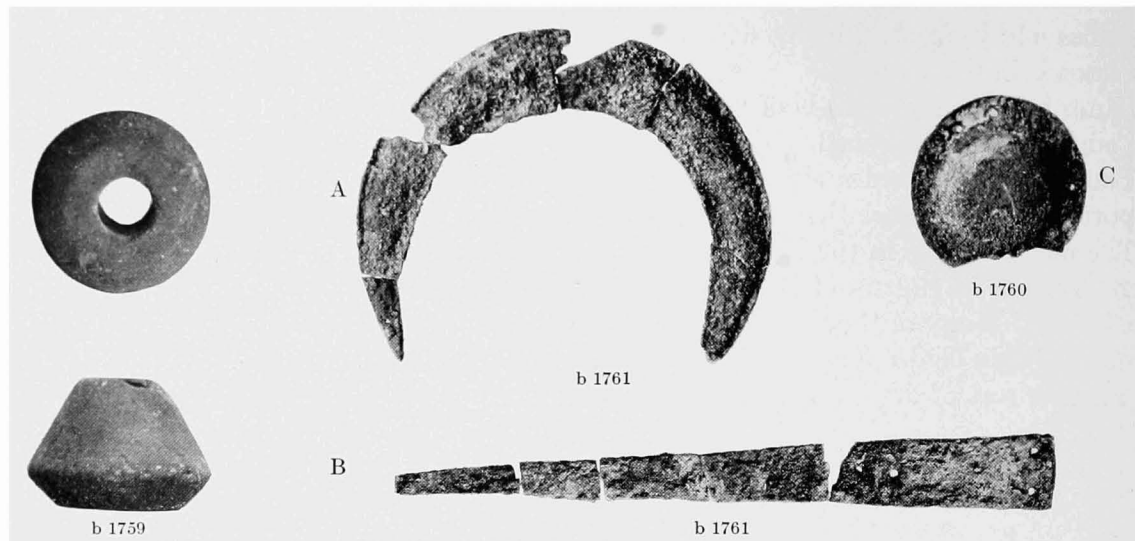


FIG. 150.—POTTERY SPINDLE WHORL FROM THE ROMAN HOARD. ACTUAL SIZE

FIG. 151.—BRONZE OBJECTS FROM THE ROMAN HOARD. SCALE, 1:2

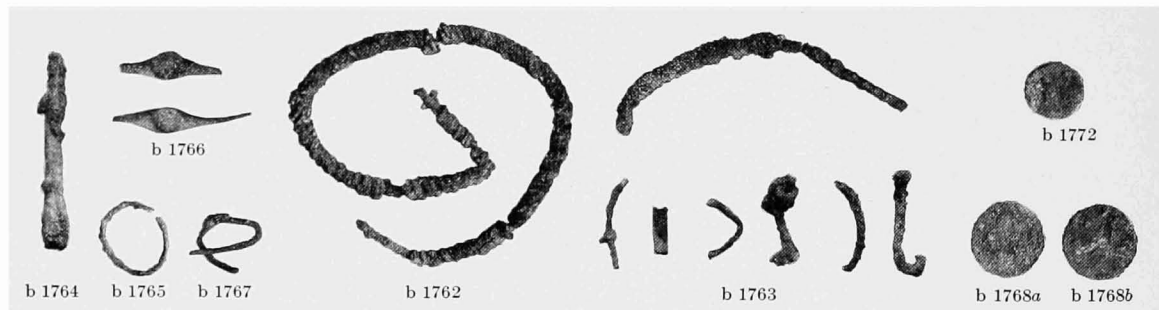


FIG. 152.—BRONZE OBJECTS FROM THE ROMAN HOARD. SCALE, 1:2



FIG. 153.—STONE LID(?) FROM THE ROMAN HOARD. SCALE, 2:3



FIG. 154.—BOAR'S TUSK FROM THE ROMAN HOARD. SCALE, 2:3

No. b 1748 (Fig. 155) is a fragmentary glass alabastron with a dragged pattern in dark brown and light gray. It has two knob handles. No. b 1745 is part of the rim of a frit vessel(?) with traces of light blue over grayish white. No. b 1744 may be a stamp seal. The white frit base

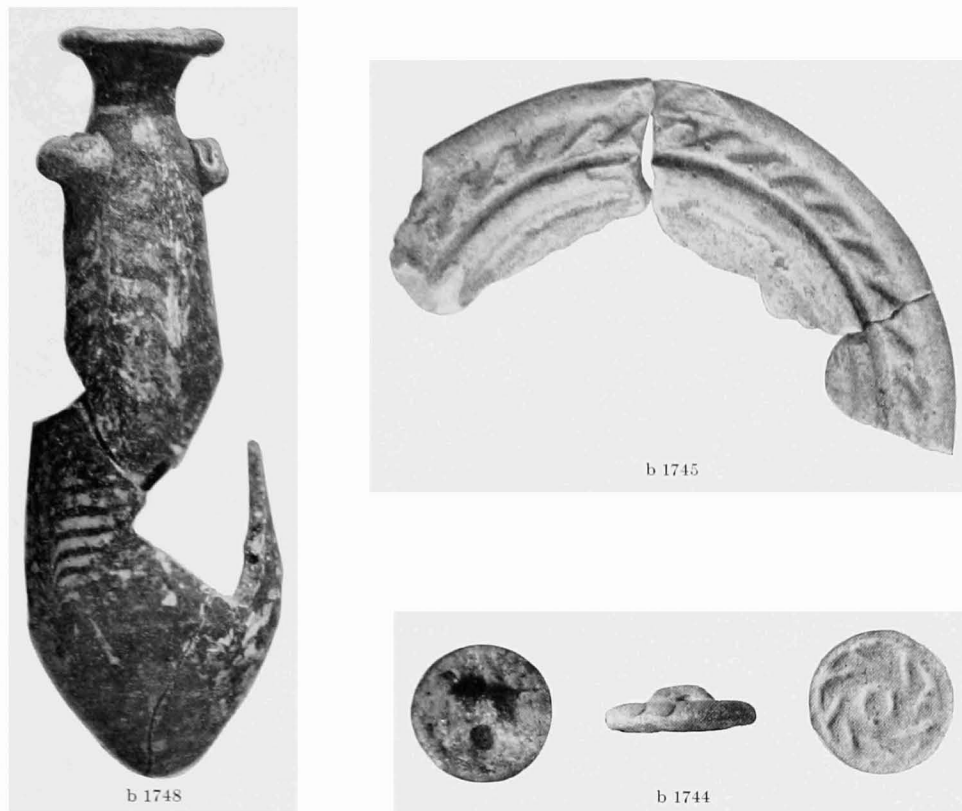


FIG. 155.—A GLASS ALABASTRON AND A VESSEL RIM(?) AND SEAL OF FRIT FROM THE ROMAN HOARD. ACTUAL SIZE

is coated with a light blue glaze. The low knob handle is perforated. The raised design on the base consists of eight connected angles surrounding a central circle.

Beads b 1785(1)–93(9) were uncovered in the positions sketched in Figure 156. These and other fayence(?)³⁶ beads are shown in Figure 157. No. b 1753 is gray with two light blue eyes and one of dark blue with gray rings. It has two small lateral holes, one below the other. No. b 1787 has twelve eyes with white borders on dark gray. No. b 1789 has three eyes with red borders on dark gray. No. b 1790 has three eyes with yellow borders on dark gray. No. b 1794 has three eyes with orange borders on dark gray. No. b 1796 has three eyes with orange borders on gray, with light gray stains. No. b 1788 has traces of brown-red lines and a brown band on a grayish white ground. No. b 1791 is black, glossy, and porous. No. b 1795 is dark brown with an encircling white thread near the base. No. b 1785 is dark gray with a red-brown stain of iron oxide on one side. No. b 1786 is white with light blue lines and a central band of faded dark brown. It has two small lateral holes. No. b 1792 has a dark brown central band and bluish green stains on iridescent white. No. b 1793 is iridescent grayish white with a brown band encircling the center.



FIG. 156.—SKETCH SHOWING POSITIONS OF NINE BEADS FOUND TOGETHER IN THE ROMAN HOARD

³⁶ Eye and band designs such as those here described are technically most appropriate in glass.

Beads of glass and fayence are shown in Figure 158. No. b 1746 has white threads with traces of light blue on a dark brown ground. Orange rings encircle both ends of the cylinder, and one is bordered by a light blue line. No. b 1747 has a grayish white spiral band on dark

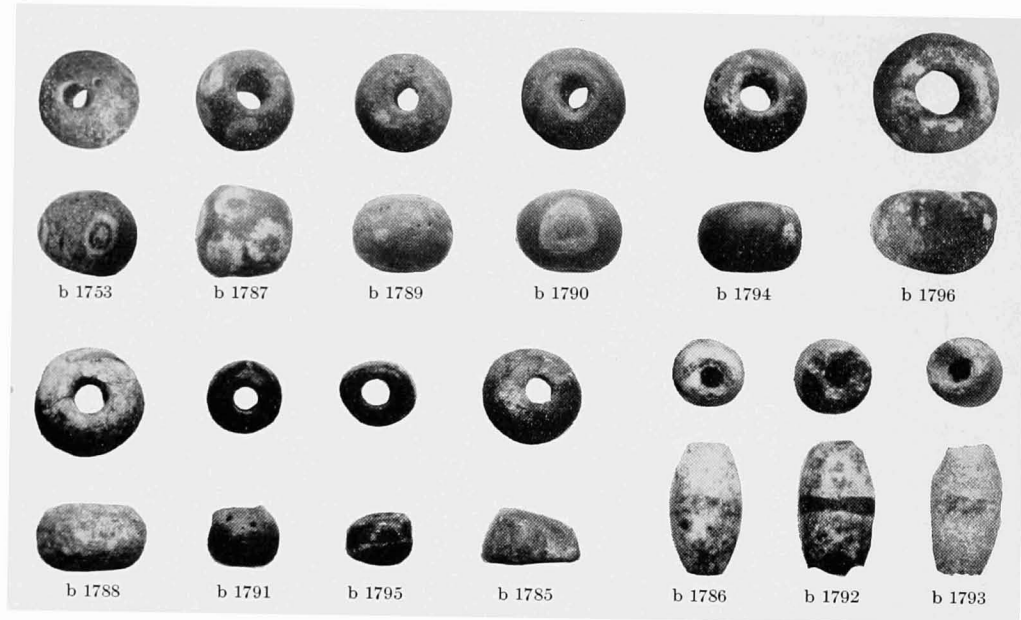


FIG. 157.—FAYENCE(?) BEADS FROM THE ROMAN HOARD. ACTUAL SIZE

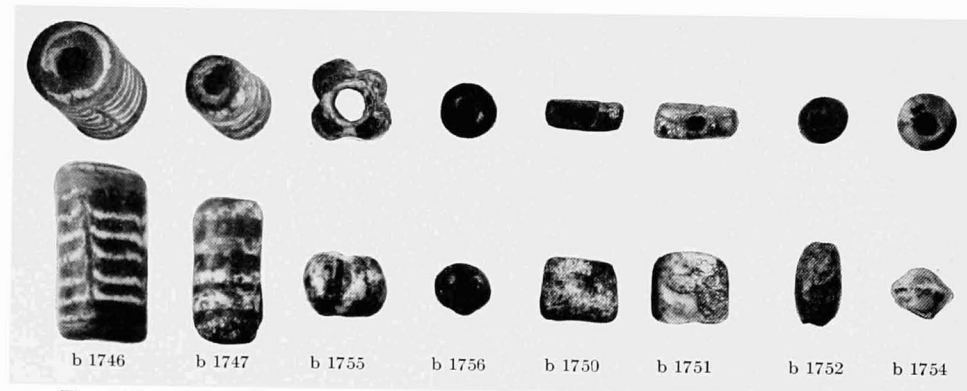


FIG. 158.—GLASS AND FAYENCE BEADS FROM THE ROMAN HOARD. ACTUAL SIZE

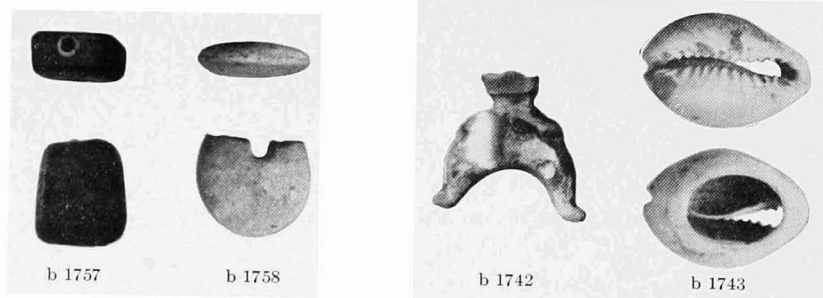


FIG. 159.—STONE AND SHELL BEADS FROM THE ROMAN HOARD. ACTUAL SIZE

brown. No. b 1755, scalloped, is grayish white with brown stains. No. b 1756 is plain dark gray. No. b 1750 is dark gray with iridescent film on one side. No. b 1751 is white with silvery iridescence. Nos. b 1752 and b 1754 are of dark blue glass. An irregular protuberance at one end of the former is broken. The latter is covered with silvery iridescence.

Two stone beads (Fig. 159) were found in the hoard. No. b 1757 is of brown-red stone with darker stains. No. b 1758 is grayish white and smooth.

There were two shell beads also (Fig. 159). No. b 1742, a mother-of-pearl pendant, iridescent white, has a groove for suspension. No. b 1743, with an oval perforation opposite the mouth, is a duplicate of No. b 170 of Stratum V (p. 86). This type of bead is still in use in Anatolia.

POTTERY

The age of painted pottery in Anatolia ended with Alişar V after it had lasted about 2,000 years. A few painted sherds occur in Stratum VI, but they do not serve as "index fossils." "Fine wares" are characteristic for Stratum VI. Advanced technique, rather than the manner of decoration, is the distinguishing feature. This parallels to a certain extent the case of Stratum II.

In trying to distinguish the vessels of the various Alişar VI phases, we must confess a regrettable ignorance about the pottery of the Hellenistic phase. Excavations at sites inhabited during the Hellenistic age only, or at least during Alişar VI only, might clear the situation. Certain vessels illustrated in an earlier volume³⁷ and tentatively attributed to the Roman age may actually be Hellenistic. Such vessels are Nos. 155 and 231, one or another of the bottles, and certain fragments with relief ornamentation. Bottles and fragments with relief ornamentation of zigzag bands persisted from Period V (cf. pp. 49 and 46-47). The pottery objects in the hoard just described may be Hellenistic (cf. pp. 96-97).

The Byzantine phase of Period VI is only sporadically represented at the Alişar mound, though typical sherds with greenish glaze occur on the surfaces of near-by sites.

The beautiful, thin-walled, bright red *terra sigillata* of the Roman phase prevails in Stratum VI. Small fragments of this exceedingly well fired ware were found in great numbers in Level 1 of Mound A and on the terrace. Some use wheel marks with ornamental effect. In a few cases they have impressions of miniature sandals,³⁸ series of dashes, or concentric circles. They give a metallic sound when dropped. There are apparently several kinds of fine red ware, varying in fineness and thickness and often hard to distinguish from the best *terra sigillata*. Thick and thin brown-ware fragments with fine paste occur also. They often show various shades due to the varying thickness of the pigment coating, conditioned by the irregularities of the wheel-marked surface. We are not quite certain about the character of the Aretine ware found at Alişar. Sherds resembling Arezzo ware, of fine paste and with molded(?) floral and animal patterns, were found both on Mound A and on the terrace. They may be homemade products of Anatolia, like the pseudo-*sigillata* which seems to have been manufactured in Asia Minor.³⁹ Well modeled ring bottoms and rims and elaborate handles are also typical for Stratum VI. We have little doubt that all the Alişar VI vessels described below originated during the Roman phase of this period.

FINE WARE

Bowl b 1352⁴⁰ (Fig. 160; cf. Plate XIA) was found in FF 10 at a depth of 1.10. The paste of this well made vessel is light red-brown and fine, but not as fine as the best *terra sigillata*. Both surfaces are coated with an orange slip. A grayish white area on the exterior may be due to a firing mistake or to the presence of certain chemicals in the soil in which it lay. Wheel marks of varying depth have an ornamental effect. The presumably molded relief ornamenta-

³⁷ OIP VI 251-54.

³⁸ E.g., Sherd 2066, OIP VI 234 and 236.

³⁹ E.g., near Gordium, according to G. and A. Körte, *Gordion*, p. 195.

⁴⁰ Cf. Vessels 3268 and 3269, OIP VI 250.

tion is applied at the bottom, as on all the vessels resembling Arezzo ware found at Alişar. Four quadrants filled with hand designs are bordered above and below by rows of disks. This bowl is a good example of the intrusion of late objects into earlier deposits. It occurred in the upper level of Stratum II (about 2,000 years older than the vessel); it had, of course, been deposited in a storage pit.

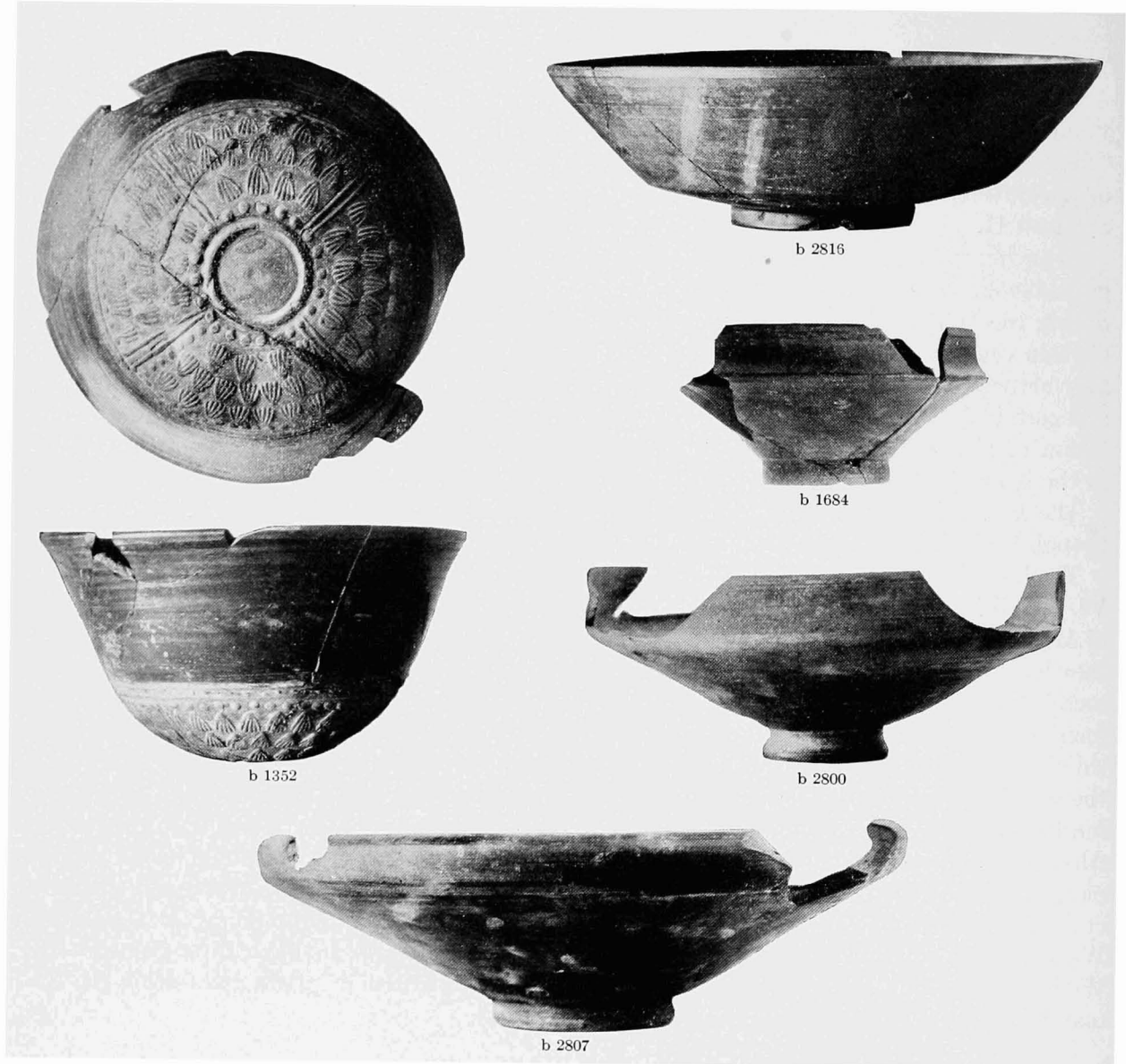


FIG. 160.—FINE WARE BOWLS. SCALE, 2:5

Bowl b 2816 (Fig. 160; cf. Plate XI.4) occurred at a depth of 2.00–2.40 in Q 33. The bottom of the Roman deposit was far above; but the find-layer contained mixed Roman, Alişar IV, and Alişar II remains. The paste is red-brown and typically fine-grained *terra sigillata*. The interior and the upper exterior are coated with a very thin red-brown wash or slip with iridescent metallic luster. The lower body and the well modeled ring bottom are dull red-brown. There are wheel marks with ornamental effect on both surfaces.

Bowl b 1684 (Fig. 160; cf. Plate XI A) was in the Roman deposit .30-.40 below the surface in HH 10. The bottom is a well modeled ring. The varying thickness of the vessel wall is interesting; the bottom is .002 thick, the body .005, and the rim .003. The paste is light red-brown and fine *terra sigillata*. The surfaces are brown-red. The interior is polished, but wheel marks with ornamental effect somewhat roughen the exterior.

Bowl b 2807 (Fig. 160; cf. Plate XI A) was .50-.75 below the surface in GG 11. *Terra sigillata* sherds were frequent in its find-layer. The paste is not as fine as the best *terra sigillata*. The exterior is brown, and the rim and lip are covered with a gray wash or slip partly obliterated by wheel marks. The interior is reddish brown with dark gray rings, also partly obliterated by wheel marks.

Bowl b 2800 (Fig. 160; cf. Plate XI A) was found in mixed refuse of Strata VI, IV, and II in FF 10. In form it resembles closely some bowls uncovered during the first working season,⁴¹ definitely associated with Alişar VI and probably Roman. The paste places the vessel in the category of fine gray ware. Both surfaces are gray and polished. The wheel marks on the exterior vary in depth.

No. 880 (Plate XI B) is a bowl reconstructed from a fragment. It occurred on Mound A in the top layer of Plot 34 of 1927 (cf. Fig. 186). The paste is fine. The vessel is coated with a red slip on both surfaces and is decorated with a series of deep wheel marks and a circle of radiating dashes near the bottom.

The fragments of Bowl 1073 (Plate XI B) occurred at a depth of 1.10 in Plot 41 of 1927. The vessel belongs to the category of fine red ware. Its surfaces are smooth. The graceful handles are elaborate.

Two red sherds of *terra sigillata* texture, Nos. b 745:1a and b 745:3b (Plate XI B), occurred in R 6 at depths of 1.00-1.60 and 1.80-2.30 respectively. They are approximately dated by Coin b 868b of Alexander Severus (A.D. 225-35) found in the same plot.

Sherd b 1180:24 (Plate XI B) was in the bottom refuse of Stratum VI (depth 1.40-2.10) in Y 7. *Terra sigillata* was still frequent, and some Alişar V sherds were present; but Alişar IV was beginning to prevail. We are rather certain that the present sherd belongs to Alişar VI. The decoration is dark gray, brown-red, and white on light brown.

Sherd b 742:7 (Plate XI B) may be older than the Hellenistic age. There is little doubt that it was imported from the west. The find-spot in AA 16 gives no definite clue. The sherd occurred at a depth of 1.60-2.10 in a layer where all periods of the mound were represented by sherds and where Alişar I was beginning to prevail. The sherd is decorated with centered dots in dark brown rings and light brown lines over a white panel, applied on a highly polished brown ground.

CRUDE WARE

Cup b 2809 (Fig. 161; cf. Plate XI A) was associated with presumably late Alişar VI structures in DD-EE 10, where it lay east of Section 1 about level with the bases of the foundations. The bottom is flat. The cup is probably wheelmade. It has a light red, medium to coarse paste and light brown surfaces. The bottom of the exterior is blackened, apparently by use over fire. This cup serves as an example for characterless vessels which might be attributed to almost any stratum.

Pottery objects found with the Roman hoard were described on pages 96-97.

⁴¹ See OIP VI, Fig. 213.



FIG. 161.—CRUDE CUP. SCALE, ABOUT 2:5

SPINDLE WHORLS

Spindle whorls are rare in Stratum VI and cease to be of value as chronological guides.

POTTERY

Three pottery whorls from Mound A are illustrated in Figure 162. All are rather crude. Nos. a 171 and a 143 are gray. No. a 144 is gray-brown. According to their find-spots they may belong either to Alishar VI or to the late phase of Alishar V. No. b 2112 (Fig. 162) was found during the removal of Alishar VI structures in DD-EE 10. It is interesting because in form it is identical with the single pottery whorl found in the Roman hoard (cf. p. 97). No. b 567 was found in AA 16 at a depth of .80-1.25, that is, in the bottom refuse of Stratum VI,

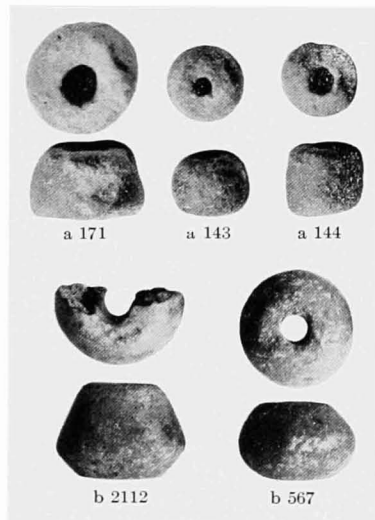


FIG. 162.—POTTERY SPINDLE WHORLS. SCALE, 1:2

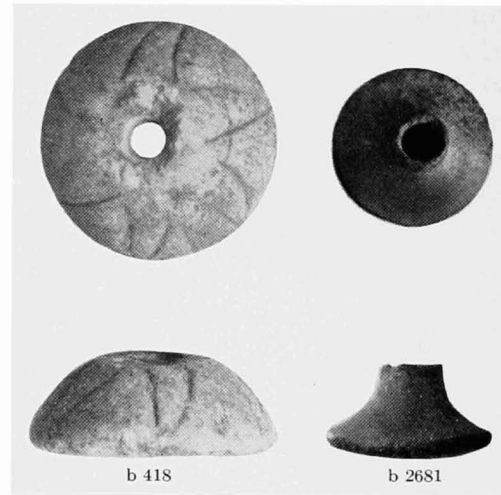


FIG. 163.—STONE SPINDLE WHORLS. ACTUAL SIZE

where sherds of earlier periods were admixed. The light gray whorl is truncated biconoid, identical with the typical Alishar V whorls. Its shape may have persisted, or the specimen may belong to Stratum V.

STONE

No stone whorls from Mound A are available. The association of the two whorls in Figure 163 with Stratum VI is doubtful. No. b 418 was .20 below the surface in J 2, where there were a few *terra sigillata* bits, but more remains from Period V and some from Period IV. The distinct type of the whorl induced us to attribute it to Alishar VI. It is convexly conoid, of white marble(?), well smoothed. A six-pointed star is incised on top. The concavely conoid whorl No. b 2681 is of polished dark gray serpentine(?). Its association with Stratum VI is still more doubtful than that of No. b 418. It was found at a depth of 0-.40 in ZZ 31, a layer in which no Alishar VI sherd was identified, though Alishar I, II, IV, and V contributed one sherd each. The structures just below the find-layer may belong to Period VI (cf. p. 120), though only a little *terra sigillata* occurred. These building remains had been disturbed by the use of this part of the terrace as an Osmanli (Period VII) cemetery. This whorl provides a good example of the difficulties sometimes involved in determining chronological relations.

STRATUM VI

105

FIGURINES

An interesting bronze figurine, No. b 866 (Fig. 164), found in a storage(?) pit (depth 1.75–2.50) in R 6, is dated by Coin b 868b. The figurine represents a hawk(?)⁴² sitting on the head of a deer(?). Its hollow base (broken below) suggests that it was perhaps originally mounted on a staff or standard.

A horse's head of pottery, found with the Roman hoard, was described on page 96.

SEALS

No seals of Period VI appeared except frit seal(?) No. b 1744, found with the Roman hoard (cf. p. 99). This is surprising, since engraved gems would be expected in Stratum VI.

COINS

In 1927 the coins found in Stratum VI were comparatively numerous.⁴³ Coin 267 (from Plot 13 on Mound B), struck under Philip Arrhidæus, was the earliest. Four other Greek coins were found on Mounds A and C and on the terrace,⁴⁴ and two Byzantine coins were found in dump soil.⁴⁵ Of the nineteen Roman coins, eleven were on the terrace,⁴⁶ six on Mound B and the slope of Mound A,⁴⁷ one on top of Mound A,⁴⁸ and one on Mound C.⁴⁹

In 1928 and 1929 only a few Period VI coins were found. Of the ten pieces found in 1928 (on the mound surface or in dump soil) two could be identified as Roman⁵⁰ and one as Greek(?).⁵¹

In 1929 two Roman coins were found in Pit c (1.75–2.50 deep) of R 6. Bronze coin No. b 868b (Fig. 165), struck under Alexander Severus,⁵² is .022 in diameter. It bears the inscription AYKCEOYI: AΛEΞAN and the head of the emperor r., laureate. *Reverse*: MHT P K AICΑΨ; in the exergue, ET Γ and three ears of grain tied together.

Coin b 869 from Level 1 of R 6 is .021 in diameter and is probably Roman. Three badly oxidized coins have been described with the Roman hoard on page 97.⁵³

METAL OBJECTS

The metal collection from Stratum VI includes objects of bronze⁵⁴ and iron. Certain types of objects, such as spindle-shaped points, tweezers, and rings of bronze and weapon points and rings of iron, persisted from preceding periods. A vessel handle (No. 1127)⁵⁵ of bronze and certain blade forms of iron appear first in Stratum VI.

⁴² Cf. the lead figurine of a hawk(?), No. 3195, found in Plot XXIII at a depth of 1.70 and described in *OIP* VII 41.

⁴³ See *OIP* VII 51 ff.

⁴⁴ No. 1129 in Plot 43, No. 1013 in Plot 39, No. 739 in Plot 27, and No. 3112 in Plot XII.

⁴⁵ One in rubbish on the west part of Mound A and No. 989 in a dump heap.

⁴⁶ No. 1540 in Plot V, No. 1972 in Plot X, No. 2823 in Plot XXV, Nos. 2740 and 2741 in Plot XXIII, No. 2050 in Plot X Stratigraphic Annex, No. 3131 in Plot XIV, No. 3119 in Plot XIII, No. 2699 in Plot XXII, No. 982 on the surface near Plot XIII, and No. 1303 on the surface west of Plot VIII.

⁴⁷ No. 178 in Plot 8, No. 224 in Plot 12, No. 926 in Plot 26, No. 519 in Plot 23, No. 744 in Plot 29, and No. 579 in Plot 24.

⁴⁸ No. 1050 in Plot 3S. ⁴⁹ No. 815 in Plot 32. ⁵⁰ No. a 53 (bronze) and No. a 75. ⁵¹ No. a 283.

⁵² See British Museum, *Catalogue of the Greek Coins of Galatia, Cappadocia, and Syria*, by Warwick Wroth (London, 1899) pp. 87–88.

⁵³ Two other bronze coins found in 1929 were undecipherable. Both were near the mound surface.

⁵⁴ We assume that most of the copper objects of Stratum VI have a sufficiently large percentage of tin to be called bronze, but only a chemical analysis can definitely determine the composition of the individual objects.

⁵⁵ See *OIP* VII 98 f.

BRONZE

Four bronze objects from Mound A are illustrated in Figure 166. No. a 73 is a socketed point found .20 below the surface. No. a 89 is a spatulate point found a little below Stratum VI. No. a 160 is a tube found in Level 1-2 (Stratum VI-Stratum V). No. a 170, a pair of tweezers, was found close to the preceding specimen.

The other bronze objects in Figure 166 were found in Stratum VI on the terrace. Spindle-shaped point No. b 875 was found in the layer of R 6 dated by Coin b 868*b*. It has a rectangular cross-section $.004 \times .003$. One end is square; the other, pointed. Points of this type persisted from Stratum I. No. b 2678, of the same type but with square cross-section, was

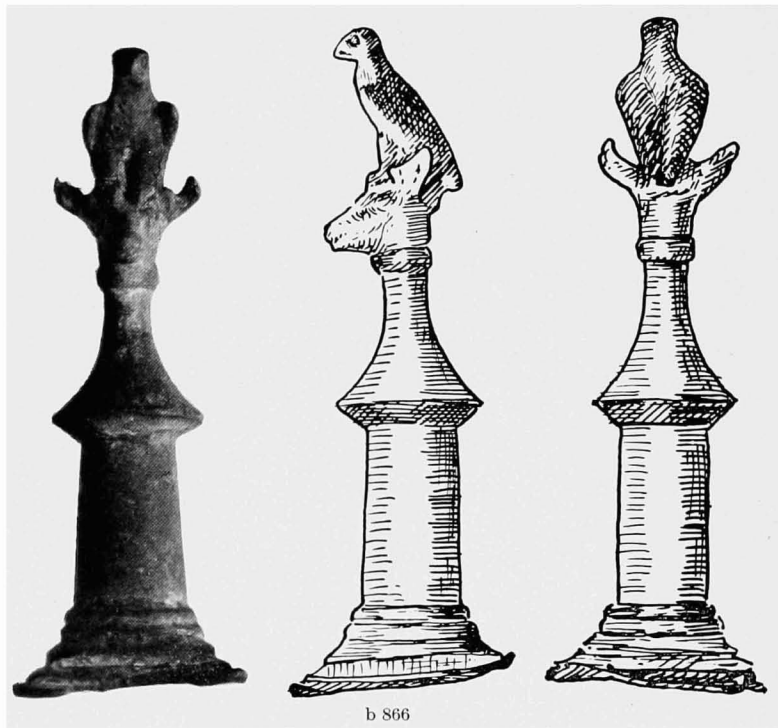


FIG. 164.—BRONZE FIGURINE OF A HAWK(?). ACTUAL SIZE



FIG. 165.—COIN OF ALEXANDER SEVERUS. SCALE, 2:1

.40-.80 below the surface in Q 33. Chisel b 1650 (0-.50 deep in GG 9) has a cylindrical shaft, a flattened head, and a beveled chiseling edge. No. b 914 from Level 1 in R 6 has a broad spatulate end. The opposite end is pointed, perhaps for attachment to a handle. Tweezers b 1515 were found at a depth of 0-.50 in HH 9. Two objects have spoon-shaped ends. No. b 2676 (Q 33, .40-.80 deep), with a round, ornamented stem, ends in a small spoon bowl. No. b 1519 (HH 9, 0-.50 deep) has a circular flat spoon end; incised bands separate a rectangular section from the otherwise circular stem.

Finger(?) rings are shown in Figure 167. No. b 2160 (CC 19, 0-.55 deep) has a rectangular cross-section with circular relief ornaments at the ends. It may be a fibula bent together. No. b 2108, with overlapping ends, was found during the removal of the Alishar VI structures in DD-EE 10. No. b 915 (R 6, Level 1) is a band ring expanding at one point, with traces of a circular setting. Disk b 867 (Fig. 167) was found in R 6 in the same pit with Figurine b 866 and Coin b 868*b*. It has two irregular perforations and a squared-off projection at one side (.001 thick). No. b 916, associated with structures of Level 1 in R 6, has a similar projection and one irregular perforation.

STRATUM VI

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IRON

With the exception of four iron rings obtained on Mound A, all the specimens here described were found on the terrace. The points shown in Figure 168 are presumably arrowheads and spearheads of the type known since Period IV. No. b 2098 (FF 19, 0-.15 deep) is a fragmen-

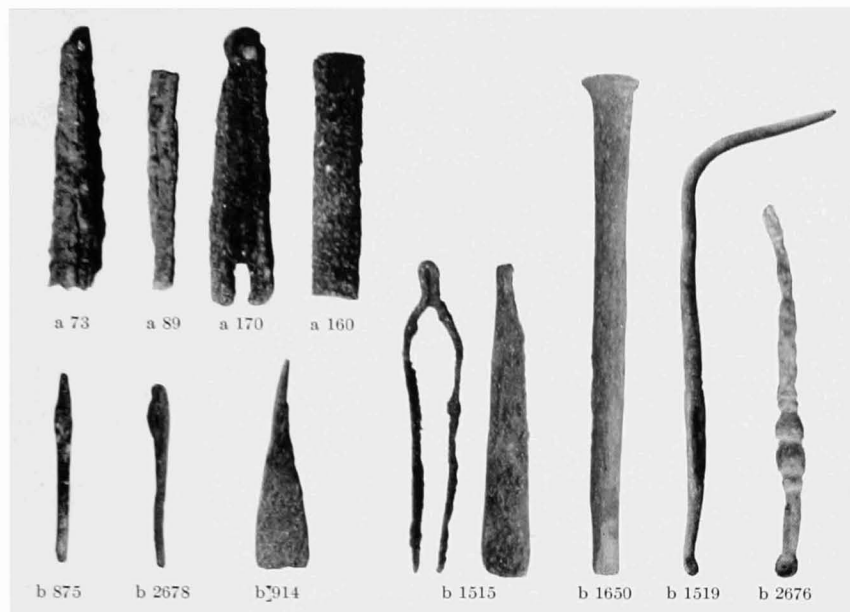


FIG. 166.—MISCELLANEOUS BRONZE OBJECTS. SCALE, 2:3

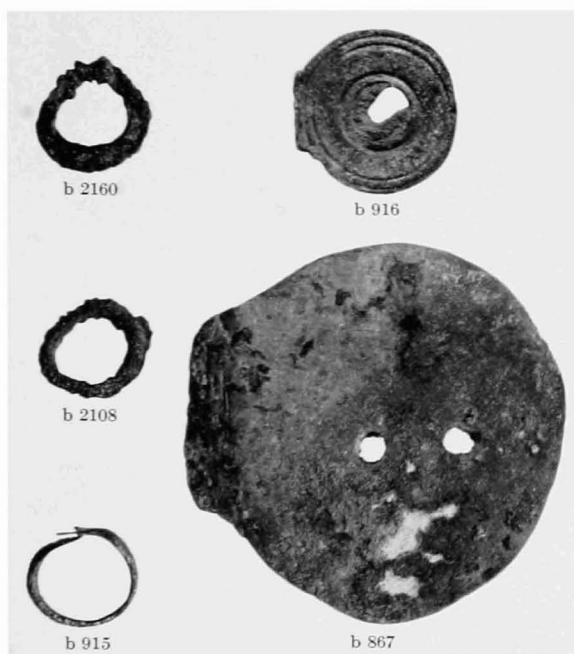


FIG. 167.—BRONZE RINGS AND DISKS. SCALE, 2:3

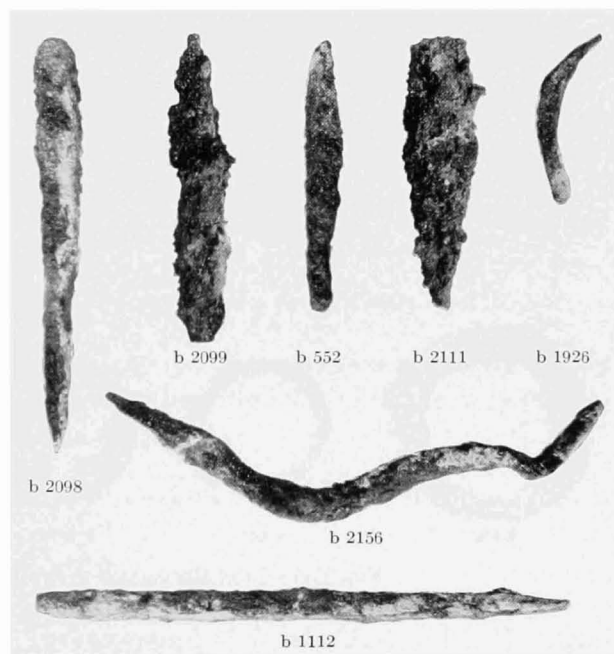


FIG. 168.—IRON WEAPON POINTS. SCALE, 2:3

tary point, perhaps spindle-shaped, .007 square in cross-section. The following points also are square in cross-section: No. b 2099 (FF 19, 0-.15), .006 square; No. b 552 (AA 16, .30-.80), .0055 square; No. b 2156 (CC 19, 0-.55), .006 square; and No. b 1112 (DD 20, 0-.10), .005 square. No. b 2111, found during the removal of Alişar VI structures in DD-EE 10, is

a lanceolate fragment about .004 thick. No. b 1926 was intrusive in Stratum II (DD 19, .50-.90). It is a curved spatulate fragment with flattened and flaring edge.

Blade fragment No. b 1483 (Fig. 169) occurred at a depth of .20-.80 in FF 11. Nos. b 2001 (DD-EE 10, 0-1.00 deep) and b 549 (X 19, 0-.30) are one-edged blades with tangs for attachment to handles. Celt b 2627 (.005 thick) was in a layer 0-.40 deep in Q 33. Tack(?)



FIG. 169.—IRON BLADES AND MISCELLANEOUS IRON OBJECTS. SCALE, 2:3

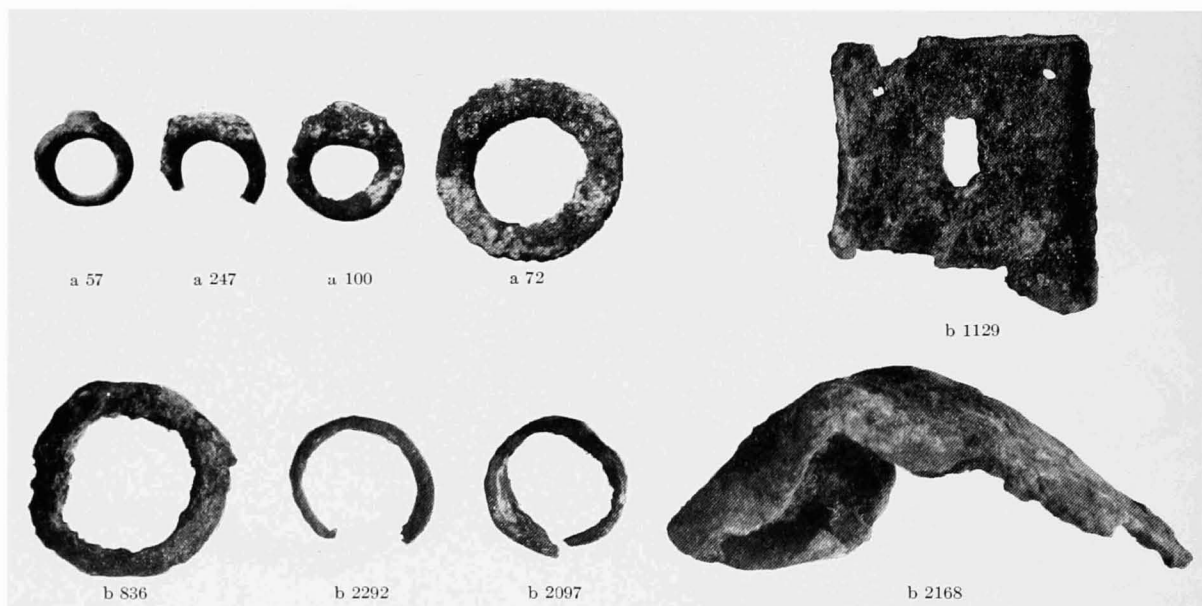


FIG. 170.—IRON RINGS AND MISCELLANEOUS IRON OBJECTS. SCALE, 2:3

b 2276 (BB 19, 0-.30 deep) is fragmentary. The shaft is rectangular. Nail b 1725 (HH 8, 0-.30) has a discoid head and a bent rectangular shaft. This specimen may have belonged to the Roman hoard (cf. p. 95). Needle b 580 occurred in refuse 0-2.00 deep in AA 16. Needle(?) b 2284, the eye of which is missing, was at a depth of .30-.80 in BB 19.

The first four rings in Figure 170 were obtained on Mound A, the rest on the terrace. Finger rings Nos. a 57 and a 247 were both found in dump soil from the mound top and may possibly be of Alishar V origin. No. a 57 has a discolored frit setting. No. a 247 and No. a 100 (M 12,

Level 1, low) have circular expansions as bezels. No. a 72 (M 12, .20 below surface) is a plain, flattened ring. No. b 836 (R 6, 1.00–1.50) has a rectangular cross-section $.003 \times .006$. No. b 2292, with rectangular cross-section $.003 \times .004$, appeared in the upper Alişar II level in CC 19; but some *terra sigillata* and Alişar VI glass fragments in the top layer indicate that this ring was an intrusive Period VI object. No. b 2097 (FF 19, 0–.15) is a fragmentary band ring, $.002 \times .014$ in cross-section.

No. b 1129 (Fig. 170) occurred in an Alişar II deposit (Z 27, .60–1.15 deep); but we have no doubt that it intruded from above, where *terra sigillata* sherds were found on and just below the surface. The fragment (.0015 thick) is rectangular, with turned-up edge, small perfora-

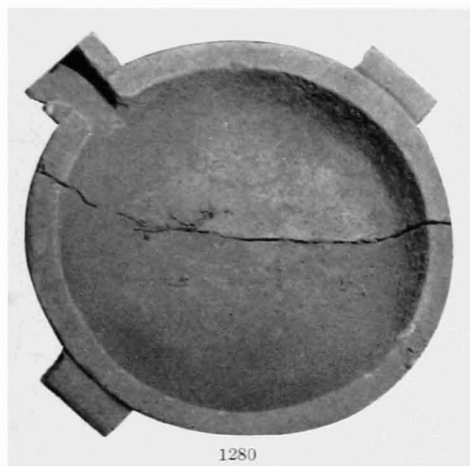


FIG. 171.—STONE BOWL. SCALE, 1:4

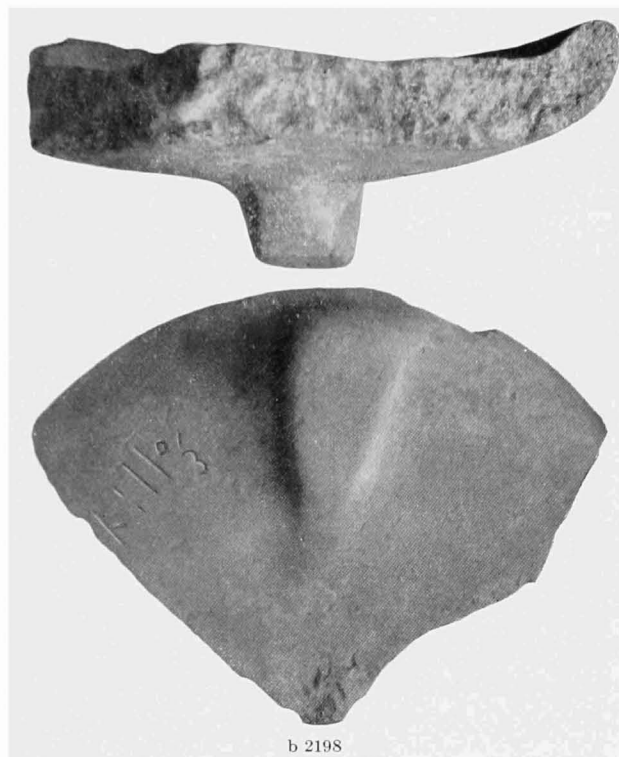


FIG. 172.—FRAGMENT OF A STONE VESSEL. SCALE, 1:2

tions for attachment in two corners, and a large rectangular hole near the center. No. b 2168 (Fig. 170), found during the removal of Alişar VI structures in DD–EE 10, is a large rectangular fragment bent out of shape.

Metal objects found in the Roman hoard were described on page 97; a bronze figurine, on page 105.

STONE OBJECTS

The number of stone objects from Stratum VI is small. The most interesting specimen is Vessel 1280 (Fig. 171), found .40 below the top of Mound A in Plot 45 of 1927 (cf. Fig. 186). It is made of grayish white limestone(?). The shallow bowl, .061 high, rests on a ring bottom .005 high and .122 in diameter. The diameter of the rim is .222. The bottom is .013 thick; the body, .019. The handles are somewhat trapezoid. Seen from the front, the spout is modeled in curved steps widening toward the front. Below the spout is a design in low relief, a heart-shaped figure with a stem. The stem reaches to the ring bottom. A fragment of another vessel, No. b 2198 (Fig. 172), was in a pit in DD–EE 10, 1.80 below the surface. This vessel is

made of rather soft greenish gray stone. Its diameter was approximately .24, and it probably stood on three solid feet. On the bottom near the left-hand fracture is a fragmentary inscription in Greek characters (Byzantine?).

No. b 1019 (Fig. 173), part of a pestle, found at a depth of .25-.60 in S 23, may belong to Period VI. It is of polished grayish white quartzite(?) and has a convex base.

Bead b 539 (Fig. 173), found in AA 16 at a depth of 0-.30, may belong to Alişar VI. It is made of polished quartz(?), white with light brown stains, hexagonal in cross-section.

A stone lid(?) and two stone beads were found in the Roman hoard (cf. pp. 97 and 101). Stone spindle whorls were described on page 104.

BONE OBJECTS

Bone objects are rare in Stratum VI, and there are no characteristic specimens. Disk b 870 (Fig. 174) was found in a pit in R 6 (cf. p. 93). It is light brown with dark brown stains and is polished. One side is somewhat conoid. No. b 2002, light gray-brown and polished, was

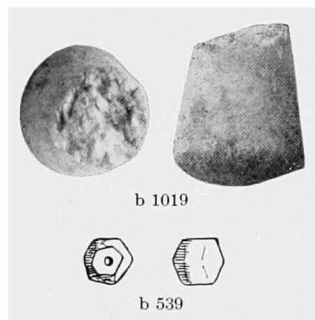


FIG. 173.—STONE PESTLE AND STONE BEAD. SCALE, 1:2

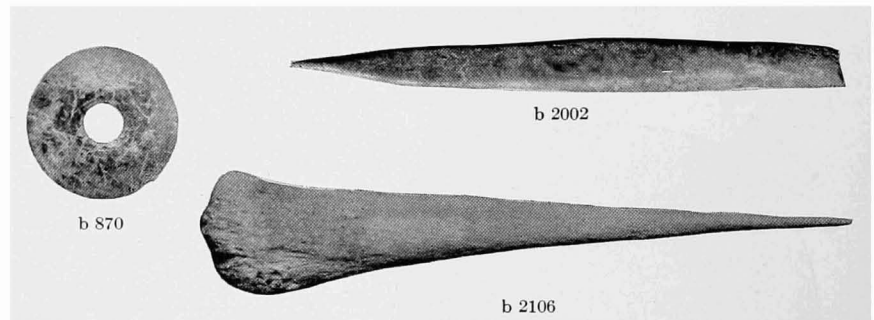


FIG. 174.—BONE DISK AND BONE AWLS. SCALE, 2:3

found in a layer 0-1.00 deep in DD-EE 10. It is an awl or similar implement, identical with some specimens of Alişar II. Awl b 2106, found during the removal of Stratum VI structures in DD-EE 10, might have occurred in any stratum from Alişar I on.

GLASS, FAYENCE, AND FRIT

Most of the glass and fayence(?) objects found in Stratum VI were beads. The chronology of this class of objects is still very uncertain. During 1929 we observed that eye beads, which we had previously attributed as a rule to Alişar VI, were actually more frequent in Stratum V; for large groups of eye beads occurred in Levels 2 and 3 on Mound A and in the fortress complex. This raises the question as to the antiquity of what we have called a "Roman hoard" (pp. 95-101). It may be earlier, perhaps Hellenistic.

The beads illustrated in Figure 175 were obtained in the various test plots excavated in the mound terrace. They are only tentatively attributed to Alişar VI. Glass bead No. b 337, found high in Level 1 of L 3 (late Alişar V?), is a dark blue ring ornamented with a white thread. No. b 527, found 0-.10 deep in J 3 (late Alişar V?), is of dark blue fayence or glass with a white band. No. b 2100 (FF 19, 0-.15 deep) is of dark blue glass with a white equatorial band. No. b 2071, found in HH 9 in dump soil of Level 1 of Stratum II, was intrusive from the Alişar VI layer. It is a light gray iridescent glass tube with a white spiral thread. Nos. b 636 (Y 7, .10-.90 deep) and b 2022 (DD-EE 10, Level 1) are identical with the barrel-shaped glass beads frequent in Stratum V. No. b 636 is decorated with two or three white zig-

STRATUM VI

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zag lines over dark blue; No. b 2022 is plain dark blue. No. b 590 (X 19, .90-1.50 deep) is a fluted glass or fayence bead, grayish white, iridescent, with one light blue and one dark brown

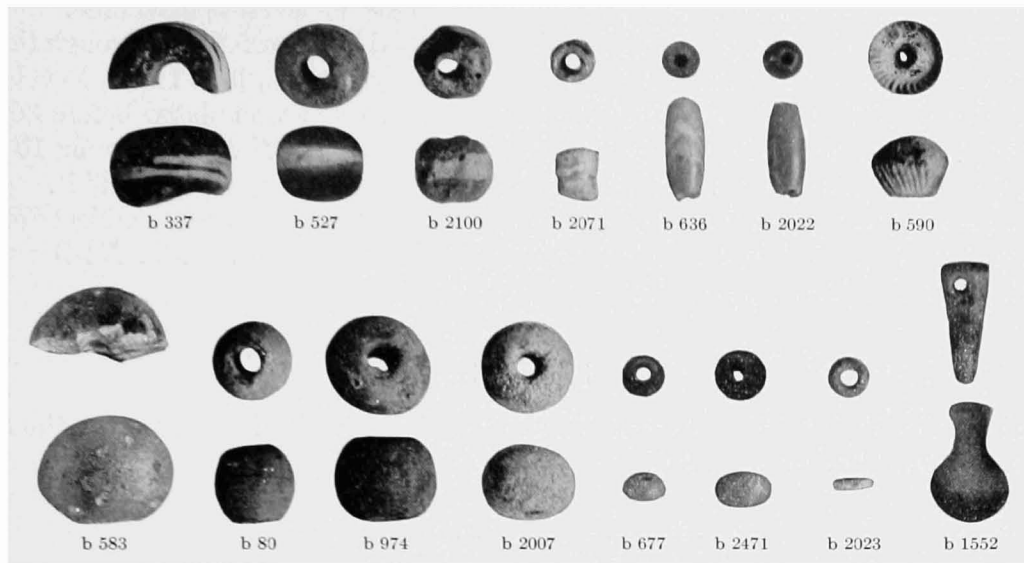


FIG. 175.—GLASS AND FAYENCE BEADS. ACTUAL SIZE



FIG. 176.—SKELETON b X38 IN CIST 5 IN LEVEL 1 OF DD-EE 10

stain. No. b 80 (L 5, .20-.30) is dark blue stained with copper-colored iridescence. Fine horizontal incisions encircle the bead. No. b 974 (R 6, Level 1) is a dark brown fayence(?) bead with two thin bluish green veins. No. b 2007 (DD-EE 10, 0-1.00 deep) is of rather soft

fayence(?), light gray with silvery iridescence. No. b 583 (AA 16, 1.40-2.00) is of very light greenish blue glass with iridescent spots. Nos. b 677 (Y 7, 1.50-2.10) and b 2471 (J 33, 0-.40) are of dark blue glass. No. b 2033 (DD-EE 10, Alishar VI level) is light blue.

No. b 1552, of greenish glass, is a flattened bottle-shaped bead perforated through the neck. It may not belong to Alishar VI; for it appeared, curiously enough, in L 14-15, Levels 10-11 (Stratum I), a deposit which, according to our estimate, was accumulated before 3000 B.C. Presumably this bead had either dropped down from the edge of the trench some 10 meters above or (in spite of his denial) had been brought in by the laborer who "found" it.

Fragments of glass vessels were found in Level 1 of R 6 and elsewhere. Objects of glass, fayence, and frit found in the Roman hoard were described on pages 99-100. A frit setting in an iron ring was described on page 108.

SHELLS

The only shells attributable to Stratum VI were two beads which formed part of the Roman hoard and are described on page 101.

DISPOSAL OF THE DEAD

Only one burial, b X38 (Fig. 176), can be attributed to Alishar VI with some degree of certainty. The skeleton, that of an adult female(?), was in Cist 5 in Level 1 of DD-EE 10 (cf. p. 95), inclosed by a low stone wall and associated apparently with the Alishar VI buildings west of it. The position of the skeleton was ventral, with contracted legs, extended right arm, and flexed left arm. The preservation was poor. There were no mortuary gifts.

Skeletons uncovered in 1927 and tentatively attributed to Period VI are Nos. X1-2 in Plot X Stratigraphic Annex, X1-2 in Plot 53, and X1 in Plot 55.⁵⁶ All are very uncertainly dated. According to our present knowledge, Skeletons X1-2 of Plot 53 may have been buried during the late phase of Period V, and X1 of Plot 55 during any period succeeding Period IV.

It is probable that the dead of Alishar VI were disposed of in extramural burial grounds. Low elevations in the environment of the *hüyük* may cover cemeteries of this and other periods.

⁵⁶ See *OIP* VII 5-6 and 28-30 and *OIP* VI 117 and 241.

III

STRATUM VII

Period VII lasted from A.D. 1071 to our own day.¹ The Seljuk Turks, a Turanian tribe converted to Islam, had left their homeland in Turkestan and had established themselves in Persia early in the 11th century.² In 1064 they conquered Armenia and invaded the eastern provinces of the Byzantine Empire (cf. page 90). In the fateful battle of Manzikert in 1071 the Seljuks, led by Alp Arslan, completed the conquest of Asia Minor. During the years following this disaster the interior of the peninsula was reduced to little more than a desert, which supplied hardly more sustenance to the people than that required for a semi-nomadic life.³ The Seljuks ruled an "empire" reaching from the Bosphorus to Afghanistan. After 1092 this empire began to break up. Kiliç Arslan, who ruled in Asia Minor, was defeated in 1097 by the army of the First Crusade and forced to withdraw his capital from Nicaea to Iconium (Konya).⁴ There the Seljuk sultans ruled, Mohammedanizing the natives and small groups of nomadic intruders.

In 1244 hordes of Mongols swept into Asia Minor, defeated the Seljuks at Erzincan, and penetrated as far as Ancyra.⁵ Legend says that the Ottoman Turks (Osmanlı) arrived from east of the Euphrates at this time and under Ertoghrul aided the Seljuks in driving out the Mongols.⁶ In gratitude the Seljuk sultan allotted to the newcomers the district around Eskişehir, near the border of Bithynia. Ertoghrul's successor, Osman I, had many affrays with the neighboring Greeks even before the final disappearance of the Seljuk sultans in 1300. In 1326 Osman took the city of Brusa and made it his capital.⁷ His successors extended their rule over the Greek cities in Asia Minor. In 1353 they entered Europe,⁸ and before 1400 the states of the Balkan peninsula had become Turkish provinces.⁹ Constantinople was a mere oasis in Turkish territory.

A second Mongol invasion, this time under Timur (Tamerlane), devastated Asia Minor from 1400 to 1403. Turkish rule seemed to be annihilated by the Battle of Ancyra (1402). Timur raided all Asia Minor, but could not cross into Europe. He then turned his attention to the Far East, but died in 1405.¹⁰

Mohammed I re-established the Osmanlı power, kept the European territories, and recovered most of Asia Minor.¹¹ At last, in 1453, Mohammed II captured Constantinople (İstanbul) and set up his court there.¹² For more than four centuries Anatolia, as part of the Turkish Empire, was ruled from İstanbul. Our own generation has seen the final collapse of the House of Osman and the beginning of a new era for Anatolia, centered once more at Ankara, its capital in classic times, under the enlightened leadership of Gazi Mustafa Kemal Paşa.

SELJUK REMAINS

At present we know little about the settlement at Aşılar Hüyük during the Seljuk phase. A Seljuk occupation is suggested by a few coins of the 12th and 13th centuries and by a few pot-

¹ This historical résumé is based on William Stearns Davis, *A Short History of the Near East* (New York, 1923).

² Davis, *op. cit.* pp. 169-70.

³ *Ibid.* pp. 76-78.

⁴ *Ibid.* pp. 82 and 179.

⁵ Gelzer, in Karl Krumbacher, *Geschichte der byzantinischen Literatur*, 2. Auflage (München, 1897) p. 1046.

⁶ Davis, *op. cit.* pp. 181 f.

⁸ *Ibid.* p. 191.

¹⁰ *Ibid.* pp. 200 f.

¹² *Ibid.* pp. 209-14.

⁷ *Ibid.* pp. 186 ff.

⁹ *Ibid.* pp. 192-97.

¹¹ *Ibid.* pp. 202 f.

sherds resembling Rakka ware,¹³ perhaps imported from Mesopotamia. These sherds show bluish green glaze with darker, perhaps black, decoration and a silvery iridescent film. A number of Seljuk coins¹⁴ occurred in the area marked on the settlement plan (Fig. 177).¹⁵ Two coins were found in the excavation on Mound B near the slope of Mound A,¹⁶ one in the excavation on Mound A,¹⁷ and several in the surface soil on top of Mound A.¹⁸

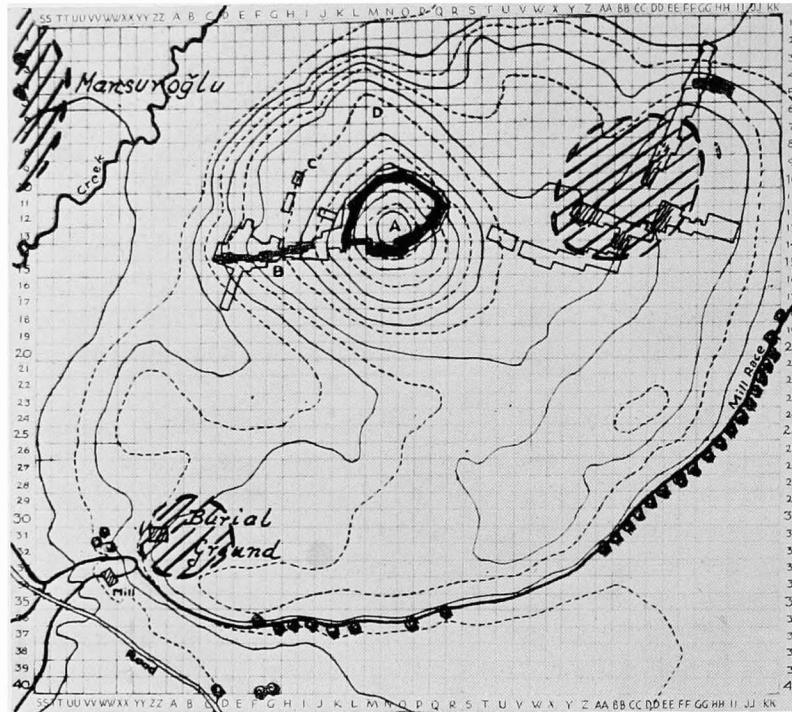


FIG. 177.—SETTLEMENT PLAN OF ALIŞAR VII

OSMANLI REMAINS

Weak remains of Turkish buildings were uncovered in 1927 in Plots VI, VII, VIII, and XIII,¹⁹ within the area marked on the settlement plan (Fig. 177). The occurrence of two *çibuk*²⁰ heads (Nos. 1762 and 1763) on the floor of one of the rooms dated them approximately, for tobacco was introduced into Turkey about the first half of the 17th century.²¹ Glass sherds and beads, plain and twisted glass bracelets, iron utensils, a horseshoe, and other objects of recent appearance were associated with the Osmanli layer.²² Bowl 3122 (Fig. 178) was found in a deep storage pit in Plot XIII at the level of Stratum II.²³ It has a buff paste coated with a greenish glaze and is decorated with black and yellow. Its time relation to other Osmanli

¹³ Cf. M. Pézard, *La céramique archaïque de l'Islam* (Paris, 1920) pp. 174 ff.

¹⁴ For description of coins found in 1927 see *OIP* VII 58-59.

¹⁵ No. 1733 in Plot VI, Nos. 3111 and 2180 in Plot XII, No. 2247 in Plot XIII and No. 2873 in Plot XXV.

¹⁶ No. 555 in Plot 23 and No. 566 in Plot 22.

¹⁷ No. 1151 in Plot 44.

¹⁸ Nos. 988, 1304, a 26, a 37, and a 38.

¹⁹ Described in *OIP* VI 128-31, 158-62, and 140-42. Cf. also the Turkish oven in DD-EE 10, described on p. 95 of this volume.

²⁰ Tobacco pipes. Cf. *OIP* VI 236 and Fig. 207.

²¹ W.S. Davis, *op. cit.* p. 259.

²² The material is in the Ethnographical Museum in Ankara and is not at present available for detailed description.

²³ Cf. *OIP* VI 141.

remains is uncertain. Plain vessels of presumably Turkish origin were described in an earlier volume.²⁴ On top of Mound A we found a single coin²⁵ of Sultan Suleyman I (1520-66) but no other objects definable as Osmanli. An Osmanli burial ground was uncovered in ZZ 31 in 1929.



FIG. 178.—GLAZED VESSEL



FIG. 179.—A NEW STORAGE PIT NEAR SIVRI KÖY

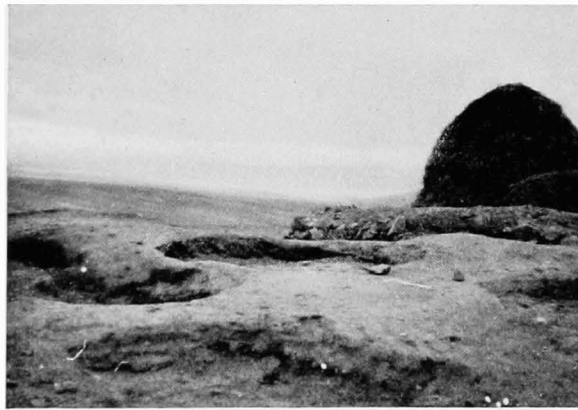


FIG. 180.—OLD STORAGE PITS FILLED WITH REFUSE, NEAR SIVRI KÖY

At this point archeology merges with ethnology. In the neighboring modern settlements of Alişar, Hosman, Çavuş Köy, and others, many culture features of the preceding epochs survive. As an example, Figures 179-80 explain the purpose of the many pits uncovered in all levels of the excavation. Figure 179 shows a new pit ready for the storage of grain. Its upper part is protected by a stone lining. The bottom and sides have been covered with straw, and

²⁴ *OIP* VI 246 f.

²⁵ No. 1097, found in Plot 42 of 1927; described in *OIP* VII 59.

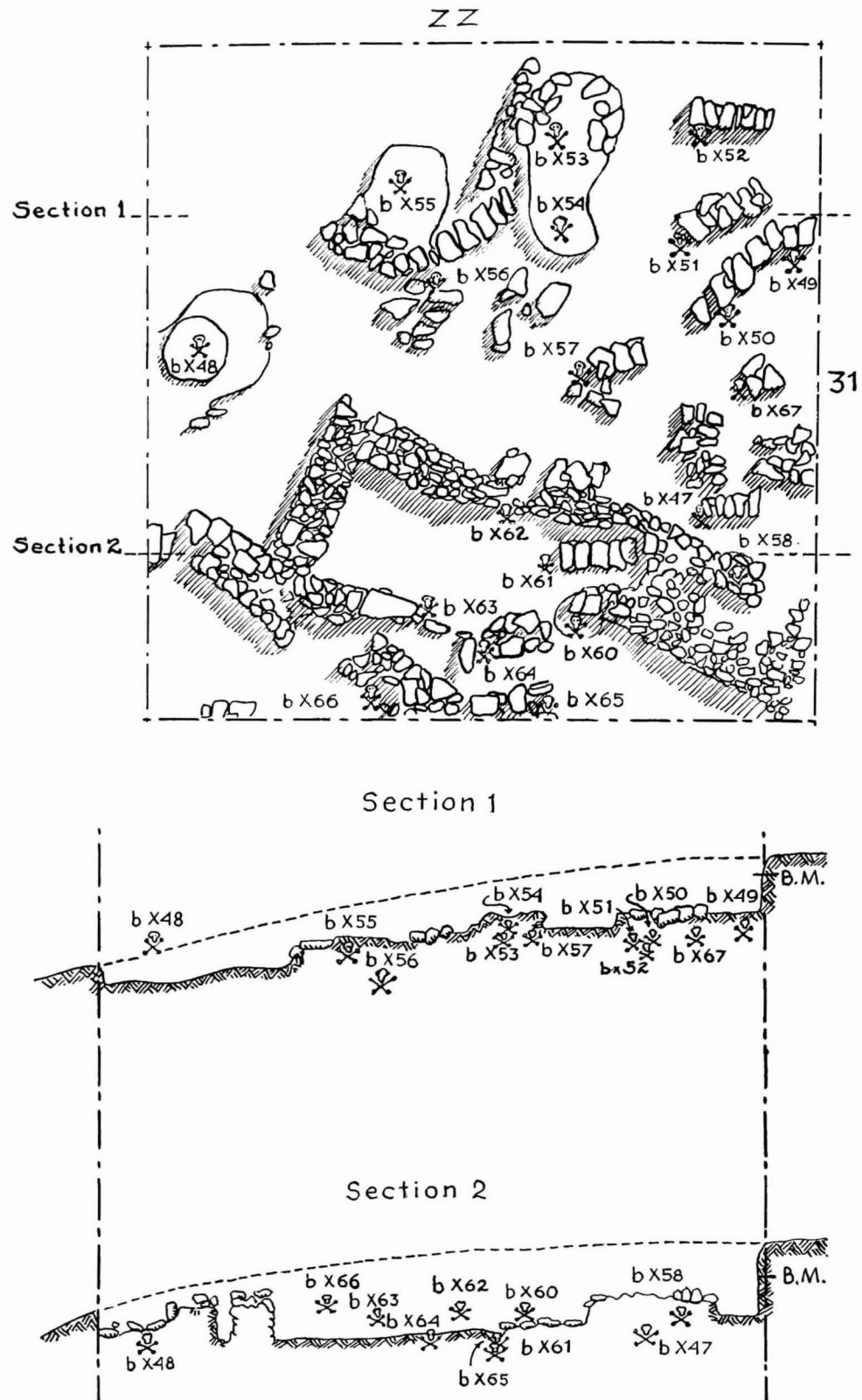


FIG. 181.—PLAN AND CROSS-SECTIONS OF ZZ 31, SHOWING POSITIONS OF BURIALS. SCALE, 1:100



FIG. 182.—EASTERN HALF OF ZZ 31, FROM NORTH



FIG. 183.—WESTERN HALF OF ZZ 31, FROM NORTH

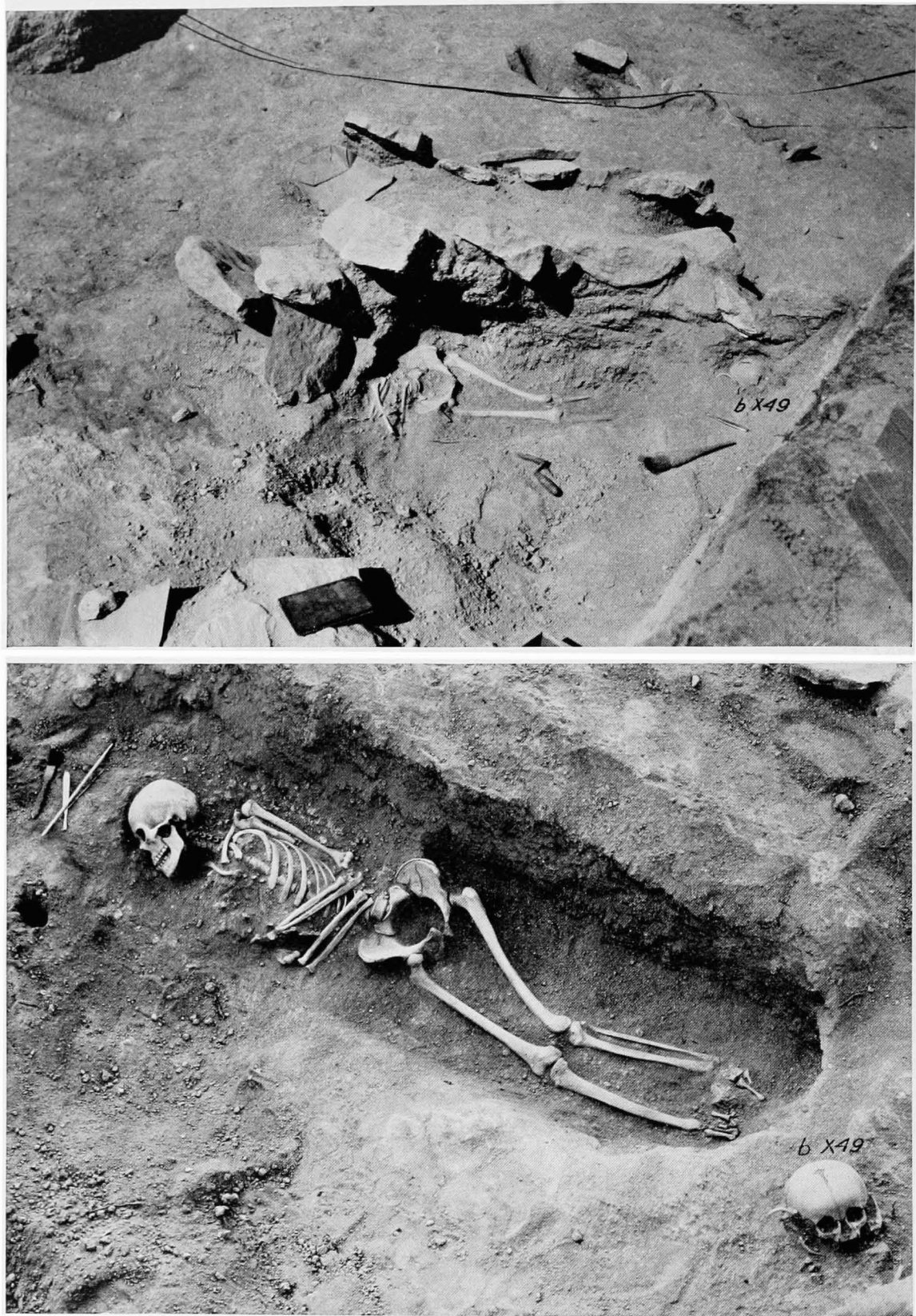


FIG. 184.—SKELETON b X50 AND SKULL OF b X49 BEFORE AND AFTER REMOVAL OF COVER SLABS

when the grain has been deposited another layer of straw will be spread over it with a layer of earth on top. Figure 180 shows old pits no longer suitable for storing grain, and therefore filled with rubbish.

The mound proper has not been inhabited within the memory of the oldest natives. Across the swampy creek to the west a few elevations and depressions mark the ruins of a supposedly Armenian village, Mansuroğlu, deserted within the last generation. Southwest of the Osmanli burial ground a watermill is still in operation; the mill race flows around the south edge of the terrace.

DISPOSAL OF THE DEAD

The most important find in Stratum VII was the burial ground in ZZ 31 (Fig. 181). Here we uncovered twenty burials (b X47-58 and b X60-67) .10-1.50 below the mound surface (Figs. 182-84). Skeleton b X59, a male adult, was found in E 35 during the digging of a small pit. Though not associated with any clearly defined objects, it seems to be Osmanli. The descriptions of nineteen of the skeletons from the burial ground indicate that child mortality was extremely high. Only two were certainly adults (about 21-40 years), both males; another male may have been an adult. There were also one female juvenile (about 14-21 years), three infantes II (about 7-14 years), and twelve infantes I (birth to 7 years).²⁶ Several skeletons were those of newly born children.

The mode of disposal corresponds to that of the present Moslem villagers. The laborers explained the procedure as shown in Figure 185. First they dig a trench long enough for the extended body. Then at the base of one trench wall they scoop out a lateral extension in which they deposit the body. After covering it with stone slabs leaning against the overhanging trench wall, they fill the grave. In the ZZ 31 burial ground the adults, the juvenile, and the infantes II were protected by cover slabs, whereas six of the twelve infantes I were more carelessly disposed of in plain earth.

The positions of eighteen skeletons suggest rather strict customs. Fifteen bodies had been placed on the right side. Only three had a dorsal position, and the skull of one of these lay on the right side. The lower extremities of sixteen skeletons were extended; in only two cases were the legs contracted. That these burials are Moslem is suggested by the definite orientation of the bodies. But Mecca lies about 23° east of south, whereas these burials lay on the average at right angles to that direction. Their angles of orientation varied through 60°, from 40° west of south to 80° west of north. It would seem, therefore, that the bodies were oriented with the sunrise or sunset rather than toward Mecca.

The preservation of the skeletons was fair or good. The skeleton of one newly born child was crushed.

We believe that these burials belong to the early part of the Osmanli period, but proof is lacking. Any surface tombstones which may have been erected had disappeared. Perhaps they had been used in the construction of now ruined buildings near the mill (cf. Fig. 177). The pottery found with the burials was more amusing than illuminating. In the first .40 the

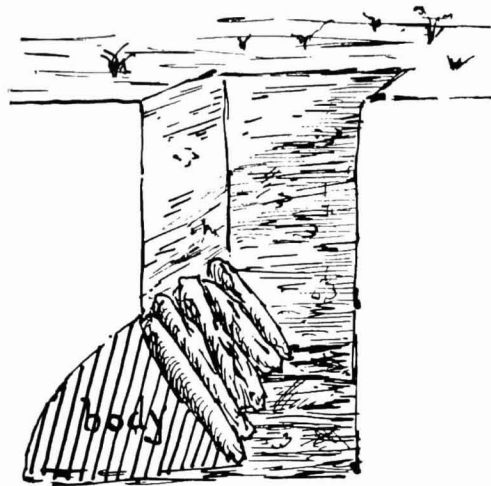


FIG. 185.—SKETCH SHOWING THE TYPE OF GRAVE USED BY PRESENT MOSLEM VILLAGERS

²⁶ The last two groups are of unidentified sex.

following sherds could be identified: two Turkish and one each of Strata V, IV, II, and I. Below this surface layer, in the southern part of the plot, there was an architectural level which had been disturbed by the digging of the graves. Three fragmentary stone walls, of the usual border-stone and filling type, inclosed a room the floor of which was about 1 meter below the surface. We attribute these walls to Period VI. In this level were found three *terra sigillata* sherds (Stratum VI) and four belonging to Stratum IV.

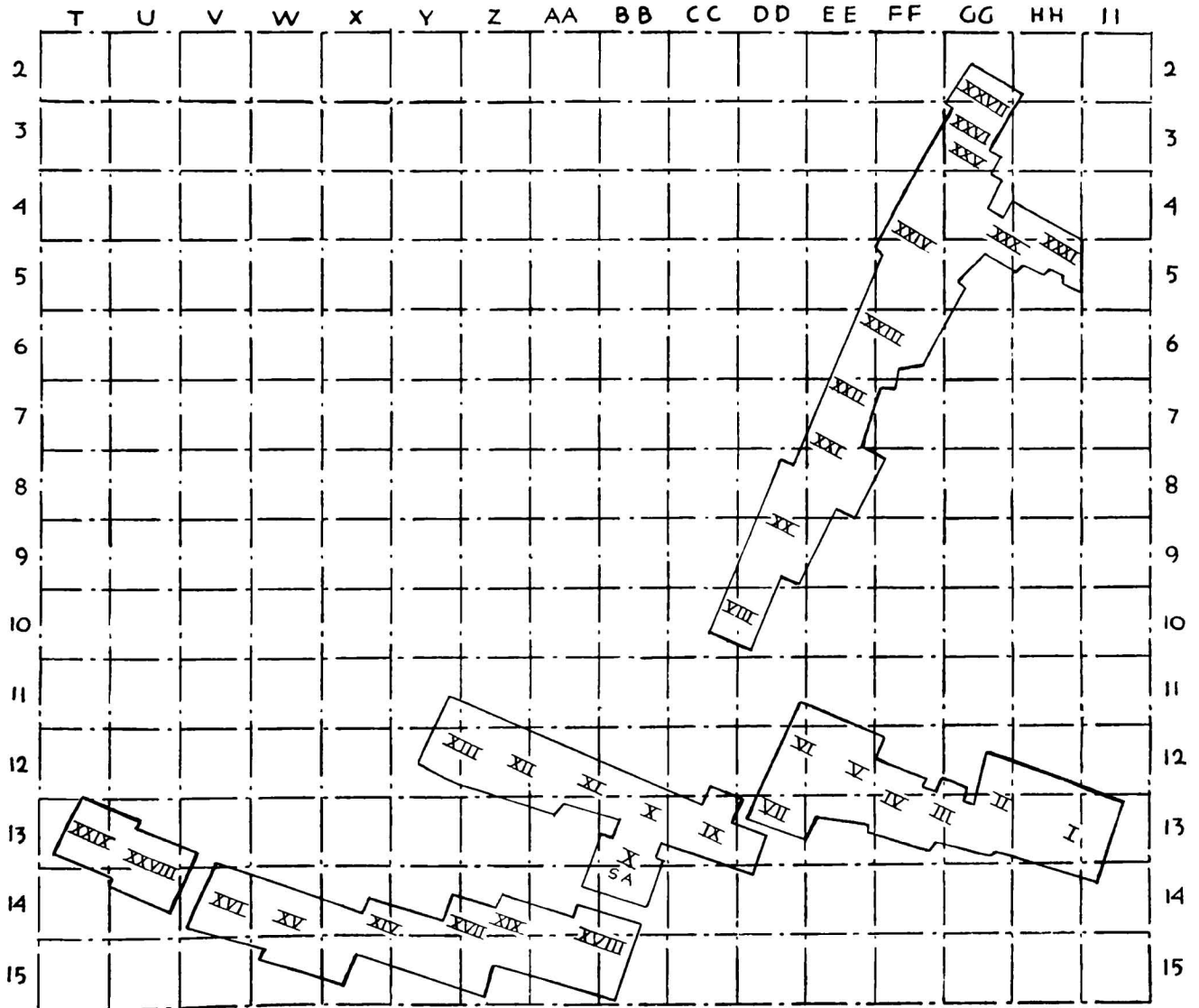
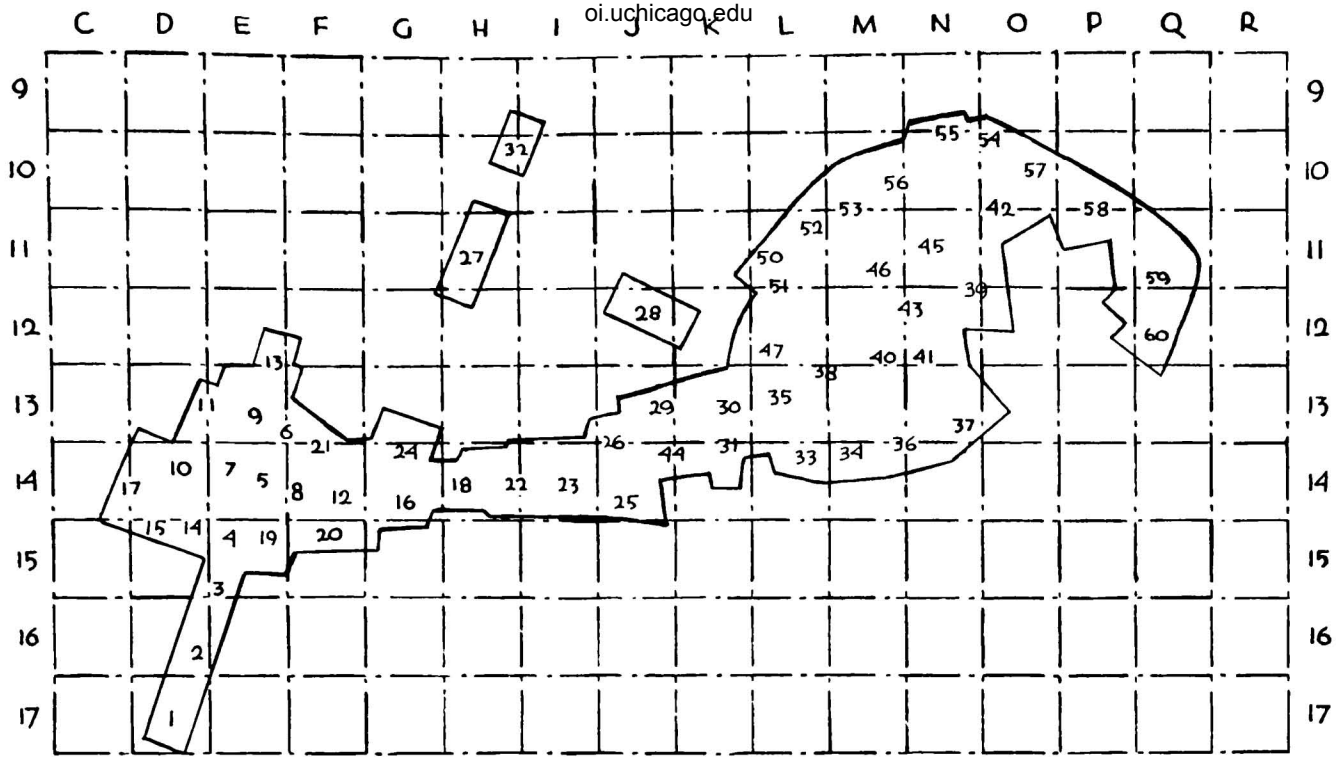


FIG. 186.—CORRELATION OF THE PLOT NUMBERS OF 1927 WITH THE LATER DESIGNATIONS

IV

THE CRANIAL TYPES¹

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In the past the physical anthropologist has been accustomed to speak of "races" and "race movements" in terms of skeletal material too often but vaguely referred to a rather general area. By this I mean, citing an example pertinent to the present report, that the "Hittite race" has been defined by skulls purporting to come from the relatively vast area evidencing the former presence of Hittite *culture*. It must be obvious that this method has had inherent in it the neglect of local differences on the one hand, and the possibility of the inclusion of irrelevant material on the other. The division of the material into cultural or local groupings tends, however, by reducing the size of the sample, to vitiate its statistical import and to weaken the validity of any deductions based on the assumption that the sample is typical of the whole. It is therefore necessary to apply certain statistical tests adapted to small samples, as well as to determine whether the "Hittite" population at Alişar is likely to be related to other groups. Hence this report will first present the salient statistical and physical features of the Alişar crania and then consider their relation to one another and to other race groups associated with them through geographical or historical contact.

The material studied consists of forty-eight crania recovered at Alişar during the seasons of 1927-31.² They are distributed as follows:

Period	Child	Adult Male	Adult Female	Total
I.....	2 { 1 male 1 female }	6	.....	8
II.....	1 male	8	3	12
III.....	1 male	2	.....	3
IV.....	1 female	4	.....	5
V.....	3 { 1 male 1 female 1 unclassified }	4	2	9
VI.....	1 female	1	1	3
Osmanli.....	4 unclassified	4	.....	8
Total.....	13	29	6	48*

* The attributions of these crania to individual periods are in various instances less certain than could be wished.

¹ This report on the Alişar crania was rewritten and enlarged, and the comparative and statistical data were collected, while the writer was studying at the Royal College of Surgeons of England and the Biometric Laboratory of University College of London as a Fellow of the National Research Council (1930/31). To Sir Arthur Keith, conservator of the Royal College, to Miss Miriam Tildesley, research assistant in charge of human osteology, and to Drs. Egon S. Pearson and G. M. Morant of University College, he is indebted for many valuable and helpful suggestions. Further revision was involved in the addition of the 1931 material (cf. p. 125).

² On the material of the earlier years cf. Şevket Aziz, "Hittite'lerin kraniolojik tetkikatına methal," *Türk Antropoloji Mecmuası* VI (1930) N° 10, pp. 3-17, with summary in French on pp. 25-30.

Since skeletal material recovered after 1927 was retained in Anatolia, I was able to study at first hand only the crania recovered during the first season. Of those here discussed, six were adult males and two were female children about 8-10 and 12-14 years of age. Five (Nos. 3209, 3200, 3224, 3212, 3203) were of Period I, and three (Nos. 3217, 3218, 3220) were of Period IV. Many of these crania required rather extensive restoration, in connection with which I am glad to acknowledge the efficient assistance of Dr. Henri Stearns Denninger. My study of the crania recovered subsequent to 1927 is based on restorations, measurements,³ and photographs made in the field by Mr. Richard A. Martin and other members of the expedition. The foregoing general conditions, together with the limited number of specimens, render all interpretations tentative. Yet the material appears to be significant, in that it offers suggestive evidence of a possible sequence of physical types associated with the archeological sequence.

Did the populations occupying Alişar remain racially the same through the successive periods, or did their composition change? To what extent can we rely upon a chance handful of individuals, such as we have here, to give us in miniature a picture of the group? Not until we have at least about fifty individuals, and those all of one race and of roughly the same stage of maturity, can we hope to feel any sort of confidence that our sample lot reflects, in its average characteristics and in the variety it exhibits, even a fair approximation to the averages and variability of the population to which it belongs.

To attempt comparisons of the successive populations of Alişar with one another by the ordinary statistical methods on the basis of the few individuals at our command would be well-nigh futile. Considerable attention has, however, been directed by statisticians to methods of extracting the maximum possible amount of information from small samples—that is, to scientific calculation of the betting odds as to characteristics of the population most likely to produce such samples. We shall therefore see whether we can make use of their researches to extract any useful information from our meager facts.

A test dealt with in a paper by J. Neyman and E. S. Pearson⁴ is the one most appropriate to the case under consideration, where we have no information about any of the total respective populations of Alişar I-VI except such as is yielded by the sample taken from each. We want to know whether the populations our samples represent were probably similar, or whether the processes of invasion, infusion, natural selection, conquest, emigration, etc. had brought about definite changes in the physical characteristics of the inhabitants of this site. The test to be applied, however, will be valid only if we are justified in making certain assumptions: (1) We must assume that, though the successive populations may have differed in their average characteristics, there was approximately the same amount of variation among the individuals comprising each population. Statistically expressed, the standard deviation is assumed to be the same for all the groups. But this may not be so. (2) We must assume that in all the groups represented the characteristics are distributed roughly according to the normal curve. This would not be the case if, for example, there had been a recent invasion on a considerable scale by people of a different physical type. (3) We must assume that each of our handfuls is a real random sample of the population to which it belongs. If, for example, we have here some individuals who are closely related to one another and possess a *family* resemblance, this third condition is not fulfilled.

Having made the foregoing assumptions, we may turn to a consideration of the data yielded

³ Because several crania were so damaged as to require restoration, many of the measurements given in Table I are approximations only. Since the crania are inaccessible, I cannot specify exactly which measurements are wholly or in part based on restorations.

⁴ "On the Use and Interpretation of Certain Test Criteria for Purposes of Statistical Inference," *Biometrika* XXA (Cambridge, 1928) 175-240 and 263-94. See esp. pp. 206 ff.

by the crania of the various periods. Tables I and II give the individual measurements and indices; Tables III and IV give the means for each group, together with certain comparative data to which reference will be made later. Let us select as our example the application of the test to the cephalic indices of five male skulls of Alishar I (mean c.i., 75.1; variance, 5.56) and eight male skulls of Alishar II (mean c.i., 79.8; variance, 15.33). Either the mean cephalic index of the total male population of Alishar I was the same as that of Alishar II or it was different. If the means were the same, we could consider the two samples as drawn from the same population (as regards c.i. only, of course) and add them together. We should in that case have a combined sample of thirteen male skulls with a mean cephalic index of 77.98 and variance of 16.89.

Now it is possible for statistical theory to determine what kind of normal population⁵ (as described by its mean and standard deviation) would have the best chance of producing a sample of thirteen with mean value of 77.98 and variance of 16.89. Also, although the likelihood even in these best possible circumstances might perhaps be quite small, it is possible to express the degree of likelihood algebraically.

Similarly estimates can be made of the likelihood of getting a sample corresponding to either Alishar I or Alishar II alone, in the best possible circumstances (determined as before). The population offering the best chance of producing Alishar I will probably have a different mean value from that most likely to produce Alishar II, though we make it a condition that their variance must be the same.

A ratio can be worked out between (1) the likelihood—call it L (max.)—of getting the combined sample Alishar I + Alishar II, in the best possible circumstances, from a *single* normal population and (2) the likelihood— L' (max.)—of getting these two samples, again under the most favorable conditions, from *two* normal populations with different means and identical variability.

This ratio, $\frac{L \text{ (max.)}}{L' \text{ (max.)}}$, will show which of the two likelihoods is the more probable. The formula is

$$\frac{L \text{ (max.)}}{L' \text{ (max.)}} = \frac{1}{(1+z^2)^{\frac{n_1+n_2}{2}}}$$

where

$$z = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{n_1 s_1^2 + n_2 s_2^2}} \sqrt{\frac{n_1 n_2}{n_1 + n_2}}$$

\bar{x}_1 = mean of first sample

\bar{x}_2 = mean of second sample

n_1 = number in first sample

n_2 = number in second sample

s_1^2 = variance of first sample

s_2^2 = variance of second sample

It will be clear from the foregoing equation that "the smaller be z , the less likely becomes the hypothesis of a single population compared to the alternative hypothesis of two populations differing in mean."⁶

The exact odds represented by any value of z , in favor of getting the combined sample from a single population, have been worked out and made into a table. To make use of it we need also the values of $t = \frac{1}{n_1 + n_2 - 2} \cdot z$ and $n' = n_1 + n_2 - 1$.

⁵ "Normal" is used throughout in its statistical sense, and the individuals forming the "population" are considered only as regards the particular character under observation. Here the "normal population" means one in which the values of the cephalic index are distributed according to the normal curve.

⁶ Neyman and Pearson, *op. cit.* p. 207.

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If the odds are very heavily against the hypothesis that the population was the same in Alişar I and Alişar II—less than one chance in one hundred, say—only then shall we feel justified in supposing that the populations were significantly different.

The application of the foregoing formulas to the mean cephalic, orbital, and nasal indices of Alişar I and Alişar II yields the following results:

COMPARISON OF ALIŞAR I AND ALIŞAR II*

Index	Number	Mean	Variance	t	P_t Outside $\pm t$	z	P_z
Cephalic:							
I.....	5	75.06	5.56	-1.96	.10	.4495	(z_{01}) 1.2164
II.....	6	79.27	14.23				(z_{05}) .8236
Orbital:							
I.....	5	87.08	27.14	+1.68	.16	.5258	(z_{01}) 1.3856
II.....	5	82.00	9.48				(z_{05}) .9272
Nasal:							
I.....	5	49.04	24.29	- .299	.50+	.1002	(z_{01}) 1.3856
II.....	5	50.14	29.68				(z_{05}) .9272

* The data in this table are based on crania recovered during the seasons of 1927-30.

The results indicate that the differences between Alişar I and Alişar II, as far as the indices chosen are concerned, are not greater than one would expect through random chance. For the cephalic index the t -scale indicates that in one instance out of ten mere chance would give a difference as great or greater than the ± 1.96 found to exist between I and II. As to the orbital index it appears that approximately one time in six, and for the nasal index one time in two, chance alone would produce deviations as great or greater than those observed. The values resulting from the use of the z -scale indicate for none of the indices a variation greater than that expected from mere chance for 1 per cent and 5 per cent of the total distribution.

It must be concluded, therefore, that the variability of Alişar I and Alişar II is probably not statistically significant, that is, that the two periods do not present distinct physical types, and that the two samples may well have come from the same population.

During the season of 1931 several more crania were recovered. Since two of these belong to Alişar II, the statistical data for the comparison of Alişar I and Alişar II must be revised. The results are presented in the following table:

COMPARISON OF ALIŞAR I AND ALIŞAR II

Index	Number	Mean	Variance	t	P_t Outside $\pm t$	z	P_z
Cephalic:							
I.....	5	75.06	5.56	-2.25	.05	.462	(z_{01}) 1.0300
II.....	8	79.80	15.33				(z_{05}) .7080
Orbital:							
I.....	5	87.08	27.14	+2.07	.07	.655	(z_{01}) 1.1068
II.....	7	81.77	7.85				(z_{05}) .7558
Nasal:							
I.....	5	49.04	24.29	- .347	.50+	.097	(z_{01}) 1.1068
II.....	7	50.10	21.44				(z_{05}) .7558

The conclusion reached previously is not altered; as demonstrated by both the *t*- and the *z*-scales, Alishar I and Alishar II do not differ significantly and may well have been drawn from the same population.

In addition the 1931 season yielded further archeological evidence as to the sequence of the culture periods. It would now seem that Alishar III preceded Alishar II, making the more probable sequence Alishar I, III, II, IV, etc.⁷ The change in sequence calls for comment, but unfortunately the data are too scanty to permit interpretation. Under the earlier sequence the mean cephalic indices were, in order, 75.06, 79.27, and 79.05. With the additional material and under the revised sequence (I, III, II), the means for the cephalic index are 75.06, 79.05, and 79.80. The indices of II and III are so nearly alike that an inversion of sequence throws but little light on a possible sequence of type. To this problem, however, we shall return later.

The significance of the variation in mean from period to period can be further tested by grouping all the male crania of the several periods together and ascertaining whether the mean values of each period differ more than expected through chance from the mean value of all periods taken as a whole. Accordingly all twenty-three male crania from Periods I-V have been grouped and mean values calculated. The deviations of the means and variances of the individual periods from the grouped mean and variance have likewise been determined.

The *1st estimate*, the deviation of means of individual groups from the grouped mean, was obtained from the expression

$$\frac{n_1(\bar{x}_1 - \bar{x})^2 + n_2(\bar{x}_2 - \bar{x})^2 + n_3(\bar{x}_3 - \bar{x})^2 + n_4(\bar{x}_4 - \bar{x})^2 + n_5(\bar{x}_5 - \bar{x})^2}{k - 1}$$

where $n_1, n_2 \dots$ = numbers in samples from the respective periods

$\bar{x}_1, \bar{x}_2 \dots$ = mean values of indices of samples from the respective periods

\bar{x} = mean value of index for combined samples

k = number of samples (each period group counting as one sample) employed

The *2d estimate*, the deviation of variances (squares of standard deviations) of individual groups from the grouped variance, was obtained from

$$\frac{n_1(s_1^2) + n_2(s_2^2) + n_3(s_3^2) + n_4(s_4^2) + n_5(s_5^2)}{n - k}$$

where $n_1, n_2 \dots$ = same as above

$s_1^2, s_2^2 \dots$ = variances of samples from the respective periods

k = same as above

n = total number in combined samples

These two estimates were then referred to the *z*-scale, so that $z = 1.1513 \left(\log_{10} \frac{1st\ estimate}{2d\ estimate} \right)$. The calculated data for this test are presented in the following analysis of the variations of the mean values of the several indices of each period as contrasted with the mean value of the combined samples:

⁷ This is the sequence adopted by Dr. von der Osten on the basis of the 1931 material. See *OIC* No. 11, pp. 152-59, and *OIC* No. 14, chap. i.

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Index	I	II	III	IV	V	Combined	z	P_z
Cephalic:								
Number.....	5	8	2	4	4	23		
Mean.....	75.06	79.80	79.05	71.00	73.62	76.10	1.363	(z_{01}) .7067
Variance.....	5.56	15.33	18.92	3.24	25.94	24.66		(z_{05}) .5371
Orbital:								
Number.....	5	7	1	3	2	18		
Mean.....	87.08	81.80	94.40	83.46	87.70	84.89	.4756	(z_{01}) .8248
Variance.....	27.14	7.85		8.55	19.36	25.56		(z_{05}) .5783
Nasal:								
Number.....	5	7	1	1	2	16		
Mean.....	49.04	50.10	53.00	53.10	51.70	50.34	.2840	(z_{01}) .8248
Variance.....	24.29	21.44			14.44	20.48		(z_{05}) .5783

One may interpret this analysis to mean that the cephalic index from period to period varies significantly as compared to the group cephalic index, whereas the orbital and nasal indices do not vary significantly.

We may sum up the interrelations of the cranial material of Alişar by stating that a comparison of single periods yields no direct statistical evidence of significant variability, but that grouped as a whole there seems to be some evidence of a variability in the cephalic index not expected from chance alone. The samples *may* come from different populations, but we cannot state exactly how they are related to one another.



FIG. 187.—SKULL OF b XS. ALIŞAR I

With this in mind I hesitate to describe the cranial type of each period. At most I can say no more of a given trait than that it predominates or tends to be usual in a given period. The range in any one period with respect to a specific physical trait is so great that a mean value is hardly typical. Yet for purposes of record I venture to present the major impressions made by the several crania attributed to each period and to offer tentative conclusions as to their interrelations.

The crania from Alişar I (e.g., Figs. 187–88)⁸ give on the whole an impression of frailty and small size. The face in particular conveys the idea of a small-boned people. The forehead, sloping gently back, adds to this general effect. The width of the face (across the zygomatic arch) and that of the forehead (at its minimum frontal diameter) suggest a rather high, nar-

⁸For measurements and indices of the individual skulls see Tables I and II.

row face. The mandible, with a weak corpus, a narrow ascending ramus, and small incisor teeth, carries out the picture suggested by the facial portion of the skull. In keeping with this general condition the sex characters of the skull are not strongly marked. The mastoids are small, and the external occipital protuberance is only faintly indicated. The supra-orbital ridges, however, are relatively well developed in males and evince a strong tendency to cross the median plane, presenting at glabella a characteristic and well defined eminence.

The form of the skull as viewed from above is roughly pear-shaped, with a rather marked post-orbital constriction. The cephalic index ranges from 70.9 to 78.1 in the adult males. In all probability the mean index for the entire population, represented here only by this small sample, would be in either the upper range of dolichocephaly (73-75) or the lower range of mesocephaly (75-77). Actually the mean cephalic index of the five adult males of Alişar I is 75.1. The skull is chamaecranic (mean height-length index is 65.2) and presents a fairly well vaulted forehead. But by far the greatest cranial development is found in the occipital region, in keeping with the fact that the lambdoid is the most complex of the sutures of the vault. In



FIG. 188.—SKULL OF c X20. ALIŞAR I

general, however, all the sutures are slightly below average complexity. The occipital bone tends to present a rather marked bulge just below lambda.

The orbital aperture is squarish, with a slight downward slope. The nasal aperture is high and narrow, nasion is well elevated, and the nasal bones meet at a sharp angle. The nasal margin is not well defined and tends to be troughed, merging into the alveolar portion of the maxillae. The palatal arch is parabolic and the palate rather deep and short. The teeth are small. The first molar is four-cusped, plus-shaped, and the largest of the three. The second molar and especially the third tend to be compressed so that the transverse diameter greatly exceeds the antero-posterior diameter. Furthermore, the long axis is obliquely forward and outward, and the teeth seem to be tricuspid, one cusp internal (lingual) and two external (buccal). The mandibular teeth are small, especially the incisors. The molars are four-cusped, with the first molar the largest. As viewed in profile there is a slight tendency, more pronounced in the male crania, to both facial and alveolar prognathism.

The crania of Alişar I may be summarized as predominantly weakly mesocephalic, chamaecranic, mesorrhinic, and hypsiconchic, with forehead fairly well arched, occipital region well developed, narrow high nose, narrow face of average height, slight prognathism, and a generally rather weak development of sex characters in male crania.

The Alişar II crania (e.g., Figs. 189-91) show a definite tendency to brachycephaly, offering a range in cephalic index of 73.6 to 85.3, with an average of 79.8, for eight male crania. The



FIG. 189. SKULL OF b X32. ALIŞAR II



FIG. 190.—SKULL OF b X44. ALIŞAR II

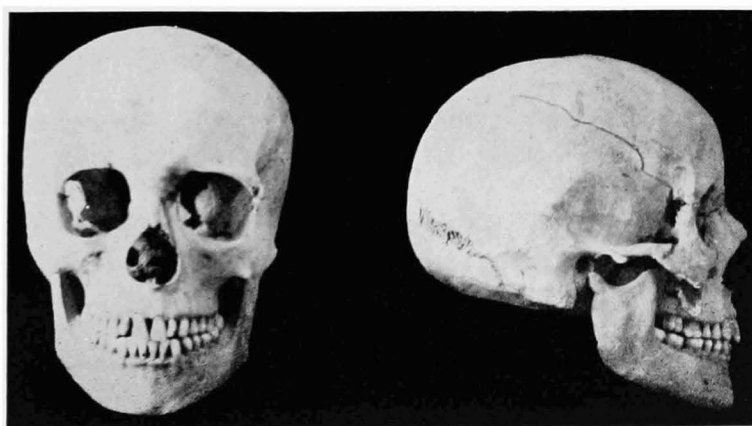


FIG. 191.—SKULL OF b X35. ALIŞAR II

skull tends to be fairly well vaulted and is slightly higher than that of Alişar I, with a height-length index of about 68.6, which brings it almost within the range of orthocephaly. The occipital region of the skull is not so markedly developed as in Alişar I. The most radical departure from the crania of Alişar I is to be noted in the face. The Alişar II crania are definitely short- and broad-faced. The width across the zygomatic arches and the minimum frontal diameter are both greater than in Alişar I. The face in general is strong and massive, the edge-to-edge bite of the teeth enhancing this impression. Seen in profile, the nasal bones project to some extent; but the face in its entirety yields little impression of prognathism. The sex characters,

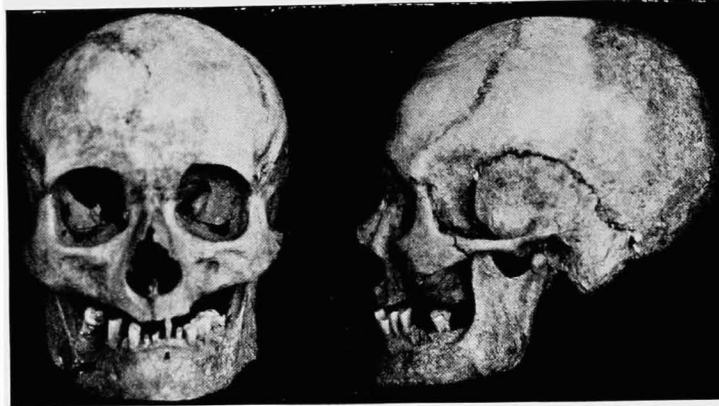


FIG. 192.—SKULL OF c X16. ALIŞAR III



FIG. 193.—SKULL OF c X7. ALIŞAR IV

in keeping with the more rugged appearance of the skull, are well developed, the males possessing heavy supra-orbitals, massive mastoids, and well defined muscular impressions on the nuchal portion of the occipital.

The crania of Alişar II, tending to be subbrachycephalic and orthocranic, with well vaulted forehead, definitely chamaerrhinc and mesoconchic, short- and broad-faced, rugged, orthognathous, with well developed sex characters in the male, appear to differ in many respects from those of Alişar I. Granted that certain of the features bespeak either a more or less general relationship or the possibility of partial mixture, yet one cannot escape the feeling that, as far as the critical evaluation of physical differences is concerned, the crania of Alişar I and Alişar II present evidence of having been drawn from different populations—evidence which, as we have seen, is not wholly supported statistically.

With respect to the Alişar III crania (e.g., Fig. 192) little can be said except that in a general way they resemble those of Period II.

The crania of Alişar IV (e.g., Fig. 193), on the other hand, are more like those of Period I. The same general impression of frailty is given by the narrow, high face, gently retreating forehead, and weak indication of sex characters, that is, small supra-orbitals, small mastoids, and slight muscle attachments. The mean indices of four male crania offer a cephalic index of 71.0 and a height-length index of 62.3. In short, there seems to be a definite relationship between the physical types of IV and I.

If we may permit ourselves a bit of conjecture, the racial picture sketched for us by the changing physical types in Periods I, II, III, and IV is a fascinating one. Accepting I as basic, with dolichocephaly or submesocephaly and chamaecephaly, we witness the shift to the sub-brachycephaly and suborthocephaly of II, both tending to be carried on in III. Alişar II and Alişar III are so similar in physical type that the change in archeological sequence suggested in 1931 (cf. p. 126, n. 7) does not seem to affect our interpretation of the probable interrelationships of the physical types. Alişar IV shows pronounced dolichocephaly and chamaecephaly. It seems probable that I and IV are fundamentally of similar physical origin. However, there is a change from the mesocephaly or weak dolichocephaly of I to the pronounced dolichocephaly of IV. To all appearances this change must have occurred prior to the appearance of IV at Alişar, for the type of Periods II-III certainly offers no hint of a tendency to dolichocephaly.

The succeeding physical types at Alişar are vague until the appearance of the relatively modern Osmanli. Period V is represented by four males; Period VI, by one. With the exception of b X4 (Fig. 194) in Period V and d X12 in Period VI, the dolichocephaly of IV evidently persists (Figs. 195-96); yet with such inadequate material one hesitates to make any definite statement.

The Osmanli type (Figs. 197-98), with extreme brachycephaly, marked hypsicephaly, and a short, broad, non-prognathous face, represents a physical type foreign to any that has preceded it. The modern "Armenoid" skull type is in general agreement with the Osmanli type.⁹

As nearly as the data may be interpreted, racial history at Alişar after Period IV shows the persistence of a dolichocephalic type, either gradually yielding to an incoming brachycephalic population or suddenly overwhelmed by the brachycephalic Osmanli. The completeness of the dominance of round-headed skulls in the Osmanli period seems to indicate the latter interpretation as the more probable.

The problem now confronting us is to discern, if possible, the racial affinities of the Alişar crania, with respect either to individual periods or to the series as a whole. The scope of our inquiry will include those races which may have been in contact with the Hittites geographically or, in general, may have been contemporaneous with them. To put it briefly, we are interested in contacts in space and time.

Here again we shall apply statistical tests, grouping the male crania of Alişar I-V together and considering the sample of the compared groups to have been drawn from a normal population. The *t*-scale will therefore be supplanted by the normal probability scale¹⁰ with the formula:

$$\text{Normal probability} = \frac{\bar{x}_1 - a}{\frac{\sigma}{\sqrt{n}}}$$

where \bar{x}_1 = mean value of grouped Alişar

a = mean value of group used for comparison

σ = standard deviation of group used for comparison

n = total number in grouped Alişar

⁹ The hypsicephaly of this group of Osmanli skulls may be a compound of the brachycephaly of the Central Asian and the high skull of an Armenoid type.

¹⁰ Karl Pearson, *Tables for Statisticians and Biometricians*, 3d ed. (Cambridge, 1930) Table II.

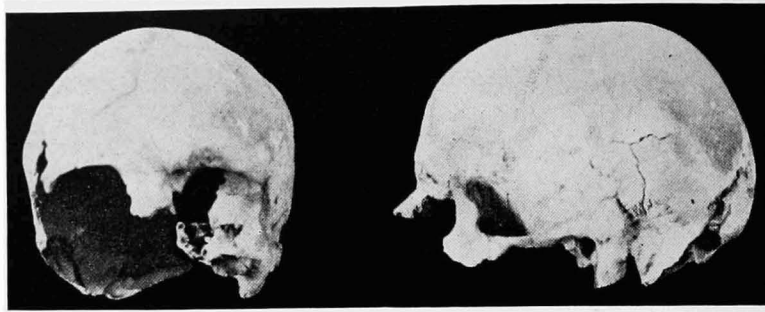


FIG. 194.—SKULL OF b X4. ALIŞAR V



FIG. 195.—SKULL OF c X15. ALIŞAR V

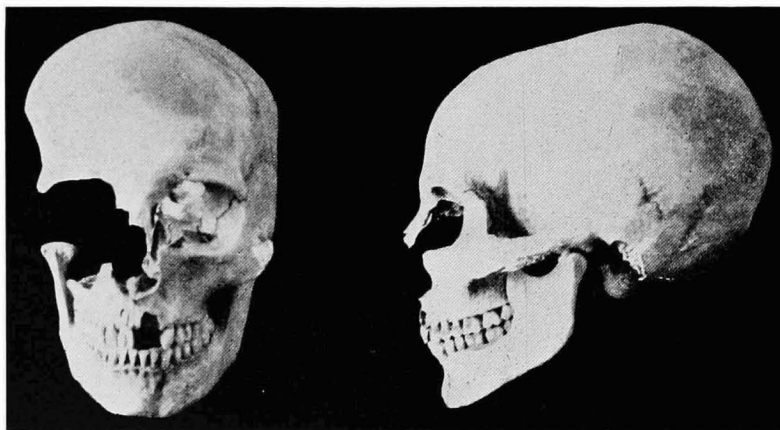


FIG. 196.—SKULL OF b X38. ALIŞAR VI

The "Hittite" type is most frequently compared with the "Armenian." Accordingly we may refer to W. Bunak's data on Iron Age Armenians¹¹ and modern Armenians,¹² mean measurements and indices of which types are given in our Tables III and IV.

Of his Iron Age crania Bunak says they "are characterized by their pentagonoid-ovoid shape, dolichoecranic,¹³ chamaec-orthocranic, leptoprosopic, leptorrhine, and mesoconchic in-



FIG. 197.—SKULL OF b X65. ALIŞAR VII

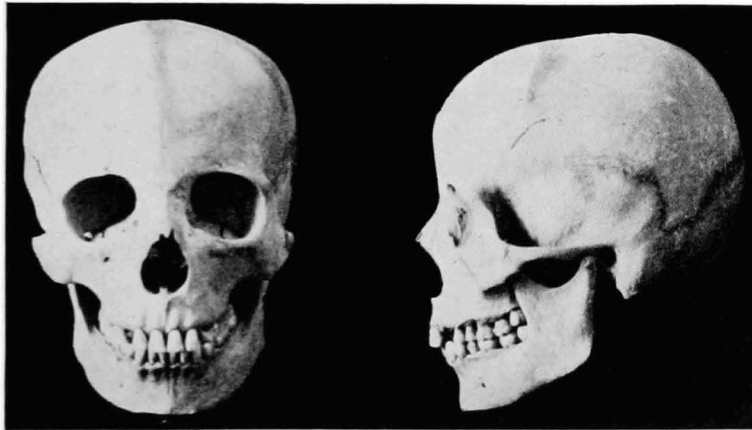


FIG. 198.—SKULL OF b X56. ALIŞAR VII

dices." On the basis of his analysis he concludes: "The theory of early migration of the Northern European type now finds its craniological confirmation."

A comparison of the Alişar material with the Iron Age Armenian reveals that the two agree far better with each other than either does with the modern Armenian. Specifically, it is the

¹¹ "Iron Age Skulls from Sevan District (Armenia)," *Russkii antropologicheskii zhurnal* (Moscow) Vol. IV, fasc. 3-4.

¹² "Crania Armenica," *ibid.* Vol. XVI, fasc. 1-2.

¹³ Dolichocephalic Armenians have been observed, but in every instance they have reflected the prevailing skull type of the territory in which they find themselves; e.g., long-headed Armenians are to be found in Persia. It is not likely that Bunak is observing pure Armenians. The material from the Sevan district offers a good example of local variation and adaptation, and to that extent points to the presence of a long-headed element as early as the Iron Age. The dolichocephaly at Alişar precedes this, but may be an anticipation of a generally long-headed element coming in.

Alişar I and IV crania that are nearest the Iron Age Armenian. With respect to the generalized Armenoid type Bunak observes: "Der Armenoiden-Typus ist ein uralter und schon im IV. Jahrtausend (vor Chr. Geb.) bei den Sumeriern vertreten."¹⁴ This type finds no place at Alişar until the advent of the Osmanli, with which it has much in common.

The Alişar material may also be compared with material from Egypt. For this I have chosen the Badarian¹⁵ as typical of the early predynastic, and the 26th-30th dynasty series excavated by Sir Flinders Petrie at Gizah¹⁶ as typical of a later type—a type representative, indeed, of the entire Egyptian dynastic series, which is remarkably homogeneous. Comparison of the combined Alişar with the Badarian male crania (cf. Tables III and IV) yields the following results:

Index	Number	Mean	Standard Deviation	Variance	Normal Scale	P_n	z	P_z
Cephalic:								
Alişar.....	23	76.10	4.96	24.66	+7.263	.0002—	.5791	(z_{01}) .3032
Badarian.....	36	71.8	2.84	8.09				(z_{05}) .2171
Orbital:								
Alişar.....	18	84.89	5.06	25.56	+5.086	.004	.0104	(z_{01}) .3387
Badarian.....	33	78.7	5.14	26.46				(z_{05}) .2427
Nasal:								
Alişar.....	16	50.34	4.53	20.48	—1.507	.132	.4169	(z_{01}) .3356
Badarian.....	33	51.5	3.08	9.49				(z_{05}) .2404

According to the test for normal probability the cephalic index of the Alişar crania differs significantly from that of the Badarian; that is, in less than two instances out of ten thousand would one expect a deviation as great or greater than that found for P_n . For orbital and nasal indices, however, the differences are not greater than expected through the operations of random chance. The z -scale indicates that the differences of the cephalic and nasal indices have only a very slight significance, while the orbital index is not in the least significant.

We may now consider the data for comparison of the combined Alişar with the 26th-30th dynasty Egyptian male crania (see also Tables III and IV):

Index	Number	Mean	Standard Deviation	Variance	Normal Scale	P_n	z	P_z
Cephalic:								
Alişar.....	23	76.10	4.96	24.66	+1.863	.062	.6346	(z_{01}) .3032
Egyptian.....	884	75.06	2.68	7.18				(z_{05}) .2171
Orbital:								
Alişar.....	18	84.89	5.06	25.56	+2.258	.023	.0296	(z_{01}) .3387
Egyptian.....	878	82.12	5.05	25.50				(z_{05}) .2427
Nasal:								
Alişar.....	16	50.34	4.53	20.48	+3.183	.001	.2021	(z_{01}) .3356
Egyptian.....	881	47.31	3.82	14.59				(z_{05}) .2404

¹⁴ See Keith on this point (on our p. 137).

¹⁵ Brenda N. Stoessiger, "A Study of the Badarian Crania," *Biometrika* XIX (1927) 110-50.

¹⁶ G. M. Morant, "A Study of Egyptian Craniology from Prehistoric to Roman Times," *ibid.* XVII (1925) 1-52.

The general conclusion to be derived from this comparison is that the grouped Alişar crania may well be rather closely related to the Egyptian physical type of which the 26th-30th dynasty material is typical. The test for normal probability reveals a significant difference for all three indices: for the cephalic, approximately one out of sixteen; for the orbital, one out of forty-four; and for the nasal, one out of one thousand instances might be expected to offer a deviation as great or greater than that found for P_n . The z -test shows a slight significance for the cephalic and nasal indices, but not for the orbital index. Taken as a whole, however, there is a general statistical relationship between these two compared groups.

It may be concluded, therefore, that the grouped Alişar material is more closely related to the dynastic series than to the Badarian, though it is perhaps closer to both than to an Armenoid type. Fundamentally the Alişar, Iron Age Armenian, Badarian, and dynastic Egyptian materials are to be set off as in contrast with the modern Armenoid and Osmanli physical types. It must not be assumed, however, that the grouping necessarily implies racial relationship; that it seems to be indicated is as much as one may say. Within the first major grouping the Alişar crania seem to stand nearest to the dynastic Egyptian. This conclusion, however, is not to be interpreted as indicative of an actual relationship. At the very most it bespeaks a similarity in terms of elements drawn from a possible common population, and then only with reference to the anatomical features chosen for comparison.

We may now consider the possibility of relationship with the pre-Semitic population (prior to about 2500 B.C.) found by R. A. S. Macalister at Gezer in Palestine.¹⁷ Unfortunately, however, the skeletal material was so poorly preserved as to prevent restoration. Macalister says:

The fragments were thick, and the surface appeared in many cases to present strong muscular ridges. So far as the curvatures of the surfaces could be trusted as a guide, the common cranial shape seems to have been ovate-ellipsoid, fairly well arched longitudinally, but rather flat-sided. The calvariae, so far as they could be restored, appeared to be dolichocephalic. A calvaria found in another cave, with pottery like that in the cave of burnt bones [i.e., the Crematorium on the Eastern Hill], was dolichocephalic, mesognathous, with moderate brow-ridges, low forehead, and deep fronto-nasal notch. The height was less than the breadth, and the capacity was small.¹⁸

For the Semitic periods (about 2500-550 B.C.) Macalister revealed a population which was predominantly mesocephalic (c.i., 77), but with a dolichocephalic element fairly well marked (c.i., 72). In neither group, however, was the vault very high. As a rule the nasal aperture was mesorrhinic (n.i., 47). The orbits, with breadth exceeding height and long axis slanting downward and outward, ranged from meso- to hypsiconchic (o.i., 83-86). The face was fairly long, the index in the majority ranging from 51 to 54, about midway between chamae- and leptoprosopic. The profile ranged from orthognathous to mildly prognathous. Macalister observes of these data that "it was impossible to detect any physical characters which could be regarded as peculiar to any one of the Semitic periods. . . . As a whole the earliest inhabitants of the First Semitic Period were indistinguishable from those of the later occupations."¹⁹

The fragmentary and general nature of the Gezer material makes it useless for more than this passing notice.²⁰ The Gezer skulls throw little light on our problem beyond possibly the fact that their dolicho- or mesocephaly and chamae- or orthocephaly removes them from any suggestion of "Hittite" influence—and in so doing places them nearer the Alişar crania.

This statement is intended to serve no other purpose than to emphasize the fact that the Alişar material itself bears little or no resemblance to the Hittite type as it is generally under-

¹⁷ *The Excavation of Gezer I* (London, 1912) 58-62.

¹⁸ *Ibid.* p. 59.

¹⁹ *Ibid.* pp. 59-60.

²⁰ Four additional skulls from Palestine are described by K. O. Henckel, "Zur Kraniologie Palästinas," *Zeitschrift für Morphologie und Anthropologie* XXVIII (Stuttgart, 1930) 238-43, two from the Mount of Olives and two from Ain Jebrud (O. I with c.i. of 75.3, h-l.i. of 74.2, o.i. of 80.0, and n.i. of 44.7; O. II with c.i. of 78.2, h-l.i. of 66.7, o.i. of 71.1, and n.i. of 53.3; A. J. I with c.i. of 75.4).

stood. Basically, I think, the "Hittites" are linked in our minds with the monumental stone carvings depicting the supposed inhabitants of "Hittite" centers.²¹ There we see a high-vaulted, round-domed, posteriorly flattened cranium and a very prominent nose. At the present time these cranial specifications are fulfilled by the Armenoids, generally accepted as the physical survivors of the "Hittites." The nose has come to be known as "Semitic"²² from its presumed dominance among these people. None of the Alishar crania prior to the Osmanli period gives any hint of the hypsibrachycephaly generally termed "Hittite" or Armenoid. This fact emphasizes the heterogeneity of the people responsible for "Hittite" culture.²³ On this point we may note A. C. Haddon (who bases his conclusions on von Luschan and Messerschmidt): "There is evidence that the Hittites were not a thoroughly homogeneous people and doubtless had been influenced by Proto-Nordics long before this period [i.e., about 1900 B.C.], or by other brachycephals associated with Proto-Nordics."²⁴

Felix von Luschan summarizes as follows:

All Western Asia was originally inhabited by a homogeneous, melanochoic race, with extreme hypsi-brachycephaly and with a "Hittite" nose. About 4000 B.C. began a Semitic invasion from the south-east, probably from Arabia, by people looking like modern Bedawy. Two thousand years later commenced a second invasion, this time from the north-west, by xanthochroous and long-headed tribes like the modern Kurds, half savage, and in some way or other, perhaps, connected with the historic Ḫarri, Amorites, Tamehu, and Galatians.²⁵

It will be remembered that, owing to the smallness of the samples, we were unable to discover a significant statistical difference between the Alishar I and IV and the Alishar II and III groupings, but that tests applied to the Alishar males grouped as a whole hinted at racial heterogeneity. The latter conclusion is borne out by anatomical appreciation of the cranial material; compare, for example, Figures 188 (I) and 190 (II). It cannot be denied that in general the facial types of the two periods differ, even though there is perhaps a less marked difference in cranial type.

Reduced to essentials, mixture of dolichocephalic and brachycephalic peoples has occurred at Alishar; and I would venture to assert that the dolichocephalic element might have been contributed by a Semitic people.²⁶ One has but to look at b X8 and c X20 (both I), shown in Figures 187-88, to gain an idea of the high, prominent "Semitic" nose—but not, it must be emphasized, as a concomitant of a "Hittite" or Armenoid complex. Other characteristics of the "Semitic" skull²⁷ which are to be noted in the crania of Alishar I are the glabellar eminence, the deep palate, the square orbit turned up medially, and the post-auricular length approximating 50 per cent of the total skull length.

Sir Arthur Keith, when shown the measurements of the Alishar crania, unhesitatingly referred two of the long-headed skulls (b X8 and 3218) and possibly a third (c X23) to the long-headed type at al-Ubaid described by him.²⁸

²¹ See H. H. von der Osten, "Four Sculptures from Marash," *Metropolitan Museum Studies* II (1929) 112-28. See also G. Contenau, "Les Hittites," *L'anthropologie* XLI (1931) 489-99.

²² Found only among the Ashkenazim Jews, who acquired it from the Armenians. The "Semitic" nose is, then, essentially Armenoid.

²³ See von der Osten, *op. cit.* pp. 126-27, where he discusses the possibility that "the hieroglyphs were the system of writing of another people who first came under the supremacy of the Hittites of the Great Empire and later on helped to destroy it."

²⁴ *The Races of Man* (New York, 1925) p. 104.

²⁵ "Early Inhabitants of Western Asia," *Journal of the Royal Anthropological Institute* XLI (1911) 243.

²⁶ Specifically akin to the Adnan Arabs of Phoenico-Palmyrene type. See C. U. Ariens Kappers, "Phoenician and Palmyrene skulls," in K. Akademie van Wetenschappen te Amsterdam, *Proceedings* XXXIV (1931) 106-15.

²⁷ According to Kappers.

²⁸ In H. R. Hall and C. L. Woolley, "Ur Excavations" I. *Al-Ubaid* (Oxford, 1927) 214-40.

TABLE I
MEASUREMENTS OF ALIŞAR CRANIA

	PERIOD I										PERIOD II										PERIOD III			PERIOD IV					PERIOD V					PERIOD VI					OSMANLI											
	Ad. ♂ b X8	Ad. ♂ 3209	Ad. ♂ 3200	Ad. ♂ 3224	Ad. ♂ 3212	Ad. ♂ e X20	♀ 12-14 3203	♂ 12-15 d X26	Ad. ♂ b X32	Ad. ♂ b X37	Ad. ♂ b X44	Ad. ♂ e X13	Ad. ♂ e X17	Ad. ♂ e X23	Ad. ♂ d X32	Ad. ♂ d X36	Ad. ♀ b X45	Ad. ♀ b X20	Ad. ♀ b X35	♂ Juv. b X43	Ad. ♂ b X15	Ad. ♂ e X16	♂ Juv. e X6	Ad. ♂ 3217	Ad. ♂ 3218	Ad. ♂ e X21	Ad. ♂ e X71	♀ 8-10 3220	Ad. ♂ b X4	Ad. ♂ d X4§	Ad. ♂ e X15	Ad. ♂ d X6§	Ad. ♀ b X1	Ad. ♀ d X1§	♂? 11-12 d X13§	♀ 14-15 d X21§	8-10 d X20§	Ad. ♂ d X12**	Ad. ♀ b X38††	♀ 12-15 d X25††	Ad. ♂ b X65	Ad. ♂ b X59	Ad. ♂ b X56	Ad. ? b X47	12-14 b X61	8-10? b X52§§	10? b X51	15? b X50		
(1)* Gl-op (<i>L</i>)†	192.0	174.0		175.5	179.0	183.0	171.0	194.5	176.0	178.0	187.0	182.0	168.0	193.0	170.0	187.0	178.0	177.0	168.0	177.0	186.0	175.0	174.0	(1)* Gl-op (<i>L</i>)†	182.0	196.0	185.0	183.0	171.5	175.0	183.0	183.0	188.0	186.0	186.0	169.0	176.0	185.0	184.0	167.0	187.0	163.0	160.0	158.0	166.0	146.0	165.0	161.0	(1)* Gl-op (<i>L</i>)†	
(8) Eu-eu (<i>B</i>)	136.0	130.0		133.0	136.0	143.0	135.0	143.0	146.0	139.0	150.0	134.0	142.0	147.0	145.0	145.0	146.0	140.0	137.0	145.0	139.0	146.0	135.0	(8) Eu-eu (<i>B</i>)	129.0	133.5	134.0	133.0	134.0	137.0	140.0	135.0	123.0	131.0	143.0	135.0	137.0	126.0	156.0	135.0	120.0	160.0	144.0	146.0	148.0	133.0	(8) Eu-eu (<i>B</i>)			
(17) Ba-b (<i>H'</i>)	131.0	141.0			140.5	133.0	137.0		120.0	113.0	137.0	127.0		130.0		130.0	116.0		127.0	132.0		136.0	128.0	(17) Ba-b (<i>H'</i>)	112.0			118.0	124.0	124.0			124.0	125.0	129.0	131.0	125.0	140.0	135.0	125.0	120.0	128.0	123.0	126.0	125.0	(17) Ba-b (<i>H'</i>)				
(20) Po-b	114.0	113.5		110.0	112.0	117.0	119.5	125.0	99.0	110.0	123.0	105.0	110.0	117.0	125.0			99.0		98.0	113.0	115.0		(20) Po-b	112.0	113.0	118.0	111.0	119.0	98.0	127.0	113.0	113.0	109.0	136.0	121.0	123.0	117.0	127.0	129.0	131.0	125.0	140.0	128.0	123.0	126.0	125.0	(20) Po-b		
(9) Min. frontal (<i>B'</i>)	92.0	92.0		93.0	86.0	93.0	97.0	92.0	101.0	97.0	109.0	90.0	102.0	99.0	100.0	100.0	99.0		98.0	93.0	102.0	101.0	91.0	(9) Min. frontal (<i>B'</i>)						98.0	99.0	97.0	84.0	96.0	101.0	91.5	101.0	89.0	111.0	95.0	84.0	100.0	93.0	95.0	94.0	98.0	89.0	94.0	87.0	(9) Min. frontal (<i>B'</i>)
(45) Zy-zy (<i>J</i>)	128.0	121.0		116.5	125.0	128.0	122.0	123.0	132.0	127.0	143.0	124.0		135.0	122.0	123.0			125.0	123.0	134.0	137.0	120.0	(45) Zy-zy (<i>J</i>)						128.0	130.0	111.0		127.0	98.0	109.5	101.5	134.0		105.0	155.0	142.0	131.0	113.0	117.0	109.0	117.0	122.0	(45) Zy-zy (<i>J</i>)	
(5) Ba-na (<i>LB</i>)	110.0	106.0			100.5	95.0	103.0		106.0	102.0	117.0	105.0		106.0		94.0				87.0	98.0		98.0	(5) Ba-na (<i>LB</i>)																							(5) Ba-na (<i>LB</i>)			
(40) Ba-pr (<i>GL</i>)	95.0	95.0	88.0		88.0	86.0	93.0		93.0	98.0	110.0	101.0		98.0		99.0				77.0	93.0		84.0	(40) Ba-pr (<i>GL</i>)																							(40) Ba-pr (<i>GL</i>)			
(48) Na-pr (<i>G'H</i>)	68.0	64.5		68.0	69.0	76.0	63.2	74.0	60.0	63.0	80.0	68.0		75.0	72.0	66.0			62.0	61.0		60.0	(48) Na-pr (<i>G'H</i>)																							(48) Na-pr (<i>G'H</i>)				
(50) Bi-orb. min. (<i>DC</i>)	24.0	22.5		20.6		22.0	18.0		22.0	26.0	30.0	24.0		23.0	22.0	26.0		22.0		21.0	23.0	27.0	24.0	(50) Bi-orb. min. (<i>DC</i>)	22.5	23.2	27.0	22.0		25.0	26.0	25.0	20.0	24.0	20.0	22.0	21.0	24.0	20.0	23.0	22.0	22.0	21.0	22.0	17.0	22.0	21.0	(50) Bi-orb. min. (<i>DC</i>)		
(51a) Orb. width (<i>O₁R</i>)	41.0	36.0		38.5	40.0	39.0	38.0	38.0	39.0	39.0	42.0	40.0		39.0	41.0	39.0			37.0	40.0		36.0	(51a) Orb. width (<i>O₁R</i>)																							(51a) Orb. width (<i>O₁R</i>)				
(52) Orb. height (<i>O₂R</i>)	34.0	34.5		31.6	36.0	33.0	35.0	34.5	33.0	32.0	32.0	33.0		33.0	34.0	31.0			33.0	31.0		34.0	(52) Orb. height (<i>O₂R</i>)																							(52) Orb. height (<i>O₂R</i>)				
(55) Nasal height (<i>NHR</i>)	51.0	48.0		42.2	49.5	52.0	49.0	51.0	46.0	52.0	57.0	49.0		56.0	53.0	53.0			46.0	47.0		49.0	(55) Nasal height (<i>NHR</i>)																							(55) Nasal height (<i>NHR</i>)				
(54) Nasal width (<i>NB</i>)	24.0	26.0		26.1	24.0	27.0	20.0	24.0	26.0	25.0	29.0	26.0		23.0	27.0	26.0			24.0	26.0		53.0	(54) Nasal width (<i>NB</i>)																							(54) Nasal width (<i>NB</i>)				
(61) Max-al. width (<i>EB</i>)	57.0				64.0		64.0		55.0	58.0	64.0	59.0		64.0	65.0	66.0			64.0	62.0		53.0	(61) Max-al. width (<i>EB</i>)																							(61) Max-al. width (<i>EB</i>)				
(60) Max-al. length (<i>G₁'</i>)	52.0				51.0				44.0	53.0	59.0	52.0		53.0					43.0	51.0		46.0	(60) Max-al. length (<i>G₁'</i>)																							(60) Max-al. length (<i>G₁'</i>)				

* Numbers in parentheses refer to definitions in R. Martin, *Lehrbuch der Anthropologie*, 2d ed. (1928) II 625-62.
† Letters in parentheses refer to definitions used in the Galton Laboratory; see *Biometrika* XIV (1922/23) 196-200.

† Nos. e X2 and e X7 were classified in the field as IV or V.
§ Nos. d X4, d X6, d X1, d X13, d X21, and d X20 were doubtfully classified as V.

** Byzantine.
†† Postclassical?

‡‡ Roman?
§§ Skull hydrocephalous?

TABLE II
INDICES OF ALIŞAR CRANIA

		PERIOD I							PERIOD II										PERIOD III			PERIOD IV					PERIOD V										PERIOD VI			OSMANLI														
		Ad. ♂ b X8	Ad. ♂ 3209	Ad. ♂ 3200	Ad. ♂ 3224	Ad. ♂ 3212	Ad. ♂ e X20	♀ 12-14 3203	♂ 12-15 d X26	Ad. ♂ b X32	Ad. ♂ b X37	Ad. ♂ b X44	Ad. ♂ e X13	Ad. ♂ e X17	Ad. ♂ e X23	Ad. ♂ d X32	Ad. ♂ d X36	Ad. ♀ b X45	Ad. ♀ b X20	Ad. ♀ b X35	♂ Juv. b X43	Ad. ♂ b X15	Ad. ♂ e X16	♂ Juv. e X6	Ad. ♂ 3217	Ad. ♂ 3218	Ad. ♂ e X2	Ad. ♂ e X7	♀ 8-10 3220	Ad. ♂ b X4	Ad. ♂ d X4	Ad. ♂ e X15	Ad. ♂ d X6	Ad. ♀ b X1	Ad. ♀ d X1	♂ ? 11-12 d X13	♀ 14-15 d X21	8-10 d X20	Ad. ♂ d X12	Ad. ♀ b X38	♀ 12-15 d X25	Ad. ♂ b X65	Ad. ♂ b X59	Ad. ♂ b X56	Ad. ? ♂ b X47	12-14 b X61	8-10? b X52	10? b X51	15? b X50					
Cephalic	$\frac{B \times 100}{L}$	70.9	74.7		75.7	75.9	78.1	78.9	73.5	82.9	78.1	80.4	73.6	84.5	76.1	85.3	77.5	82.0	78.5	81.5	81.9	74.7	83.4	77.5	Cephalic	$\frac{B \times 100}{L}$	70.8	68.1	72.4	72.6	78.1	78.9	76.5	73.7	65.4	70.4	76.9	79.9		71.6	84.3	73.4	71.9	85.6	90.8	88.7	84.9	86.7	100.0	88.4	83.9	Cephalic	$\frac{B \times 100}{L}$	
Height-length	$\frac{H' \times 100}{L}$	68.2	65.2		62.6	62.5	67.3	69.8		68.1	63.4	73.3	69.7		67.3		69.5	66.6		75.5	74.6		77.7	73.5	Height-length	$\frac{H' \times 100}{L}$	61.5	57.6		67.7	69.4			71.0					71.0	69.7	71.3	74.9	74.8	82.8	78.1	76.0	77.1	85.9	76.3	77.6	Height-length	$\frac{H' \times 100}{L}$		
Height-breadth	$\frac{H' \times 100}{B}$	96.4	87.3		82.6	82.4	88.4	88.5		82.1	81.3	91.4	94.7		88.4		89.7			92.6	91.0		93.1	95.1	Height-breadth	$\frac{H' \times 100}{B}$	86.8	85.0		93.2	88.8			96.3					90.5	99.2	82.7	97.1	104.1	87.5	91.2	88.0	89.5	89.6	85.9	86.3	94.0	Height-breadth	$\frac{H' \times 100}{B}$	
Po-b-length	$\frac{Po-b \times 100}{L}$	49.4					60.6		64.3	56.3	62.7	65.9	57.6	65.4	60.6	68.8	66.8		55.9	67.3	65.5	63.9	64.5	66.0	Po-b-length	$\frac{Po-b \times 100}{L}$				63.8	60.6		56.0	69.4	61.7	60.1	58.6	73.1	71.6		66.5	68.6		73.1	65.2	69.9	69.4	65.8	67.4	76.7	68.5	73.4	Po-b-length	$\frac{Po-b \times 100}{L}$
Po-b-breadth	$\frac{Po-b \times 100}{B}$	83.8					80.0		87.4	67.8	79.1	82.0	78.3	77.4	80.0	80.7	86.2		70.7	82.5	80.0	85.6	77.4	85.1	Po-b-breadth	$\frac{Po-b \times 100}{B}$				88.1	83.4		71.5	90.7	83.7	91.9	82.9	95.1	89.6	89.8	92.9	81.4		101.7	76.2	80.2	78.2	77.6	77.7	76.7	77.3	88.8	Po-b-breadth	$\frac{Po-b \times 100}{B}$
Orbital	$\frac{O_2R \times 100}{O_1R}$	82.9	95.9		82.0	90.0	84.6	92.1	90.8	84.6	82.1	76.2	82.5		84.6	82.9	79.5			89.3	77.5		94.4	82.8	Orbital	$\frac{O_2R \times 100}{O_1R}$		81.3	87.6	81.5	74.4			83.3	92.1	82.2	84.2	91.2		97.0	87.8	85.0	87.1	79.6	94.7	86.5	84.1	84.2	88.6	86.2	83.4	Orbital	$\frac{O_2R \times 100}{O_1R}$	
Nasal	$\frac{NB \times 100}{NHR}$	47.1	54.1		54.4	48.5	41.1	40.8	47.1	57.5	48.2	50.9	53.0		41.1	50.9	49.1			50.0	55.4		53.0	44.4	Nasal	$\frac{NB \times 100}{NHR}$					53.1				55.5	47.9		52.9	50.0		50.0	48.2	45.1	50.0	37.5	44.2	43.4	46.7	50.0	50.0	52.2	54.1	Nasal	$\frac{NB \times 100}{NHR}$
Trans. cran. fac.	$\frac{J \times 100}{B}$	94.1					91.8		86.0	90.4	91.4	95.4	92.5		91.8	84.3	84.8			91.2	84.9		93.8	88.8	Trans. cran. fac.	$\frac{J \times 100}{B}$				97.1	94.0		100.9		96.3	90.2		88.8	72.6	79.9	80.6	85.9		87.5	96.8	95.9	92.5	84.3	81.2	74.6	80.2	91.7	Trans. cran. fac.	$\frac{J \times 100}{B}$
Anatom. fac.	$\frac{G'H \times 100}{J}$	53.1					55.5		60.1	47.5	45.3	55.9	54.8		55.5	59.0	53.7			49.6	49.6		43.8	48.3	Anatom. fac.	$\frac{G'H \times 100}{J}$				56.2	48.0			46.9	61.3		56.7	53.1		57.6	57.8		57.1	50.9	54.2	52.6	49.6	36.7	50.4	49.6	53.2	Anatom. fac.	$\frac{G'H \times 100}{J}$	
Zygo-frontal	$\frac{B' \times 100}{J}$	71.8					73.3		74.8	76.5	76.3	76.3	72.5		73.3	81.9	81.3			74.4	83.0		73.0	75.8	Zygo-frontal	$\frac{B' \times 100}{J}$			77.6	76.8		70.9		74.6	75.7		79.5	93.4	92.2	87.7	82.8		80.0	64.5	65.5	72.5	83.2	83.7	81.6	80.3	71.4	Zygo-frontal	$\frac{B' \times 100}{J}$	

I can as yet offer no explanation of the brachycephalic element, save that it certainly does not partake of the brachycephaly of an Armenoid people. In this connection it is interesting to note that Keith remarks of al-Ubaid that "there is no trace in the people brought back by Mr. Woolley of any round-headed element of the Hittite type nor of a Mongolian type."²⁹

Keith concluded that the Sumerians at al-Ubaid were racially akin to the modern Arabs. If we grant the similarity between the long-headed people of Alişar and of al-Ubaid, we might also consider the possibility of kinship between the round-heads of Alişar and the brachycephalic element in the South Arabic population reported by Seligman.³⁰ This suggestion is, however, not borne out by detailed comparison of the two, for the Kahtan Arabs offer a much more pronounced brachycephaly than do the people of Alişar II-III. In addition it has been pointed out by Seligman that there is some evidence that the brachycephaly of southern Arabia is due to Armenoid influence. The skull from Oman that he illustrates is certainly hypsi-cephalic and flattened posteriorly, but it has been shown by Keith and Krogman³¹ that the brachycephaly of the inhabitants of the Rub' al-Khali is unique and in all probability not the result of Armenoid influence.

Buxton, in an admirable study of the human remains found by Langdon at Kish, distinguishes two main physical types—one dolichocephalic, the other brachycephalic.³² The first, however, is representative of two divisions of long-heads: the Eurafrican, with very long and high head, a tendency to scaphocephaly, and angular contours; and the Mediterranean, not so markedly long-headed, with softened contours. The brachycephalic type is referred to as the "Armenoid race."

It is entirely probable that the Alişar dolichocephali (especially b X8, 3218, and possibly c X23) are similar to those at Kish, especially the very long-headed Eurafricans whom Sir Arthur Keith stated to be exactly similar to the long-heads found at al-Ubaid. It is certain, however, that the "Armenoid" brachycephali of Kish are not akin to the brachycephali of Alişar, despite Buxton's statement that Anatolia is an area which "offered itself as a home more ready to receive Armenoids than Mediterraneans."

If one were to venture an opinion at all as to the racial affinity of the brachycephali of Alişar one might most logically refer to a Caucasian element. Specifically the neighboring Georgian subbrachycephali, the *Homo Georgianus* of Haddon, *Homo Indo-Europaeus brachymorphus* of Giuffrida-Ruggeri, seem to meet all requirements; theirs is a type which has persisted relatively unchanged through the centuries, and they are to be found in contiguous territory.

As to the "Hittites" of the monuments, no explanation in terms of a definitely known physical type can yet be made. It can only be said that, according to our present state of knowledge, their type was not represented at Alişar.

²⁹ *Ibid.* p. 240.

³⁰ C. G. Seligman, "The Physical Characters of the Arabs," *Journal of the Royal Anthropological Institute* XLVII (1917) 214-37.

³¹ In Bertram Thomas, *Arabia Felix* (New York, 1932) pp. 301-33.

³² L. H. D. Buxton and D. Talbot Rice, "Report on the Human Remains Found at Kish," *Journal of the Royal Anthropological Institute* LXI (1931) 57-119. Unfortunately the smallness of the series and its fragmentary condition precluded extensive measuring and detailed statistical examination. The following mean measurements of twenty-five males, comprising his three types, may be noted: head length, 189.50 (σ , 4.28); head breadth, 137.44 (σ , 3.55); cephalic index, 71.54 (σ , 4.19).

TABLE III
MEAN CRANIAL MEASUREMENTS OF ALIŞAR GROUPS COMPARED WITH THOSE OF OTHER GROUPS

	I	II		III	IV	V		VI		OS-MANLI	BADARIAN	26TH-30TH DYNASTY EGYPTIAN	IRON AGE ARME-NIAN	MOD-ERN ARME-NIAN	SUME-RIAN OF AL-'UBAID
	♂ (6)*	♂ (8)	♀ (3)	♂ (2)	♂ (4)	♂ (4)	♀ (2)	♂ (1)	♀ (1)	♂ (4)	♂ (36)	♂ (935)	♂ (24)	♂ (101)	♂ (8)
Gl-op.	180.7	180.1	174.3	180.5	186.5	182.3	186.0	185.0	184.0	164.5	182.3(36)	185.3(895)	189.7	173.2	192.8
Eu-eu.	135.6	143.5	141.0	142.5	132.4	133.8	137.0	156.0	135.0	146.0	130.8(36)	138.9(896)	137.8	145.5	140.1
Ba-b.	163.4	126.2	121.5	136.0	124.0	130.0	.....	129.0	131.0	130.0	132.9(34)	132.4(884)	131.7	135.5	136.5
Po-b.	113.3	113.3	106.0	116.0	113.5	112.8	122.5	127.0	.....	112.7	.....	.....	.....	.....	119.0
Min. frontal...	91.2	99.8	96.6	100.5	99.7	94.5	98.5	111.0	95.0	95.5	91.1(36)	94.8(935)	99.2	98.8	97.0
Zy-zy.	123.7	129.4	125.0	135.5	127.7	126.4	127.0	134.0	.....	135.2	122.5(32)	128.7(785)	130.4	134.1	127.6
Ba-na.	102.9	108.3	87.0	95.0	98.0	99.0	.....	106.0	107.0	99.7	99.3(35)	101.6(896)	.....	100.8	105.7
Ba-pr.	90.4	99.8	77.0	84.0	95.0	92.0	.....	105.0	98.0	93.2	95.0(33)	95.0(832)	.....	.....	104.0
Na-pr.	69.1	69.1	62.0	60.0	66.5	64.5	72.0	77.5	64.0	53.0	67.1(34)	70.4(845)	70.3	72.1	72.0
Bi-orb. min. ...	22.3	24.7	21.5	25.5	23.7	24.0	22.0	24.0	20.0	22.0	22.4(32)	.....	.....	.....	25.0
Orb. width.	38.9	39.9	37.0	36.0	39.3	39.7	41.0	41.0	41.0	39.2	40.6(33)	41.1(886)	40.2	41.5	40.0
Orb. height.	33.6	32.6	33.0	34.0	32.8	32.5	34.5	36.0	33.0	33.7	32.0(34)	33.7(888)	33.3	35.2	33.6
Nasal height. ...	49.7	52.3	46.0	49.0	50.1	46.5	51.0	56.0	51.0	53.0	48.4(33)	51.7(898)	52.5	55.1	54.0
Nasal width.	25.4	26.0	24.0	26.0	26.0	23.7	27.0	27.0	23.0	23.0	24.9(34)	24.4(893)	24.0	25.1	25.7
Max-al. width. ...	60.5	61.6	64.0	53.0	62.0	56.3	67.0	64.0	65.0	61.7	.....	.....	.....	.....	.....
Max-al. length. ...	51.5	52.2	43.0	46.0	53.0	52.3	55.0	60.0	54.0	49.0	46.3(34)	46.3(821)	47.6	47.6	.....

* Numbers in parentheses indicate total in each sample. Not all measurements could be obtained from all the skulls.

TABLE IV
MEAN CRANIAL INDICES OF ALIŞAR GROUPS COMPARED WITH THOSE OF OTHER GROUPS

	I	II		III	IV	V		VI		OS-MANLI	BADARIAN	26TH-30TH DYNASTY EGYPTIAN	IRON AGE ARME-NIAN	MOD-ERN ARME-NIAN	SUME-RIAN OF AL-'UBAID
	♂ (6)*	♂ (8)	♀ (3)	♂ (2)	♂ (4)	♂ (4)	♀ (2)	♂ (1)	♀ (1)	♂ (4)	♂ (36)	♂ (935)	♂ (24)	♂ (101)	♂ (8)
Cephalic.	75.1	79.8	80.7	79.1	71.0	73.6	73.7	84.3	73.4	87.5	71.8(36)	75.1(884)	72.8	84.0	72.6
Height-length. ...	65.2	68.6	71.0	77.7	62.3	71.0	.....	69.7	71.3	77.9	73.2	71.5(884)	69.9	78.4	71.2
Height-breadth. ...	87.4	87.9	92.6	93.1	88.3	96.3	.....	82.7	97.1	89.0	.....	.....	95.6	93.1	97.4†
Po-b-length.	55.0	63.0	61.6	64.2	62.2	61.8	65.9	68.6	.....	67.6	.....	.....	.....	.....	61.7
Po-b-breadth.	81.9	78.9	81.6	81.5	85.7	84.5	89.0	81.4	.....	78.0	.....	.....	.....	.....	84.9
Orbital.	87.1	81.8	89.3	94.4	83.5	87.7	83.2	87.8	85.0	86.2	78.7(33)	82.1(878)	82.5	85.0	84.0
Nasal.	49.0	50.1	50.0	53.0	53.1	51.7	52.9	48.2	45.1	42.9	51.5(33)	47.3(881)	45.5	47.6	47.6
Trans. cran. fac. ...	92.9	90.1	91.2	93.8	95.5	95.6	88.8	85.9	.....	92.4	.....	.....	.....	.....	91.1
Anatom. fac.	54.3	52.8	49.6	43.8	52.1	54.1	56.7	57.8	.....	51.8	.....	.....	.....	.....	.....
Zygo-frontal.	72.6	76.9	74.4	73.0	77.2	73.7	79.5	82.8	.....	71.4	.....	.....	.....	.....	.....

* Numbers in parentheses indicate total in each sample. Not all measurements could be obtained from all the skulls.

† This and the following mean indices were calculated from the mean measurements of the group.

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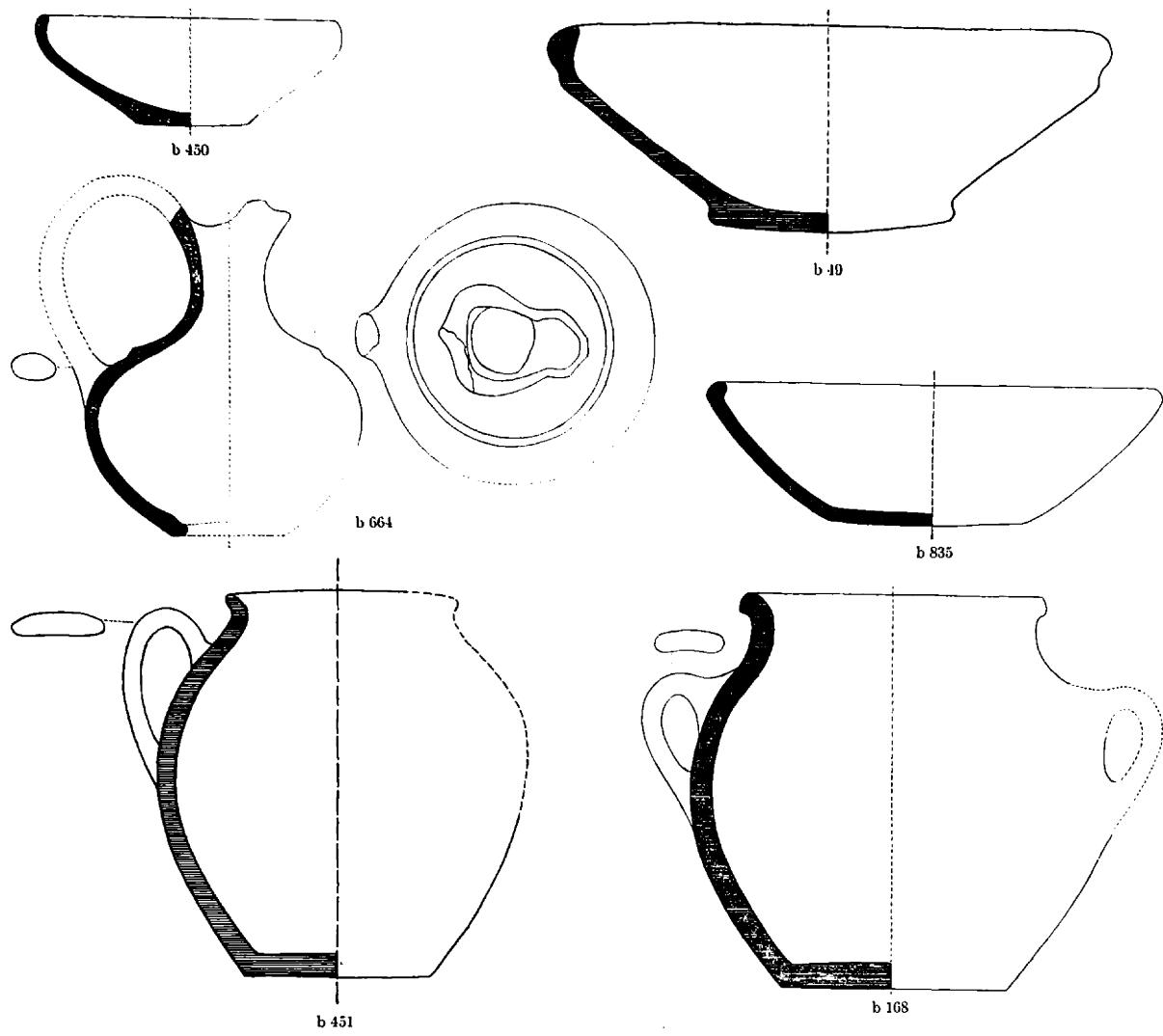
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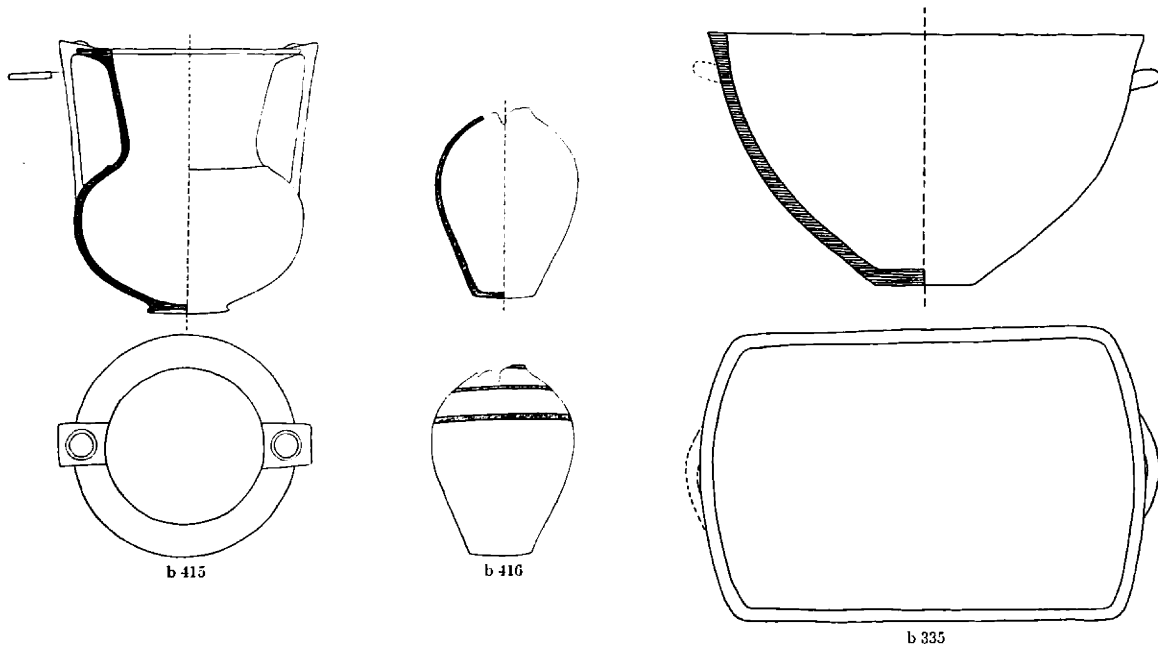
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PLATE I



A.—BOWL, PITCHER, AND JAR FORMS OF ALIŞAR V. SCALE, 1:4

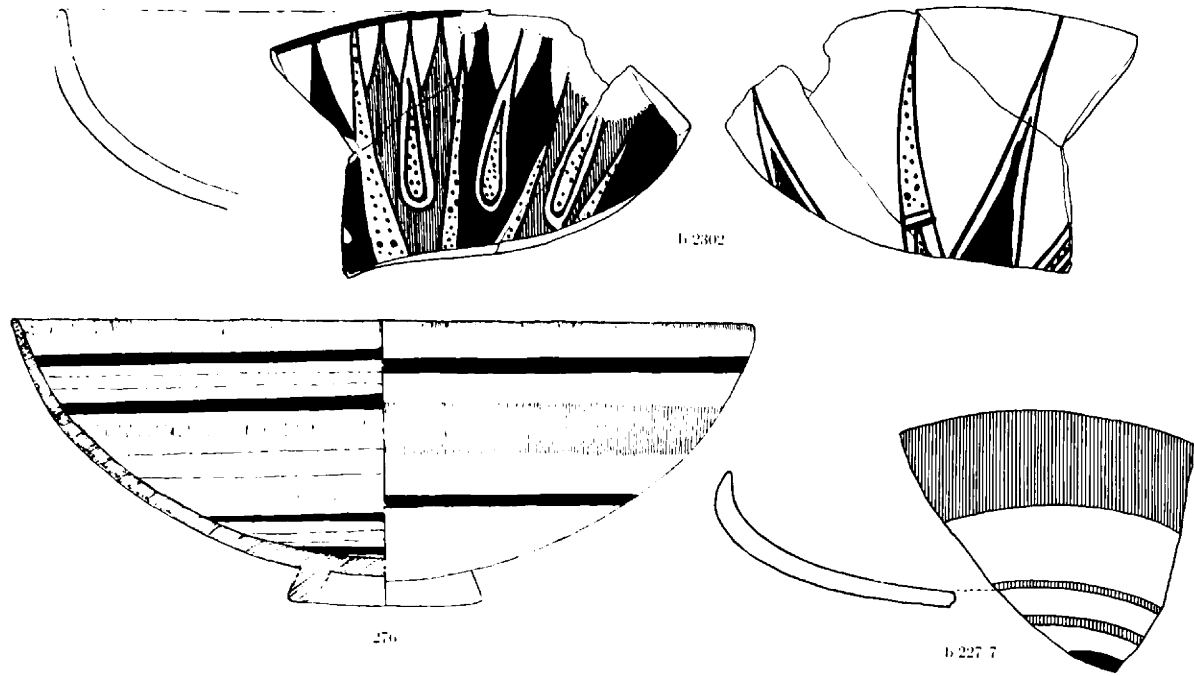


B.—LARGE JARS AND A TROUGH OF ALIŞAR V. SCALE, 1:16

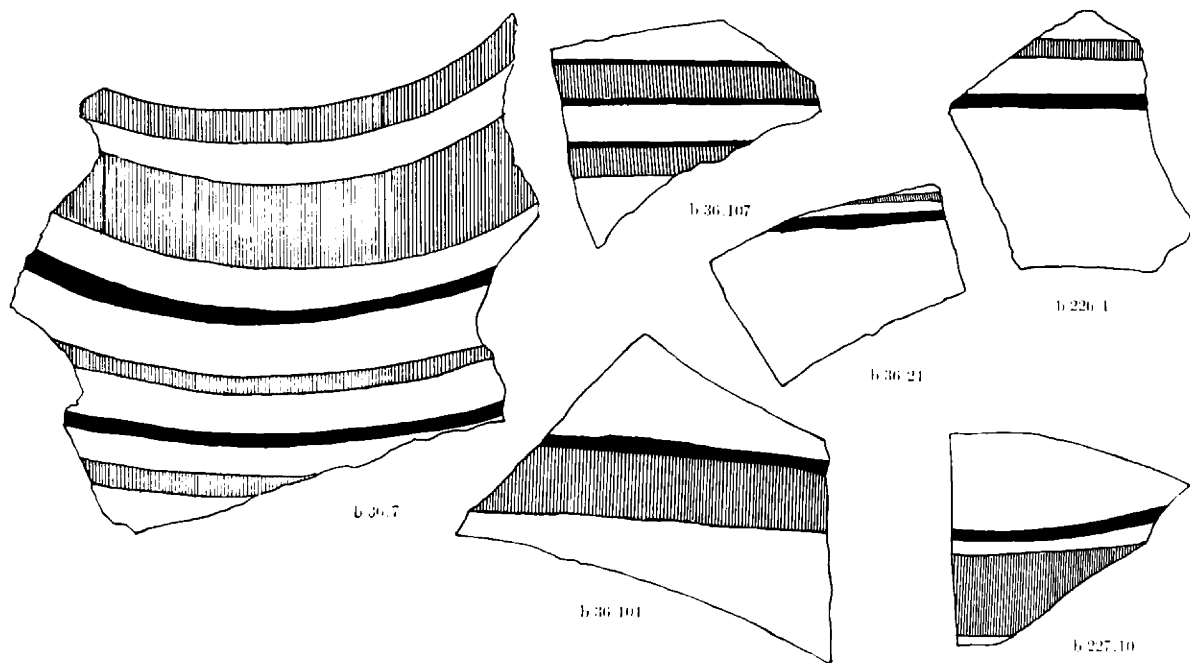
PLATE II

No.	Provenience	Decoration	Remarks
b 2302.....	DD-EE 10	Dark brown and brown-red on light buff	Period V origin uncertain
276.....	Plot 13 of 1927	Black-brown and red on brown-buff	Dated by Coin 267 (cf. p. 40)
b 227:7.....	L 5, Level 1	Dark gray and red-brown on light brown	
b 36:7.....	F 14, Level 3	Brown-red and gray-black on gray	
b 36:107.....	F 14, Level 3	Dark brown and purplish red on gray-brown	
b 36:24.....	F 14, Level 3	Gray and red-brown on brown	
b 226:4.....	M 5, Level 1-2	Dark brown, red-brown, and buff on brown	
b 36:104.....	F 14, Level 3	Gray and brown-red on gray-brown	
b 227:10.....	L 5, Level 1-2	Dark gray and brown-red on light buff	

PLATE II



A.—BOWL SHERDS OF ALIŞAR V WITH PAINTED DECORATION. SCALE, 1:2

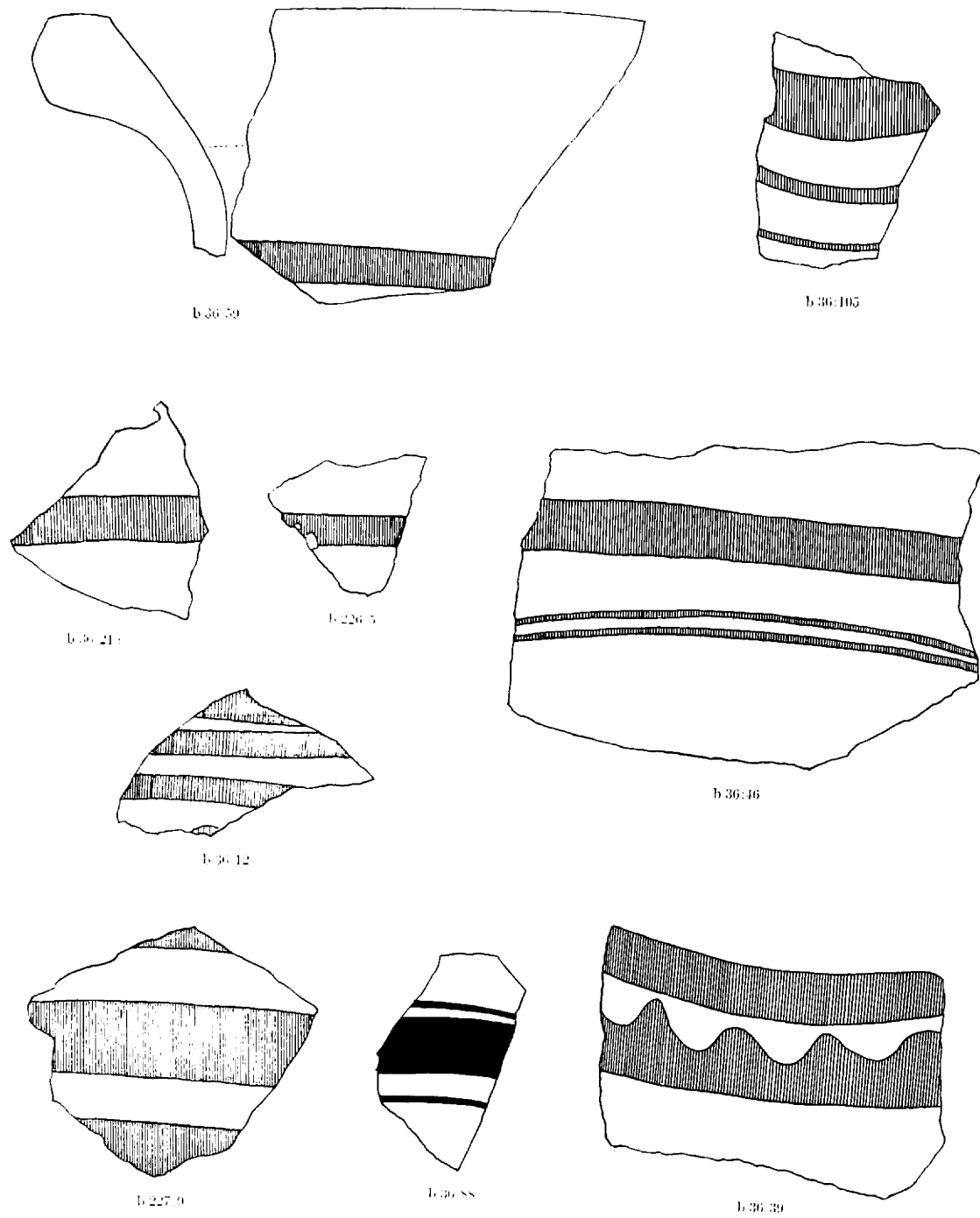


B.—JAR SHERDS OF ALIŞAR V DECORATED WITH PAINTED BANDS. SCALE, 1:2

PLATE III

No.	Provenience	Decoration
b 36:59	F 14, Level 3	Dark brown-red on light buff-brown
b 36:105	F 14, Level 3	Brown-red on gray-brown
b 36:21 <i>a</i>	F 14, Level 3	Purplish brown on brown
b 226:5	M 5, Level 1-2	Red-brown on brown
b 36:12	F 14, Level 3	Brown on gray-white
b 36:46	F 14, Level 3 <i>c</i>	Red on brown
b 227:9	L 5, Level 1-2	Dark purplish brown on buff
b 36:88	F 14, Level 1-2	Dark brown on brown-red
b 36:39	F 14, Level 3	Red on brown

PLATE III

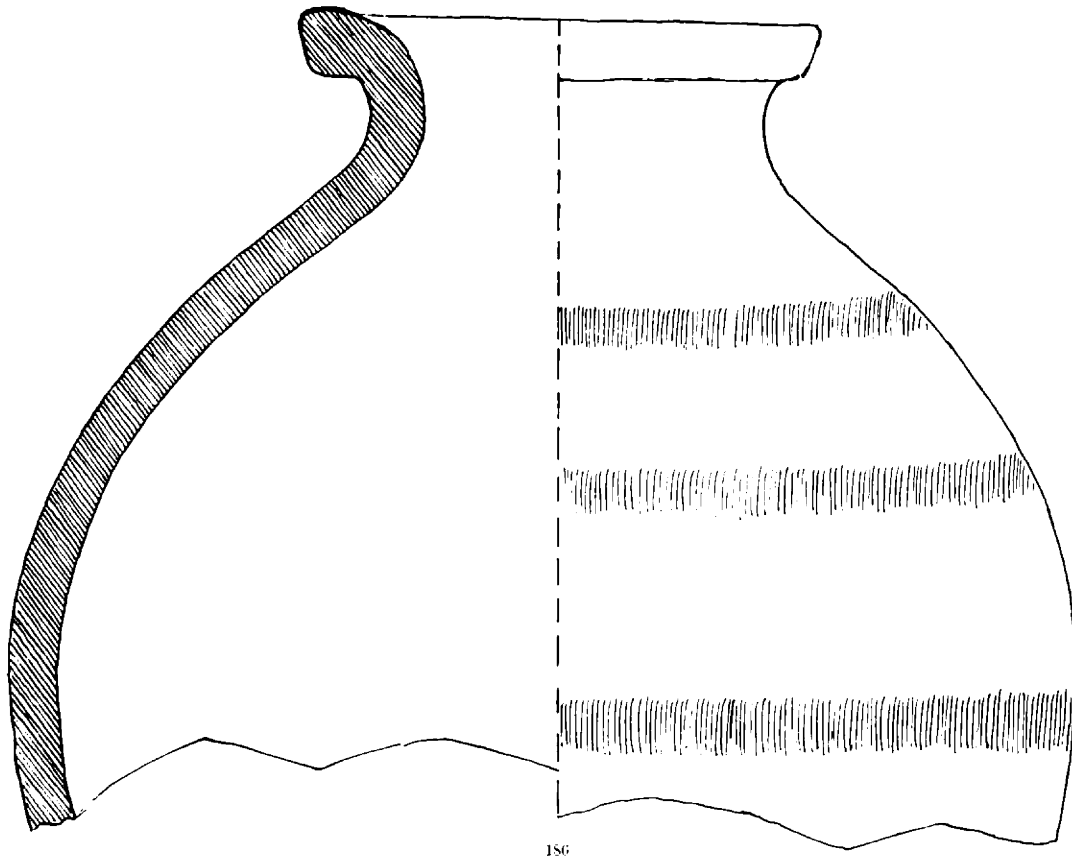
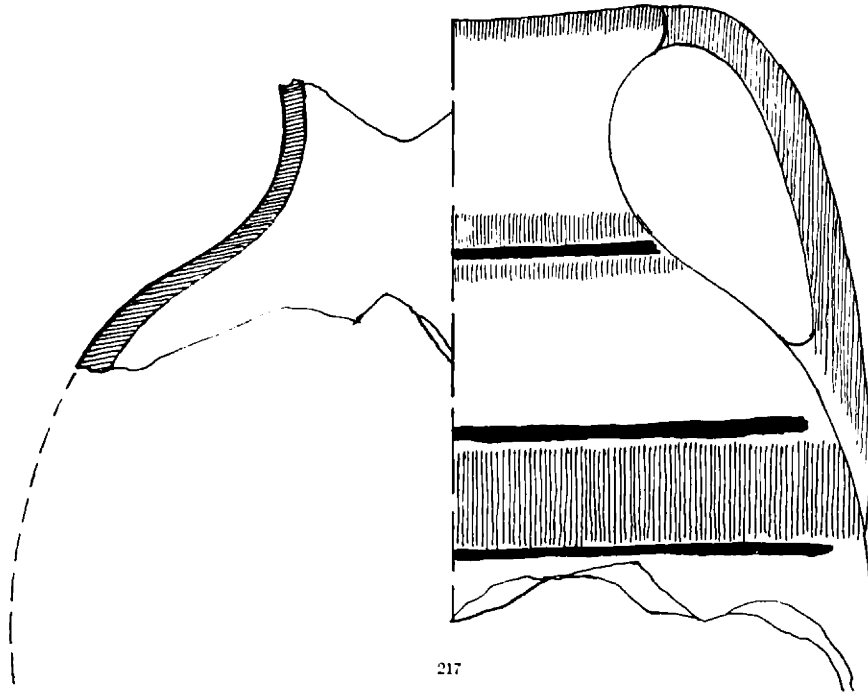


JAR SHERDS OF ALIŞAR V DECORATED WITH PAINTED BANDS. SCALE, 1:2

PLATE IV

No.	Provenience	Decoration
217.....	Plot 10 of 1927	Dark brown and red-brown on light buff
186.....	Plot 9 of 1927	Dark red-brown on light buff

PLATE IV



JAR SHERDS OF ALIŞAR V DECORATED WITH PAINTED BANDS. SCALE, 1:2

PLATE V

No.	Provenience	Decoration	Remarks
b 1180:12 and 21	Y 7, 2.10-2.70 deep, in Stratum IV	Dark brown (lustrous) and brownish purple on buff	Apparently part of the same pot as No. b 1180:12 and 21
b 1180:68.	Y 7, 2.10-2.70 deep, in Stratum IV	Dark brown (lustrous) and brown-red on buff	
b 140.	L 5, Level 1-2	Dark brown and red on light buff	
1305.	Surface	Dark brown on brown-buff	Alişar IV remains prevailing in find-spot; some Alişar V remains
b 742:6.	AA 16, .80-1.40 deep	Dark brown and whitish gray on smooth brown	

PLATE V

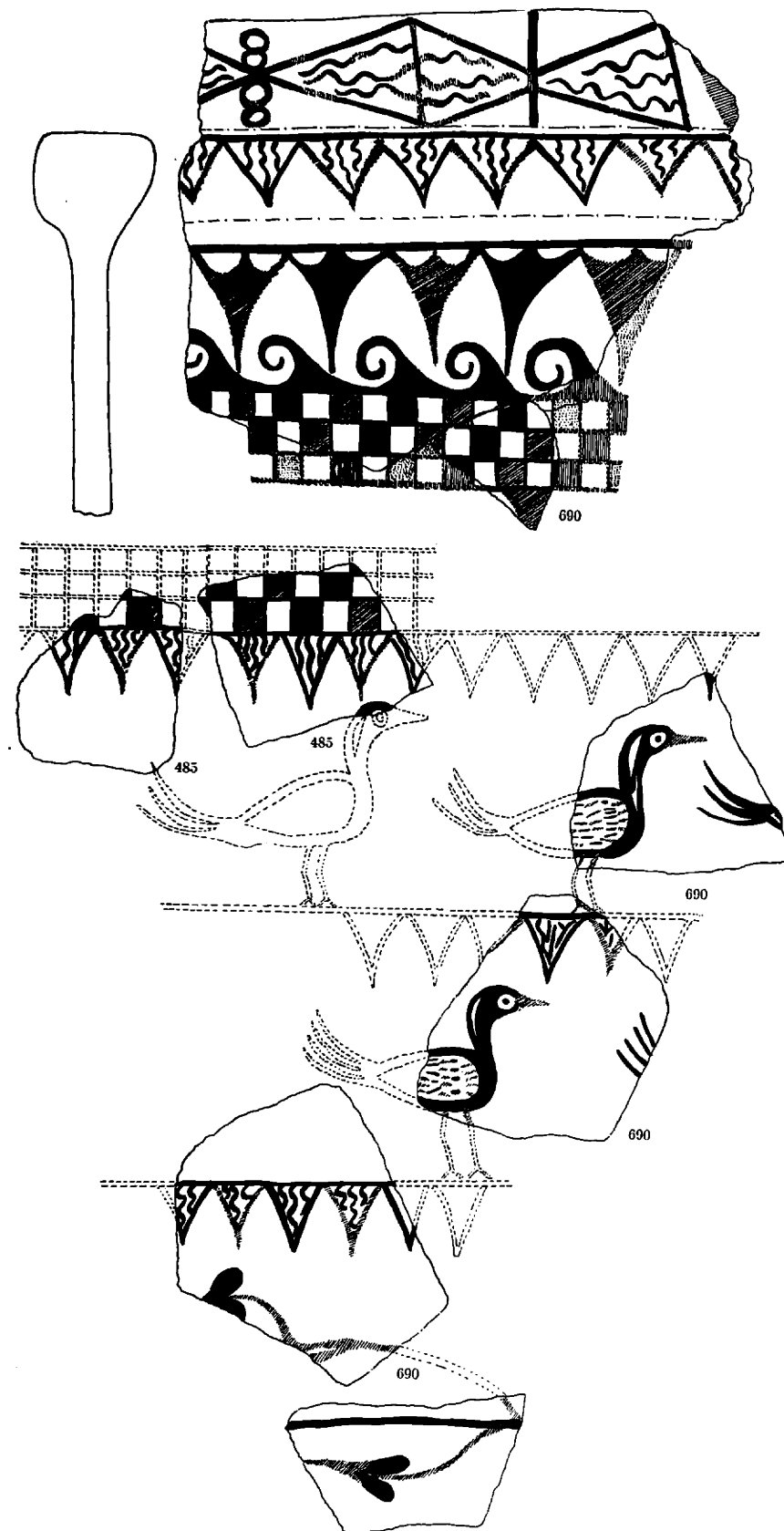


JAR SHERDS OF ALIŞAR V PAINTED WITH INTRICATE ANIMAL DESIGNS. SCALE, 1:2

PLATE VI

No.	Provenience	Decoration	Remarks
690 and 485.....	Plot 26 of 1927	Black and brown-red on light buff	Fragments seem to belong to one plaque

PLATE VI

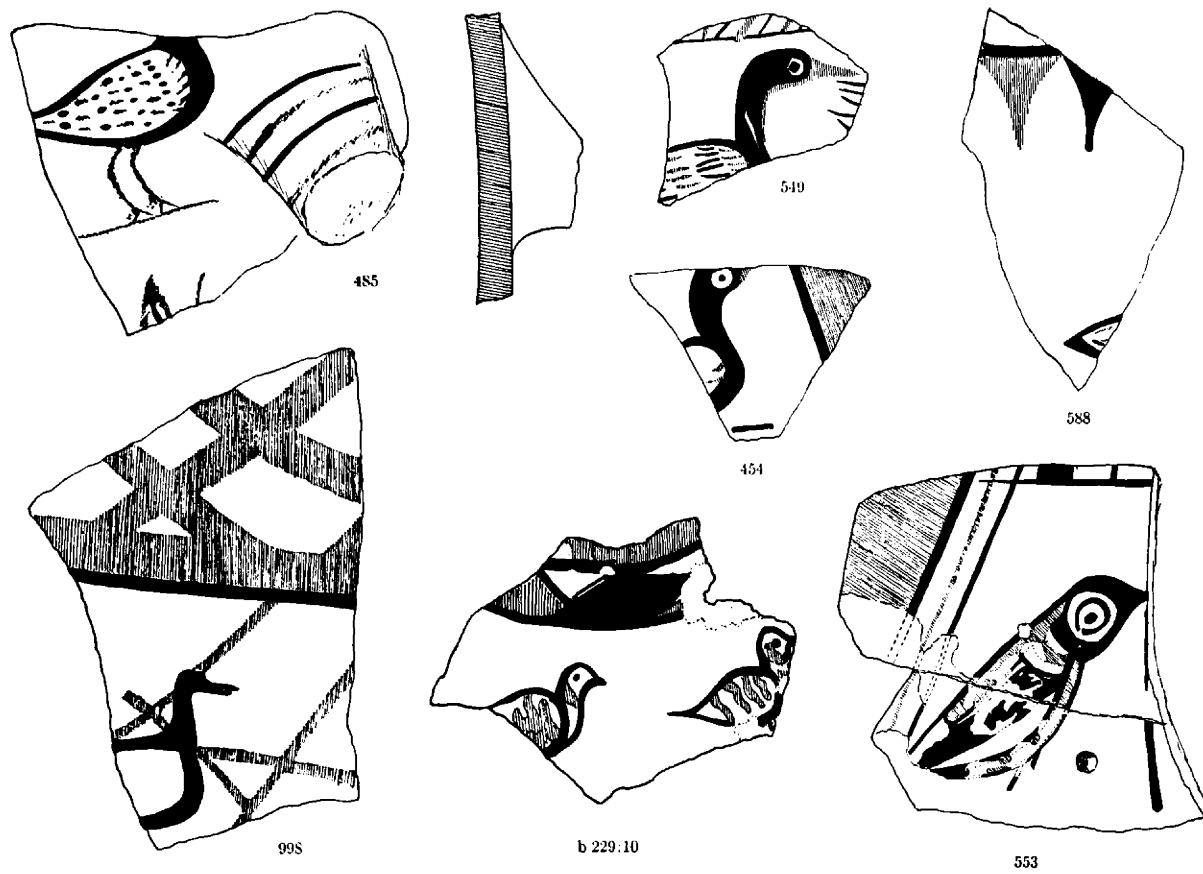


FRAGMENTS OF A POTTERY PLAQUE OF ALIŞAR V DECORATED WITH PAINTED BIRDS. SCALE, 2:5

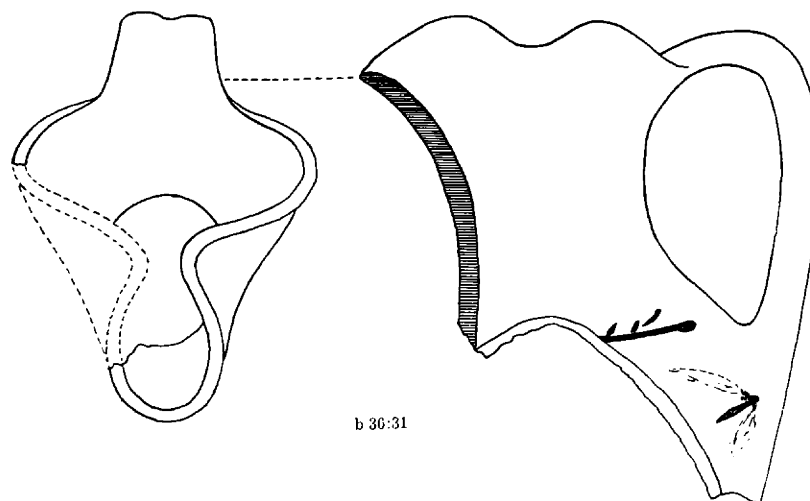
PLATE VII

No.	Provenience	Decoration
485.....	Plot 22 of 1927	Black and red on light buff
549.....	Plot 23 of 1927	Black-brown and red-brown on light buff
454.....	Plot 21 of 1927	Black-brown and red-brown on light buff
588.....	Plot 24 of 1927	Black-brown and red on light buff
998.....	Plot 38 of 1927	Red-brown and black-brown on brown-buff (smooth)
b 229:10.....	F-G 8, Level 2	Dark gray and grayish brown-red on gray-brown
553.....	Plot 23 of 1927	Black-brown and red-brown on light buff
b 36:31.....	F 14, Level 3	Gray-black and brown-red on grayish white

PLATE VII



A.—JAR SHERDS OF ALIŞAR V DECORATED WITH PAINTED BIRDS. SCALE, 1:2

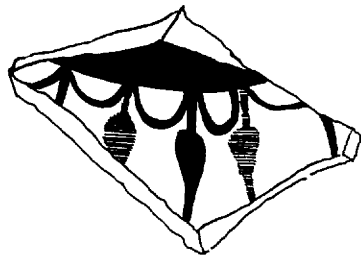


B.—PITCHER FRAGMENT OF ALIŞAR V WITH PAINTED DECORATION. SCALE, 1:2

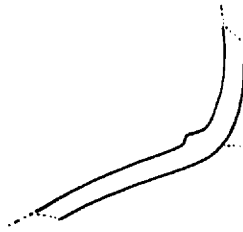
PLATE VIII

No.	Provenience	Decoration
140	Plot 7 of 1927	Dark brown, red-brown, and gray on light buff
b 229:76	F-G 8, Level 3, Section 15	Dark brown-red, light gray, and light grayish white on red
1175	Plot 45 of 1927	Black-brown and red-brown on brown-buff
1053	Plot 40 of 1927, .20 deep	Dark red on brown-buff
b 36:111b	F 14, Level 3	Red and dark brown on grayish white
b 36:111a	F 14, Level 3	Red on grayish white
b 227:12	L 5, Level 1-2	Dark brown-black on light brown
119	Plot 6 of 1927	Dark brown on light buff
327	Plot 15 of 1927	Black-brown on gray

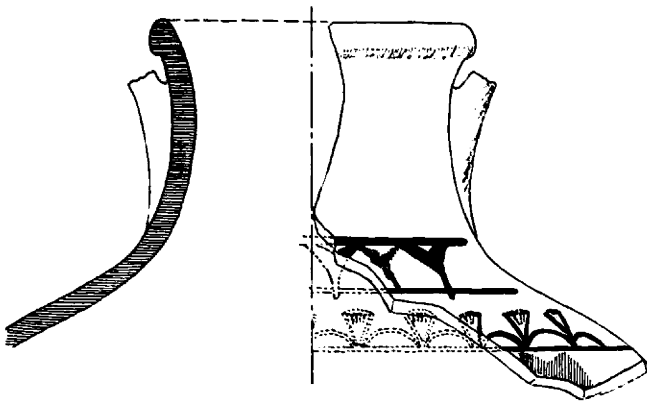
PLATE VIII



140



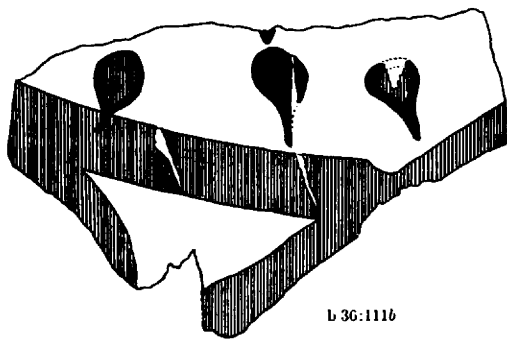
b 229 76



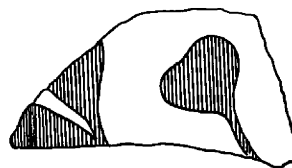
1175



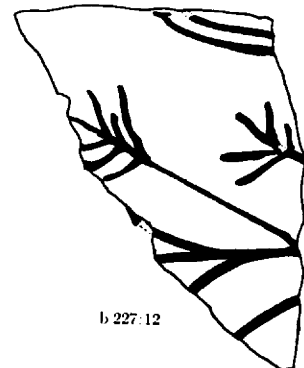
1053



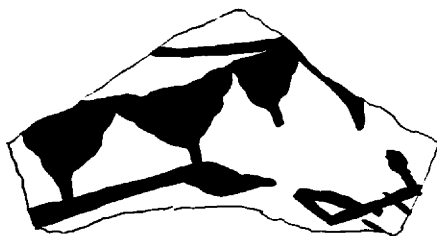
b 36:111b



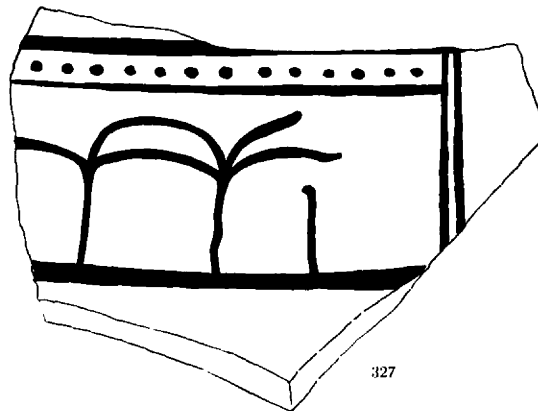
b 36:111a



b 227:12



119



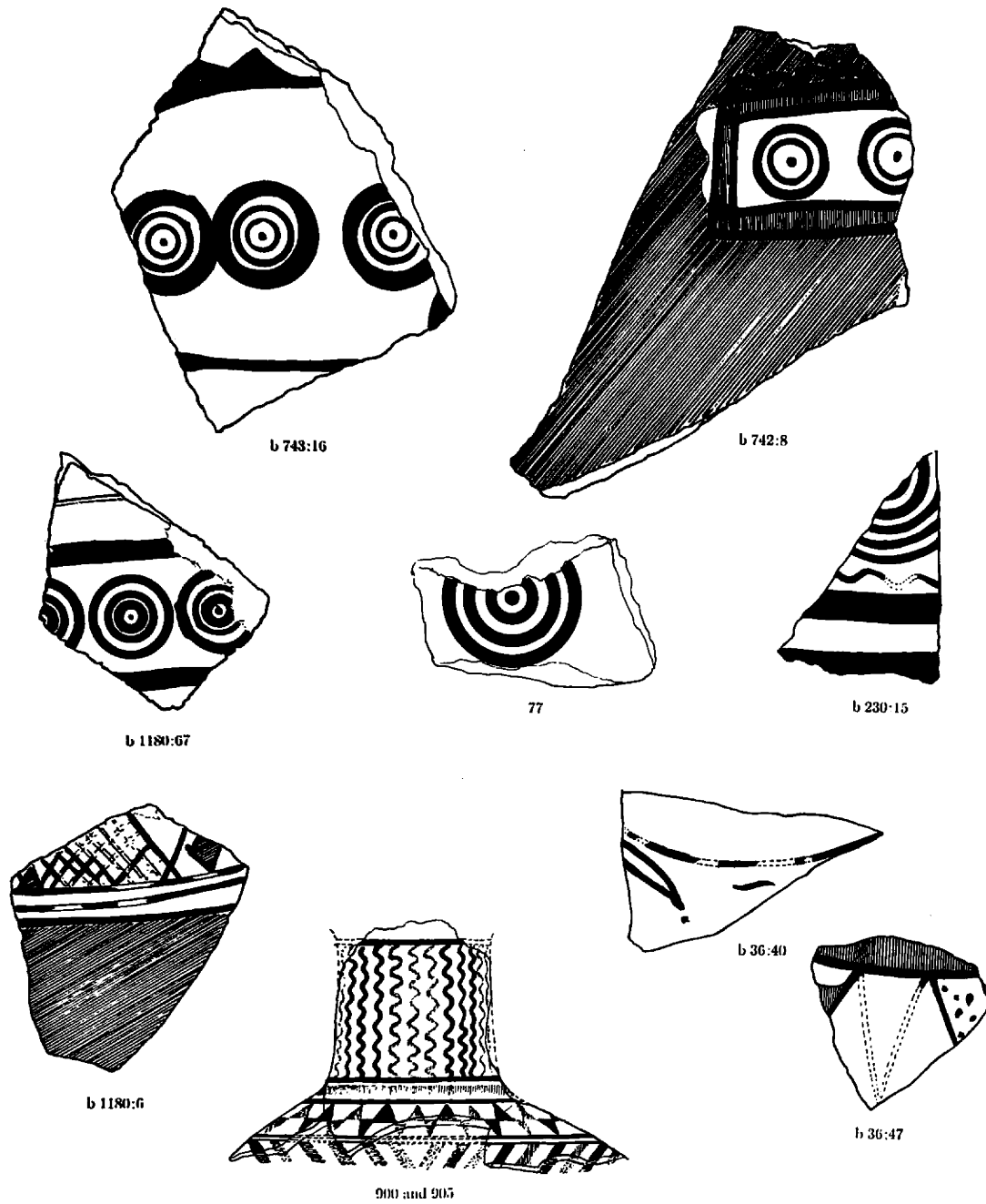
327

JAR SHERDS OF ALIŞAR V PAINTED WITH PLANT MOTIVES. SCALE, 1:2

PLATE IX

No.	Provenience	Decoration
b 743:16	X 19, 3.40–3.60 deep	Dark brown on brown
b 742:8	AA 16, 1.40–2.10 deep	Gray-black, red, and light gray on brown
b 1180:67	Y 7, 2.10–2.70 deep	Dark gray on grayish white
77	Plot 4 of 1927	Red-brown on grayish white
b 230:15	L 4, Level 1	Dark brown on gray-brown
b 1180:6	Y 7, 0–.90 deep	Dark brown, light brown, and grayish white on light brown
900 and 905	Plot 35 of 1927	Dark brown and red-brown on brown
b 36:40	F 14, Level 3 <i>a–b</i>	Gray-black on gray-white
b 36:47	F 14, Level 3 <i>c</i>	Gray-black (lustrous) and light buff on brown

PLATE IX



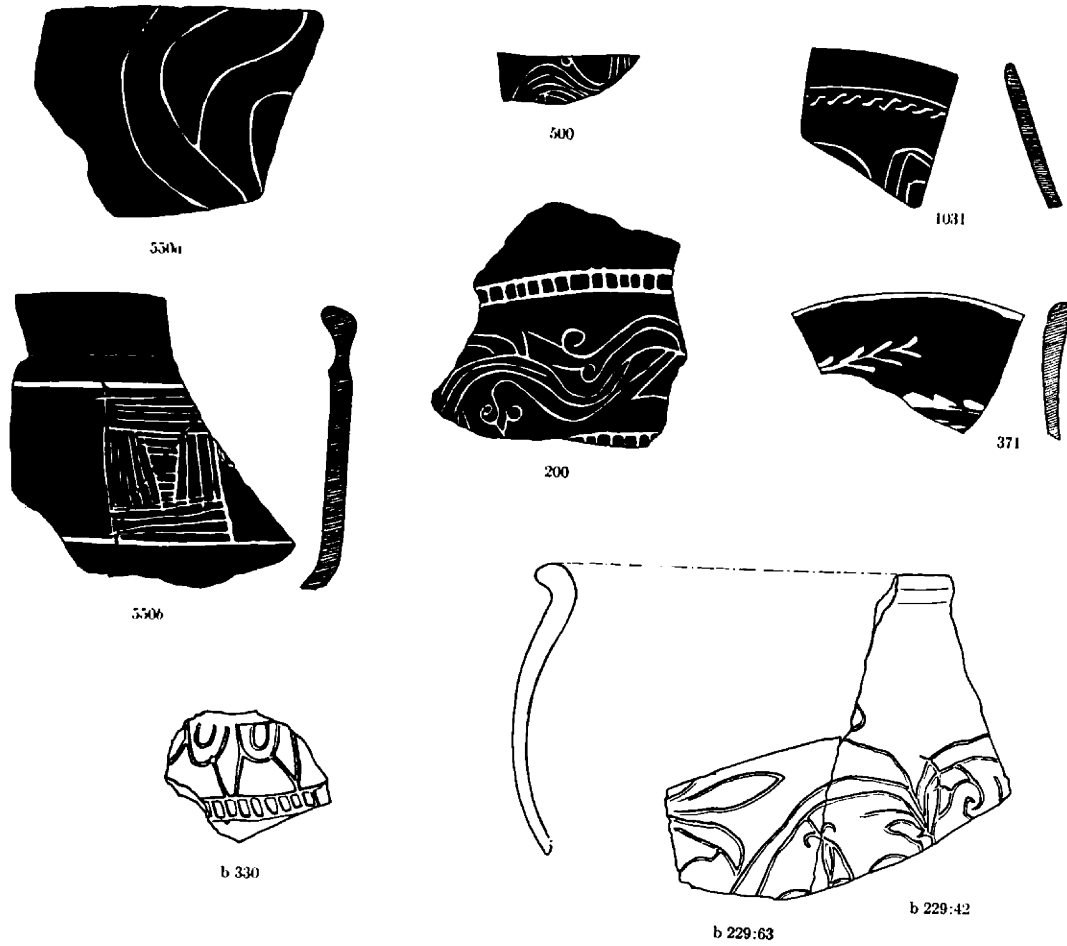
JAR SHERDS OF ALIŞAR V PAINTED WITH CONCENTRIC RINGS AND OTHER GEOMETRICAL DESIGNS. SCALE, 1:2

PLATE X

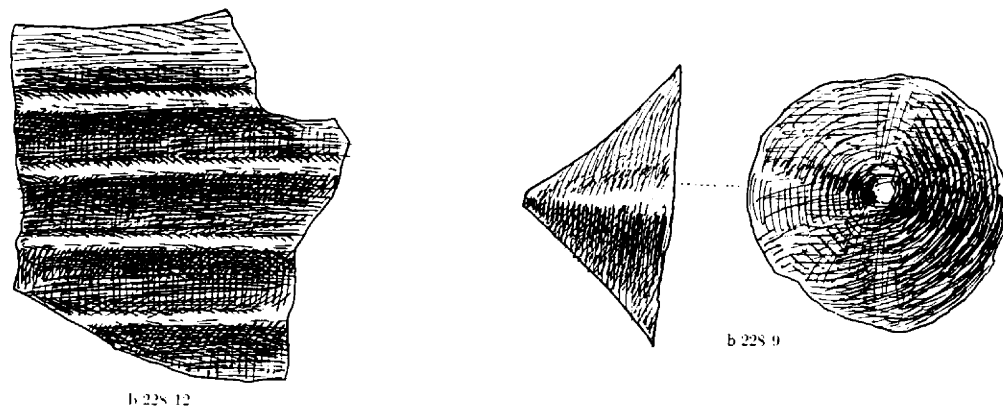
No.	Provenience	Description	Remarks
550a.....	Plot 23 of 1927	Incised, black, polished	1031 a Stratum VI object?
550b.....	Plot 23 of 1927		
500.....	Plot 22 of 1927		
1031.....	Plot 40 of 1927		
200.....	Plot 9 of 1927, Section 1		
371.....	Plot 17 of 1927	Iridescent black with a plant pattern in brown	
b 330.....	F 14, Level 3c	Red incrustation	
b 229:63 and 42.....	F-G 8	Smooth gray	No. b 229:63 was found during the removal of Level 1; No. b 229:42 was in refuse between Levels 2 and 3
b 228:12.....	F 8, Level 1	Gray-brown	Fluted
b 228:9.....	F 8, Level 1	Gray-white	In breast form*

* Cf. Vessel 184 in *OIP* VI 256 and frontispiece.

PLATE X

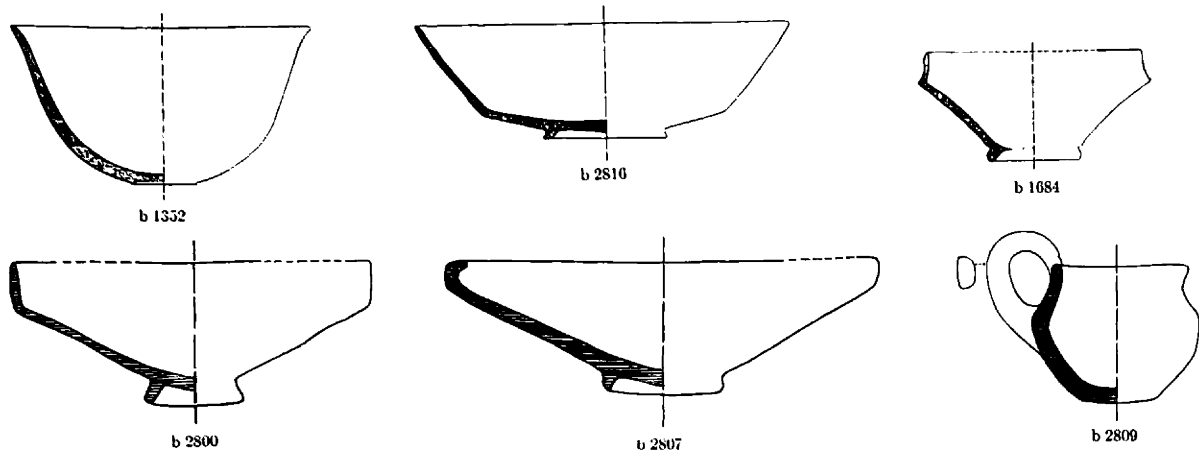


A.—INCISED BLACK SHERDS OF AEGEAN VESSELS AND INCISED GRAY SHERDS, ALL FROM STRATUM V. SCALE, 1:2

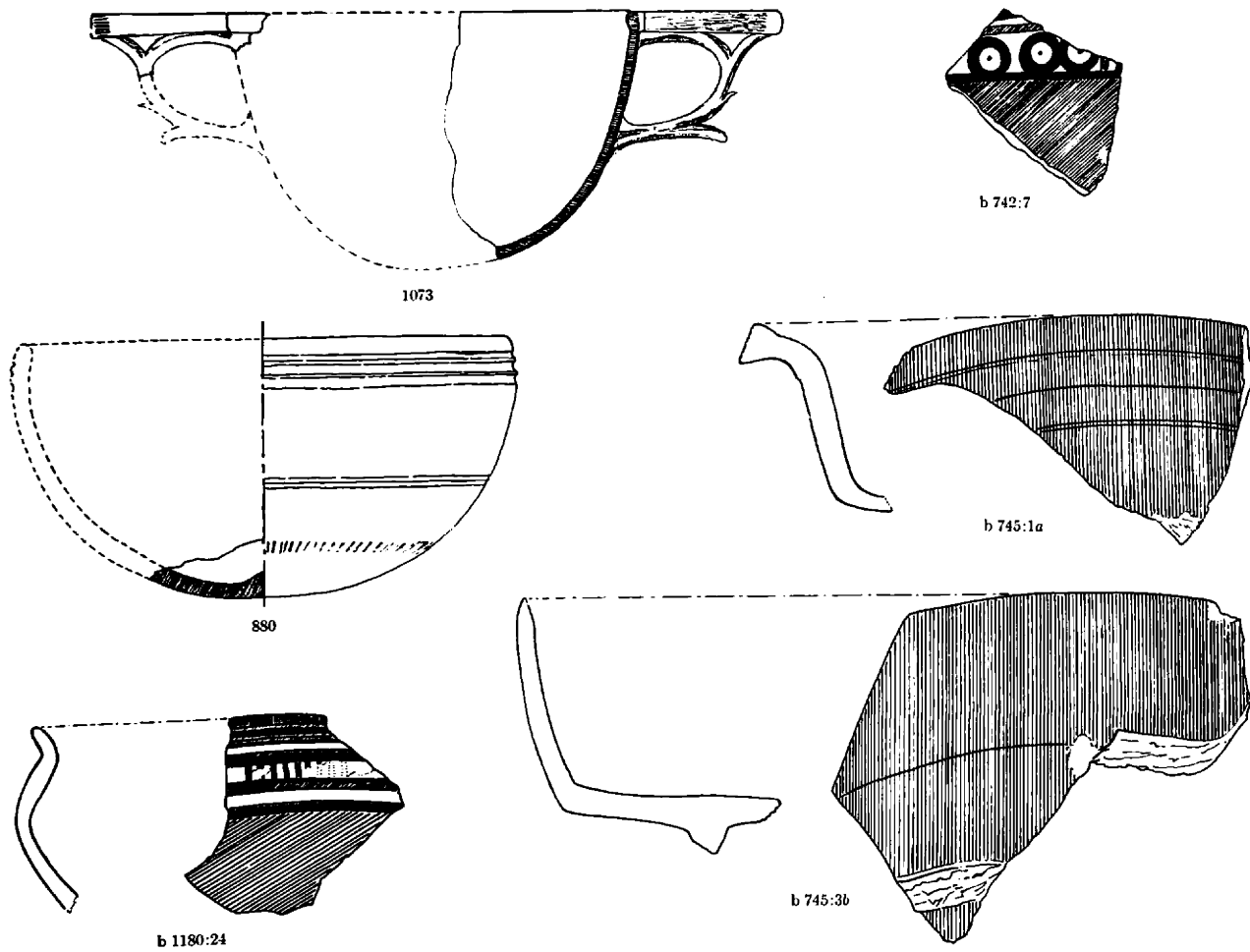


B —FRAGMENTS OF RELIEF ORNAMENTATION OF ALIŞAR V. SCALE, 1:2

PLATE XI



A.—BOWL AND CUP FORMS OF ALIŞAR VI. SCALE, 1:4



B.—SHERDS OF ALIŞAR VI WITH PAINTED DECORATION SCALE, 1:2

