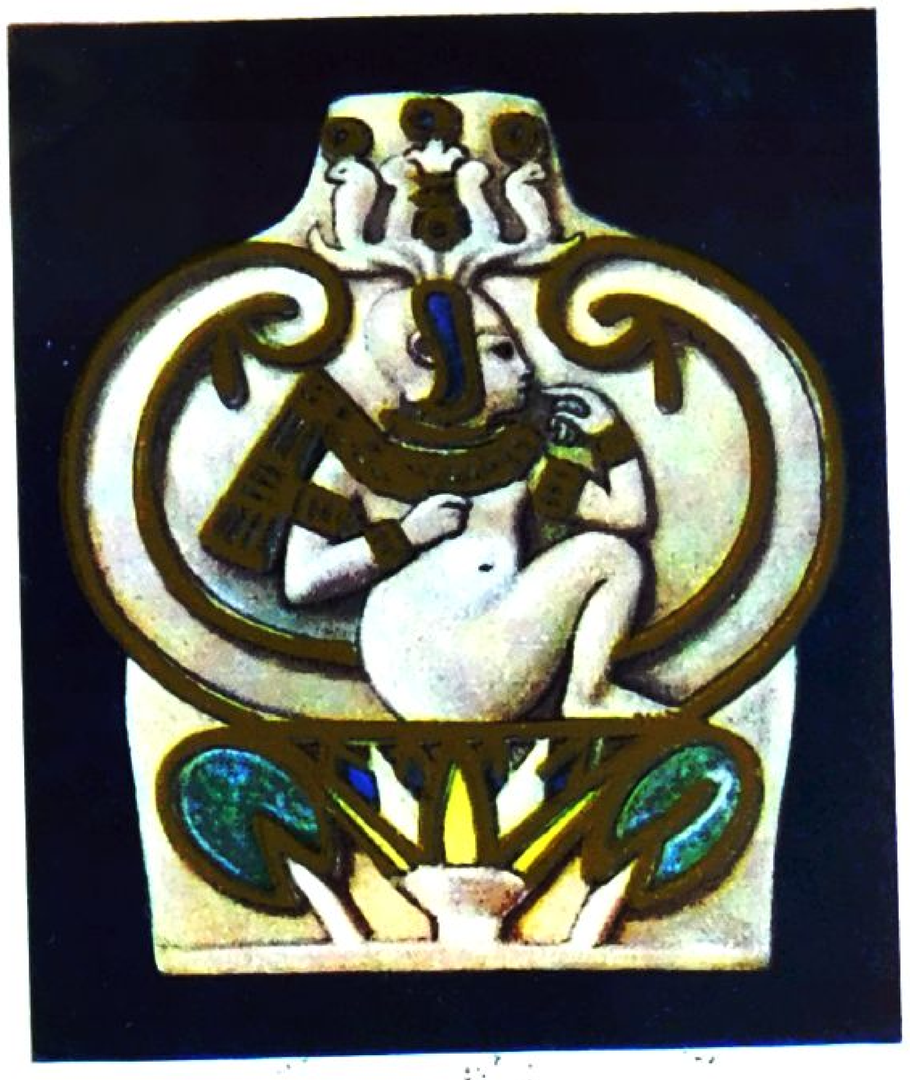

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1 THE CHILD HORUS (PAINTED BY MR. CHARUBY)

2 SOME COLOURED INSETS (PAINTED BY MRS. BRUNTON)

SAMARIA-SEBASTE · REPORTS OF THE WORK OF THE JOINT EXPEDITION IN 1931-1933 AND OF THE BRITISH EXPEDITION IN 1935 · NO. 2 · EARLY IVORIES FROM SAMARIA

First published by the PALESTINE EXPLORATION FUND in 1938
Reprinted by the PALESTINE EXPLORATION FUND, 1972
2 HINDE MEWS, MARYLEBONE LANE, LONDON W1M 5RH
International Standard Book Number 9502279 0 0

Printed in Great Britain
by W & J Mackay Limited, Chatham

EARLY IVORIES FROM SAMARIA

by

J. W. CROWFOOT & GRACE M. CROWFOOT

With a Note by

E. L. SUKENIK

1938

LONDON

PALESTINE EXPLORATION FUND

FOREWORD

These *Early Ivories from Samaria* need no commendation. Their intrinsic interest, as works of art and craftsmanship, and their well-established place in the history of Samaria, give them peculiar significance, and supplement the collections from Nimrud and from Arslan Tash in North Syria, which closely resemble them, and give them a date so close to that of Ahab that they may safely be attributed to the "ivory house that he built" as described in the Book of Kings.

Small and fragile, and often discoloured by fire, as well as by soil, these ivories owe their recovery, in such numbers, to the patience and skill of the excavators, and their interpretation to the knowledge and judgment, and once again to the delicate handling of the writers of this account of them. Their material itself recalls the wide early range of the elephant in Egypt and Syria, and also the lively intercourse of the Nearer East, in the period to which they belong. Their subjects and characteristic style belong to a period before the Assyrian domination, and reveal the Syrian culture which, with that of Egypt from which it derived so much, chiefly influenced the art of Solomon's temple, and the symbolic imagery of early Hebrew literature.

The excavation, from which these early ivories are among the principal finds, will be described in subsequent volumes, uniform with this one. Its results amply reward the generous contributions of the supporters of the Joint Expedition, and the skilful and willing co-operation of all its members.

JOHN L. MYRES.

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Note. Unless otherwise stated, all the ivories have been reproduced in natural size and all the photographs from which the reproductions have been made were taken by the Photographic Section of the Department of Antiquities in Jerusalem with one or two exceptions.

LIST OF FIGURES IN THE TEXT

Note. The drawings above were made by Mr. N. Avigad.

LIST OF ABBREVIATIONS

A.T.	*Arslan Tash* by F. Thureau-Dangin and others in *Bibliothèque archéologique et historique*, Tome xvi, 1931.
Barnett	Article in *Iraq* II, 1935.
Carter and Mace	*The tomb of Tut.ankh.amen*, 3 vols. by Howard Carter and Mace, 1923–1933.
Davies	*Ancient Egyptian Paintings* by N. M. Davies, 1936.
H.E.	*Harvard Excavations at Samaria*, 1924.
I.L.N.	*Illustrated London News*.
Layard	*The Monuments of Nineveh*, 1849.
Layard II	*The Monuments of Nineveh*, second series, 1853.
Montet	*Byblos et l'Égypte*, 1928.
Perrot	Perrot and Chipiez, *Histoire de l'art dans l'antiquité*, 1884.
Poulsen	*Der Orient und die frühgriechische Kunst*, 1912.

PREFACE

From 1931 to 1933 excavations were undertaken in Samaria by a Joint Expedition in which five institutions participated—Harvard University, the Hebrew University in Jerusalem, the Palestine Exploration Fund, the British Academy, and the British School of Archaeology in Jerusalem. The work was continued in 1935 by a smaller expedition in which only the three last-named institutions took part. The present report is the first of a series in which it is hoped to publish the results of the two expeditions. The other sections will be devoted to the site and the buildings, the pottery and other small finds, and the inscriptions, coins and stamped jar-handles.

A great many friends have helped us in preparing this volume.

By a stroke of good luck Mr. Alan Rowe happened to be at Jerusalem in 1932 when the first big find of ivories was made. Egypt counted for so much in the period when the ivories were carved that his knowledge about Egypt in Palestine has proved invaluable. It has been placed at our disposal from the very beginning and we are most deeply grateful to him.

Mr. Nahman Avigad of the Hebrew University, who was the draftsman of the Expedition, is another friend to whom we are particularly indebted. We cannot say how many of the reconstructions in this book are due to his patience and acuteness.

All but five or six of the photographs which are reproduced in this volume have been taken by Mr. Schweig and his assistants in the Photographic Section of the Department of Antiquities in Jerusalem and readers will be able to judge how much we owe to the Department for permission to publish them. This is only a part of the debt which we owe to Mr. Richmond, the late Director, Mr. Hamilton, the present Director, and the staff of the Government Museum.

We have to thank the authorities in the British Museum for facilities to study the large collection or collections of ivories from Tell Nimrud, and in particular Mr. Sidney Smith, Mr. R. D. Barnett, Dr. H. J. Plenderleith and Mr., now Professor, S. R. K. Glanville for much help and advice.

The names of others who have given us assistance will be found in the pages which follow, Professor E. L. Sukenik who was our colleague at Samaria, Dr. Siegfried Schott of Heidelberg, Mr. Horace Beck, and Dr. P. D. Ritchie, late of the Courtauld Institute, but we cannot deny ourselves the pleasure of thanking them again.

Our daughter Joan has helped us a great deal in the final preparation of this book for the press.

J.W.C. G.M.C.

Geldeston,
July, 1938.

1. THE FIND AND IDENTIFICATION OF THE IVORIES

"The ivory house which he made" is mentioned as one of Ahab's titles to fame (1 Kings, xxii, 39). The words have a mythical ring: they echo the apes and peacocks of Solomon and the days when silver was nothing accounted of. One of our predecessors at Samaria dismissed them as a poetical way of describing the white colour and smooth surface of the stone walls which Ahab built. But ivory was extremely common in Syria for centuries before and after the time of Ahab. Much was brought by Phoenician traders (1 Kings x, 22): some may have still come from local sources. Syrian elephants are mentioned by two officials of Tuthmosis III (1501–1447): one of them describes the hunting by his master of a hundred and twenty elephants for the sake of their tusks: the other has left a picture of a living elephant being led by one Syrian tributary and tusks being carried by a second. Later, the kings of Assyria hunted the elephant in the regions of the Upper Euphrates and Khabur: on one expedition Tiglathpileser I (circa. 1100) bagged ten bulls and captured four elephants alive. During the first three or four centuries of the last millennium B.C. ivory was used on a profligate scale. Ivory objects are listed again and again on Assyrian inventories of spoil: they were offered by Hezekiah to Sennacherib in 701: and carved ivories have been found on many Syrian sites which flourished at this period. Shortly afterwards the Syrian elephant became extinct.[1]

But, to return to our text, what precisely is meant by an ivory house? If the writer of the book of Kings used words as loosely as we use them when we speak of the gold room in a museum meaning the room where gold objects are kept, the phrase might have meant nothing more than a room where the furniture was decorated with ivory, but this interpretation is very questionable. Sargon II, who was King of Assyria from 722 to 705, is said to have had a house of ivory, and Nebuchadnezzar of Babylon is said to have incrusted the door of his "chamber of repose" with ivory:[2] the Tyrians, according to Ezekiel, even inlaid ivory in the decks or benches of their ships.[3] It seems, therefore, likelier that an ivory house was a house with ivory let into the panelling round the walls. The finer houses of the day had foundations only of stone, the walls above the foundations were of sun-dried bricks, plastered as a rule outside and panelled inside with cedar wood: it was a natural thing therefore to incrust the cedar wood with ivory, and the inlaid panels one sees in Coptic churches and medieval Arab houses are a survival of this form of decoration. The word "house" is perhaps more misleading than the word "ivory": all that it means is a room or pavilion. The ivory house which Ahab made was, we suggest, a room with ivory inlaid in the panelling of the walls.

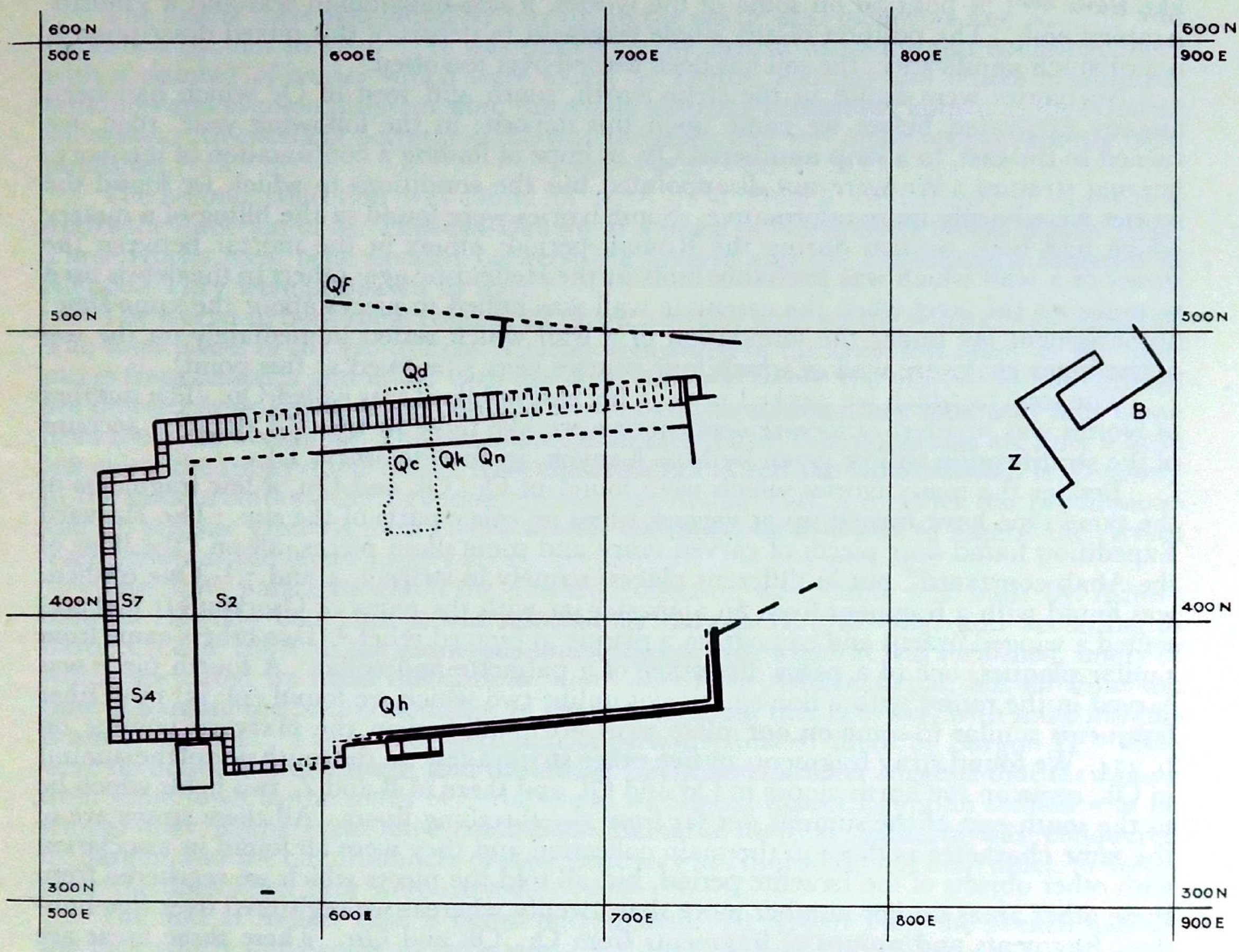
[1] See Appendix, p. 55.
[2] Winckler, *Die Keilschrifttexte Sargons*, 1889, p. 71, and Langdon, *Die Neubabylonischen Königsinschriften*, 1912, p. 119; Perrot and Chipiez, *Hist. de l'Art*, II, p. 313.
[3] Ezekiel, xxvii, 6.

In the course of our work at Samaria hundreds of fragments of ivory were found. Some might have fallen out of the frames of couches or thrones: many in all probability came from wall incrustations. They were found, smashed as a rule into tiny atoms, within a few metres of two great enclosure walls which ran round the summit of the hill in the time of the Israelite monarchy. No one who has studied these walls doubts that they were built in the reign of Ahab or his father Omri, and the strata where the ivories lay, though they were badly disturbed, contained many potsherds which are of the Israelite period. Read in this context the story of the ivory house loses its mythical air.

We have not succeeded in identifying even the foundations of the house itself. For more than 1,200 years after the reign of Ahab, the summit of the hill where the ivories were found was the centre of one of the greatest cities in Palestine. It is now given over to agriculture but for many centuries it was a busy residential quarter in which houses were built and destroyed and rebuilt again. A little of the great enclosure walls has survived but in the wide area which has been examined between these walls we have not recovered the plan of a single house belonging to the Israelite or Hellenistic period. We have found a number of foundations and even a few walls which can be assigned to early periods or sub-periods, but the first plans sufficiently coherent to make any sense date from the Roman period. In an earlier publication[1] we referred to traces of a " considerable building" "running parallel to the enclosure wall of the court" and the find of ivories near it suggested that this building was part of the ivory house. We had not realized at this time that there were two enclosure walls which ran parallel to one another along the north side of the summit. The "enclosure wall" we then referred to is the outer, casemated, wall: the "considerable building" is a short section of an inner enclosure wall. There are some rock trenches and fragments of early masonry near the find spot of the ivories, but we cannot make a room or pavilion out of them. The place itself must be described either by the co-ordinates on our plan or by the letters we used to designate the working field strips: the letters seem to be the less forbidding.

The strip where we made the richest haul of ivories was called Qc (see sketch-plan). Some of the ivories were as white as at the time when they were carved: others had been blackened by fire. The most perfect of the former were found about 3 m. below the surface, embedded in a mass of sticky yellowish clay which was evidently composed of disintegrated mud bricks: fragments of one or two bricks of the same colour and texture were found near. This clay was not on the rock but near it, and between the earth and the rock there were some bits of late Rhodian ware, a piece of red glazed pottery and some other Hellenistic sherds. It was plain that the lump in which the ivories lay had been moved *en bloc* in, or after, the Hellenistic period, and it seems reasonable to conjecture that the clay itself came from the walls of the house where the ivories had once stood. The ivories in this lump were in a fragile state and as soft as cheese when they were first brought up: after the first ivories were found we removed the earth in sections and let it dry off before attempting to extricate the plaques. Above this spot a broken stratum of ashes stretched over a large part of the area and there was a quantity of burnt ivory lying near: some of the pieces had turned a fine "ivory black" colour, others were greyish. The burnt pieces unlike the white were hard, shiny and comparatively heavy. In the same context there were remains of charred wood, part of an unworked tusk or tusks, some midden rubbish, such as animal bones, burnt olive stones and a pomegranate husk, which came presumably from a broken refuse pit. The artefacts included many Israelite potsherds, some glass and paste insets

[1] P.E.F.Q.S., 1933, p. 7.



The sketch map above shows the walls of the Israelite palace enclosures on the summit of the hill and other Israelite walls on the lower slopes to north and east. The excavations of the Harvard Expedition lay west of the line 600E and the letters S2, S4 and S7 mark the position of the strips where ivories were found during their work. The letters Qc, Qk, Qd, Qf, Qh, Z and B, mark the position of the strips where ivories were found during the work of the Joint Expedition. Qn marks the strip where they were found by the British Expedition in 1935. Scale 1 : 2,500.

like those still in position on some of the ivories, a neo-Babylonian seal and a Philisto-Arabian coin. The position of any single fragment in debris of this mixed description is not of much significance: the soil has been turned over too often.

No ivories were found in the strips north, south and west of Qc which had been already excavated before we came upon this deposit: in the following year, 1933, we turned to the east, to a strip numbered Qk, in hope of finding a continuation of the ivory-bearing stratum. We were not disappointed but the conditions in which we found the ivories were hardly more informative. Some ivories were found in the filling of a quarry which had been worked during the Roman period: others in the mortar between the stones of a wall which was probably built in the Hellenistic age: others in the debris used to make up the level when the casemate wall was pulled to pieces about the same time: one fragment lay under the foundation of a wall which rested immediately on the top of the inner enclosure wall of which four courses were preserved at this point.

The strip in which we worked in 1935 lay east of Qk: it was called Qn. The number of ivories was smaller: otherwise conditions were like those in Qk. (A detailed account of the stratification will be given by Miss Kenyon, in *Samaria-Sebaste* I.)

Besides the many ivories which were found in Qc, Qk and Qn, a few fragments of the same type have turned up at various times on other parts of the site. The Harvard Expedition found four pieces of carved ivory and some plain pieces, all on "the floor of the Ahab courtyard" but in different places, namely in strips 2, 4 and 7.[1] One of them was found with a fragment from an alabaster jar with the name of Osorkon II: it represented a winged uraeus and came from a plaque in pierced relief.[2] Two others came from similar plaques, one of a palm, the other of a palmette and collar. A fourth piece was carved in the round with a lion's head not unlike two which we found (pl. ix, 1). Other fragments similar to some on our plate xxiii are published in the Harvard volume on p. 374. We found stray fragments in five other strips, a few on the south side of the summit in Qh, some on the north slopes in Qd and Qf, and three in B and Z, two fields which lie to the south-east of the summit not far from the threshing floors. All these strays are of the same character as those in the main collection and they were all found in association with other objects of the Israelite period, but all told the pieces which we registered from these other areas do not number more than twenty whereas we registered over five hundred fragments and groups of fragments from Qc, Qk and Qn. These three areas are contiguous and, as we have already said, Qc was by far the most productive of the three: the numbers dwindled steadily the farther east we travelled. It seems to us certain therefore that Qc was the principal centre of dispersal, the site, that is to say, of the original house of ivory.[3]

The site is a good one. It lies in a central position on the north side of the hill sheltered from the south-west winds which are the most disagreeable winds at Samaria. In much later days the Romans built an exedra close by which looked over the broad valley to north. It is a site which a king might well have chosen.

The ivories themselves are very closely related to carved ivories in two other collections.

[1] *Harvard Excavations at Samaria*, p. 368, pls. 56,66. [2] Compare our pl. xiii, 4, 5.
[3] The plates in this volume contain photographs of 197 plaques or fragments of plaques : of these 184 come from Qc, 11 from Qk and 1 each from Qn and Qf. All the insets on plate xxiv also came from Qc.

The first of these was found by Layard in the north-west palace at Tell Nimrud and published by him in 1849.[1] It was placed in the British Museum and exhibited there with a number of ivories which were found by Loftus, Rassam and others in different buildings and even on different sites, the whole lot being commonly known as the Nimrud collection. An excellent account of the way the collection was made up has recently been published.[2]

The second collection was found in 1928 by a French archaeological expedition under the direction of M. Thureau-Dangin at a place in North Syria called Arslan Tash. These ivories have been divided between the Louvre and the Government Museum in Aleppo. They were published in 1931.[3]

The ivories in both these collections throw a strong light on the ivories from Samaria. The finer pieces in the group from Nimrud are carved in the same low relief as the finer pieces from Samaria and inlaid with the same coloured insets: the subjects in both groups are derived from Egyptian models and the drawing is similar: they look as if they came from the same workshop. The resemblances in the Arslan Tash collection are only a little less close: the subjects are drawn from the same circle and the workmanship is obviously in the same tradition: the Egyptian elements at Arslan Tash are rather less pronounced and on stylistic grounds most critics would, we think, be disposed to regard the Arslan Tash group as the later.

The N.W. palace in which the Layard collection was found was built by Ashurnasirpal III (885–860), but it was restored by Sargon II (722–705) and according to Barnett (*l.c. p.* 185) "of the numerous small objects with which it was furnished, many of which are dated by royal inscriptions, none date from Ashurnasirpal, but all from the time of Sargon, the 'second founder' of the palace"—all, that is to say, with some insignificant exceptions. The ivories were almost certainly placed there by Sargon II. They were no doubt loot or tribute, and the strong Egyptian character suggests that they came from some town in the south of Syria where we should expect Egyptian influence to be strong: they might even have come from Samaria itself as Samaria was conquered by Sargon, but the circumstances of their discovery at Nimrud do not help much to determine the date when they were carved.

The find at Arslan Tash is better documented. At Arslan Tash the French had all the luck which was denied us in Samaria and they made admirable use of it. The site was not of much importance in later days, and the place where the ivories were found was never seriously disturbed by subsequent occupants. They were discovered in a building which served as a sort of annex to the local palace. The walls of both palace and annex were still standing to some height: some of the original paving was left on the floors: the plan was easily recovered. Many of the ivory plaques are in almost perfect condition: one series which once decorated the framework of a bed was found lying just as the plaques fell when the wood rotted away: other plaques were broken and scattered rather further afield. Traces of more than one bed were found and among the debris from the beds were the fragments of an inscription in Phoenician or Aramaic letters. The inscription is not complete, but it contains a name of the first importance, the name of "our lord

[1] *The Monuments of Nineveh*, 1849. See in particular p. 19 and pl. 88-91 : these plates contain all but a few fragments of what Layard found in this area.

[2] See R. D. Barnett in *Iraq* II, 1935, pp. 179–210.

[3] *Arslan Tash* by F. Thureau-Dangin, A. Barrois, G. Dossin, and Maurice Dunand (Tome xvi in the *Bibliothèque archéologique et historique*). It is referred to below as A.T.

Hazael". A name of the first importance because it is the name of the king of Damascus whose accession circa. 842 B.C. is described in a curious story about the prophet Elisha.[1] The Hazael of the ivories has been identified with the Hazael of Damascus by means of a second inscription which was found at Nimrud. This inscription gives an inventory of the loot which was taken from Damascus in the time of Hazael's successor by the Assyrian king Adad-narari III (809–782) and in the inventory beds and stools of ivory from the royal palace are specifically mentioned (*A.T.*, p. 139). The ivories from Arslan Tash were carved therefore probably within a decade or two of the reign of Ahab which lasted from about 875 to about 851.

This date is indicated also by the character of a number of letters which are carved on various ivories both from Samaria and Arslan Tash, either on the back or the tenons: they did not form part of an inscription and were not meant to be seen once the ivories were in place, they were clearly, we think, cut as guides to the joiner who had to assemble the plaques in a row on the wall of a room or in the frame of a piece of furniture. The letters from Samaria, which are discussed below by Professor Sukenik, are like those from Arslan Tash: both belong to a ninth century form of the Southern or Hebraeo-Phoenician alphabet, as we know it on the Moabite inscription of King Mesa.

In the present state of our knowledge of the history of art in Syria scholars may be sceptical of attempts to date this or that object on grounds of style alone. It is good therefore in the case of the Samaria ivories to be able to put forward three independent reasons of an objective character for assigning them to the first half of the ninth century, the tradition in the book of Kings that Ahab made an ivory house, the character of the letters on the backs of many of the plaques which points to this period, and the date proposed on epigraphic evidence by the French Expedition for the very similar collection from Arslan Tash.

NOTES ON HEBREW LETTERS ON THE IVORIES

BY E. L. SUKENIK

A number of plaques bore signs, most of them resembling old Hebrew letters; several contained a single letter, a few had two signs. Most of the signs are incised on the back of the plaques but one or two are scratched on the face or the tenons. Some are clearly letters, others are indecipherable marks. Similar marks were found on the ivories at Arslan Tash,[2] where they appear likewise both singly and in groups. Their purpose was apparently either to mark each piece before assembling, or else to indicate the workshop or the individual artist. The single letters met with on the Samaria ivories are א, ב, ג, ד, ה, ו, ז, ח, ט, י, נ, ם, ע, פ, ר, ת. In groups we find אח, ט accompanied by a vertical stroke, and ו with some illegible signs.[3]

What conclusions can be drawn from the form of these letters with regard to the date of the ivories?

As we do not know whether our ivories were carved in Samaria or in some other

[1] 2 Kings, c. viii. [2] *A.T.*, pp. 92 ff. and figs. 33, 50.

[3] The "illegible signs" we would compare with the dashes which are often added to letters of the Greek alphabet in building fragments, obviously resorted to when the masons have exhausted the plain alphabetic marks.—Eds.

place, somewhere in Syria for instance, the letters might conceivably belong either to the Hebrew-Phoenician or to the Aramaic alphabet. It is true that the letters in the old Aramaic inscriptions do not differ much from the ancient Hebrew letters, but both possibilities have to be taken into consideration.

The letters that have a bearing on our question are especially *aleph*, *waw*, *zayin*, and to some extent *heth*, *yod*, *taw*. A comparison with other inscriptions gives the following results:

The form of the *aleph* resembles the *aleph* in the Mesha stele; on the Siloam inscription the lower transverse stroke does not continue on the other side of the vertical line.

The form of the *waw* also points to the earlier form in which the head is composed of two roughly semi-circular lines meeting at the top of the vertical line, as in the Mesha stele; in the Siloam inscription, on the other hand, the right part of the head has lost its rounded form and become a diagonal line extending beyond the vertical line, under the left part of the head. The latter form is typical of all later inscriptions such as the Samaria ostraca, the Lachish Letters, &c.

Still more pronounced is the older form of the *zayin*, which consists of two horizontal bars connected by a vertical line. This letter does not occur in the Mesha stele. Our form resembles more or less the *zayin* of the Gezer tablet and differs from the later forms in which the connecting line is oblique, as in the Siloam inscription, and the two horizontal bars end in small hooks turning downwards, or sometimes the median line is missing altogether and is replaced by the hook of the upper horizontal line.

The *heth* also seems like the *heth* on the Mesha stele, where the right vertical line extends downwards beyond the diagonal connecting line.

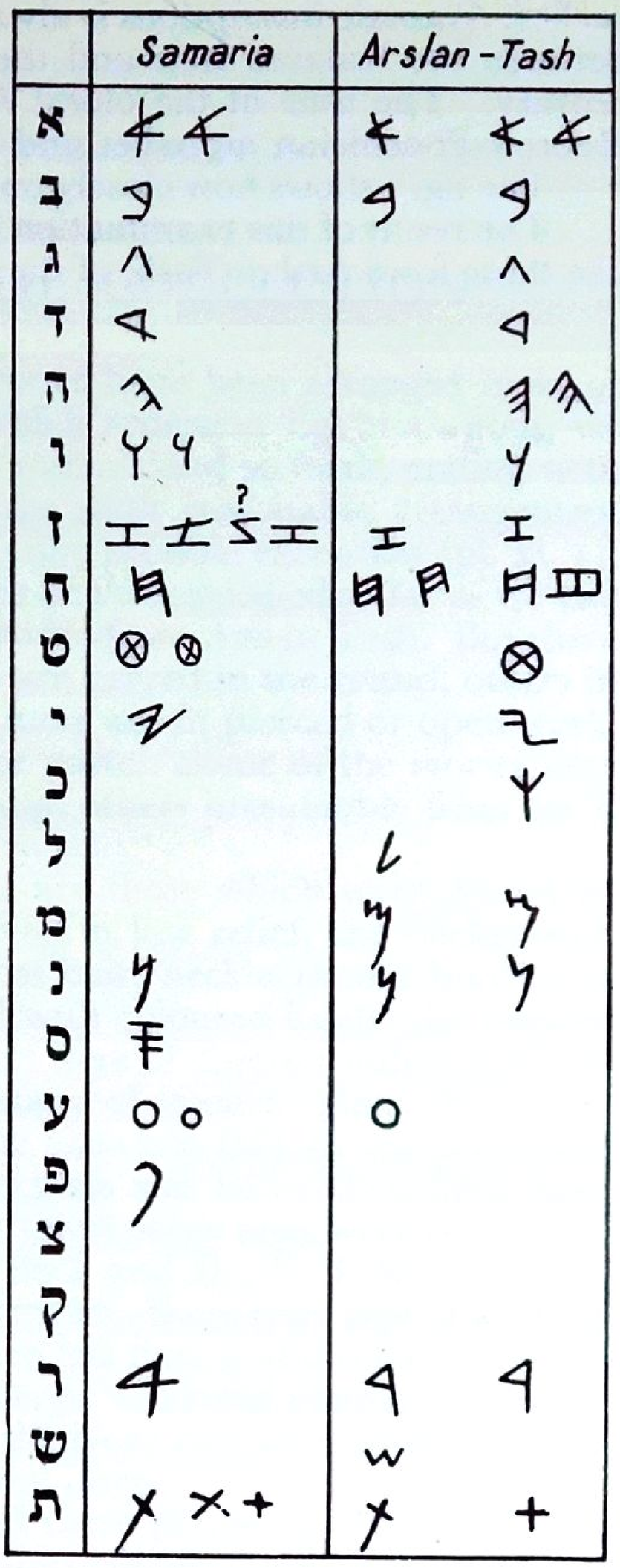


Fig. 1

The *yod* did not change much in the course of time: our form resembles that of the Mesha stele, the Siloam inscription and the Samaria ostraca, but differs from that in the Lachish letters in which the low right line is missing.

The *taw* most resembles the *taw* of the Gezer tablet where the two intersecting lines are unequal in length.

Comparison with the old Aramaic inscriptions shows that our signs resemble the oldest, namely the Kalamu stele which is dated about the middle of the ninth century, and the Hadad stele which is about the first half of the eighth. In these inscriptions the *zayin* consists of two horizontal lines connected by one vertical line. The *aleph* in the

earliest Aramaic inscriptions is always the same in form: there is no difference in its shape between the Kalamu stele and the Panammu which is of the second half of the eighth century. The *waw* in the oldest Aramaic inscriptions is different from the *waw* in the Hebrew-Phoenician alphabet and cannot therefore be used for comparison.

The fig. 1 shows how closely our letters resemble those on the ivories from Arslan Tash.

The result of this examination leads us to the conclusion that the Samaria ivories are, like those from Arslan Tash, of the ninth century and earlier than the Samaria ostraca.

2. THE COMPOSITION OF THE COLLECTION

In the descriptive catalogue which follows, the ivories have been arranged more or less according to subject: we start with the plaques which represent Egyptian gods, we pass from these to the winged genii, the sphinxes, the animals and so forth, ending with those that are purely decorative. This seems to be the most reasonable arrangement because we are dealing with a collection in which, with one possible exception (pl. xi, 1), there are no different periods or centres of production to be distinguished so far as we can see. The same plan was adopted by the editors of the ivories from Arslan Tash. But there are several differences of technique: some of the ivories are carved in the round, others in relief, and of those in relief some are on solid plaques, some are in pierced or open work, and some are decorated with coloured insets of glass or paste. Some of the ivories may come from pieces of furniture, others from wall panelling, others presumably from small caskets or articles of the toilet.

The most spectacular of the ivories from Samaria are those which were decorated with gold leaf and polychrome insets.[1] They are carved in low relief: the background and borders are plain: details such as eyes and locks of hair, necklaces and borders of robes, petals of flowers, were deeply grooved and filled with coloured insets: the cloisons between the insets were coated with gold leaf. The insets were of different substances and colours: two fragments of lapis lazuli were found and many of coloured glass: the deeper troughs often contained a coloured paste over which the glass was laid, in one piece blue glass was laid over a red base, in another a colourless glass was laid over a blue base. Only a few insets were found still in place, but a great many loose ones were collected:[2] the character of the glass is described by Mr. Horace Beck and Dr. P. B. Ritchie in an appendix (p. 57). The ivory was removed with a fine scorper—there is no sign of drilling: and the workmanship was delicate—the cloisons are often less than a millimetre wide and the troughs between them more than two millimetres deep. On some plaques, that with the hieroglyphs for example on pl. xiii, 1, very little of the ivory can have been visible on the surface, so lavish was the use of gold foil and coloured insets.

The subjects of these plaques are all Egyptian, and there can be no doubt that this technique is derived from the cloisonné work in precious metals for which Egypt was famous. It is not common in ivory. Several inlaid plaques, which as we have already said may have come from the same workshop as the Samaria ivories, were found by Layard in the N.W. palace at Nimrud: a few stray examples come from other sites.[3] The

[1] See Frontispiece, 1, 2; pls. i; ii; iii; iv, 1; ix, 2, 3, 4; xiii, 1.

[2] See pl. xxiv and Frontispiece 2.

[3] For fragments from the Bernardini tomb at Palestrina see C. Densmore Curtis in *Memoirs of the American Academy* at Rome, III, 1919, pl. 35, nos. 13, 14, 15. A piece from Koyunjik is published by L. W. King in *J.E.A.*, I, 1914, pl. xxxv. There is a fine plaque in the British Museum, no. 38183, representing Re holding the symbol for millions of years, but nothing is known of its provenance: it may also have come from Syria.

technique is not represented in the Arslan Tash collection, but it must have been familiar, if, as seems probable, the editors of Arslan Tash are right in identifying this class of work with one of the classes mentioned by Adad-narari III in his inventory of spoil from Damascus: two classes are listed, *iḫ-zi* and *tam-le-e*, the former name, derived from *aḫâzu* "*saisir, épouser*" being explained as the name of ivory overlaid with gold leaf, the second, from *tamlû* "*remplissage*", as that of ivory incrusted with precious stones.[1] The latter technique is suggested also by the "ivory work overlaid with sapphire" which occurs in the Song of Songs (vi, 14).

How were these polychrome plaques employed? There is very little evidence. Most of those from Samaria come from narrow bands of decoration only five or six cm. high: those in the same style from Nimrud are a little larger: in both collections there are one or two medallion-shaped pieces:[2] all except the medallions have plain narrow borders which apparently were meant to be hidden under the overlap of some frame; none of them have the projecting tenons which are common on other classes of ivories: Layard (p. 19) notes that the Horus panel "was glued and not mortised to the wood". Both the medallions and the long pieces might well come from a royal throne and, if such a throne was a fixture in the room, this may be the reason for their survival after the smaller, more portable objects had all been carried off.

Another class of ivories with polychrome insets, to which the Assyrian name *tam-le-e* might be equally well applied, is one which is not, to the best of our knowledge, represented on any other site. On these ivories[3] the whole of the subject is shown by means of coloured insets which were moulded to give the necessary relief: the ivory round the insets is smooth, it served merely as a background and matrix, whereas in the preceding class the subject was carved in relief on the ivory, and the insets were used only to pick out significant details. The ivory of the plaques in this second technique is relatively thicker but the plaques are on a small scale: there is nothing to show how they were kept in position: some of them look as if they came from caskets of the pyxis type: most of them were found close together. All but a few of the tinier insets have fallen out and only the outline of the matrix is left to indicate the subject. The subjects, however, are mostly clear—Pharaoh triumphing over a fallen foe, winged figures of the Isis type, sphinxes, lotus and palmette chains: they are all Egyptian in origin and it is from Egypt probably that this technique was learnt: in Egypt moulded insets were frequently inlaid in metal, stone and wood, if not in ivory. Several of the moulded insets which were found loose in the debris, such as the leg on the Frontispiece and the lock of hair on pl. xxiv, 9, came presumably from plaques in this class.

It is only a small proportion of the ivories which were decorated with polychrome insets. Much more of the ivory which was found came from small plaques and ornamental borders carved in low relief. A great many of the subjects on the plaques were repeated again and again, the winged figures, for example, and the sphinxes: on other plaques there were processions of animals.[4] These subjects are common in the art of the period on bowls of metal and pottery, but there is no certain indication how particular ivory plaques were used. The "Woman at the window"[5] is another popular subject of the same class which was probably repeated at intervals either on the walls or furniture of the

[1] *A.T.*, p. 139.

[2] The fragments from the Bernardini tomb also come from a medallion in pierced work like the more fragmentary one from Nimrud.

[3] See pls. xiv, xv. [4] See pl. iv, 2, 3, 4: pl. vii, 5, 6, 7: pl. x, 8. [5] See pl. xiii, 2.

house. The larger plaques had tenons, the smaller ones plain borders like the inlaid reliefs.

The long decorative borders[1] similarly may have been employed either on walls or furniture: they were as a rule scored heavily across the back, perhaps to key them into some bituminous bed. Some of the pieces were covered with gold foil and fall therefore into the *ih-zi* class mentioned above. On one border which was decorated with eight-petalled daisies the petals were polished and stained a pale yellow, the ground round them being left rough:[2] a lotus chain border at Arslan Tash was treated in the same way.

The ivories in pierced or open relief form a larger class numerically. This is partly due to the great popularity of the palms which were executed in this technique: fragments of more than seventy were found.[3] We imagine that they were arranged in a series of panels or metopes on the walls (see fig. 7 on p. 38)—they are too numerous and some of them are too large, we think, to have been used on furniture: the tenons by which they were fastened to the wainscotting, if it was to the wainscotting, have been preserved on a great many, and it is on the backs of palms that the majority of the guiding letters have been found. The other subjects which are represented in this technique are like those which were carved in relief on solid plaques—sphinxes, animals, human figures and so forth.[4] Pierced ivories were more fragile than solid plaques, and it may have been for this reason that the background was more frequently filled with plant and tree motives which would increase their strength. Tenons are commonly found on these plaques also. There were traces of gold foil too which would bring them into the *ih-zi* class. A large number of the ivories at Arslan Tash were carved in pierced relief.

The smallest class of all is one that is the largest in many collections—ivories carved in the round. The only important example, however, is a very fine piece of work—two lions crouching and open-mouthed.[5] The fragment of a third lion was found and it is probable that they came from the steps or arms of a throne like that of Solomon: they may therefore have been left at Samaria because the throne was a fixture. The eyes of the lions were inlaid and there were remains of red inside the jaws: they would not be out of place on the same object as the finer plaques with polychrome insets. Another piece in the round, a uraeus,[6] may have come from above the lintel over the door. One of the fragments found by the Harvard Expedition served probably as the handle of a dagger, but the absence of the small objects which are so common elsewhere, mirror-handles, combs, seals and the like, and of the solid ivory legs of chairs and stools, suggests the hand of the spoiler.

[1] See pl. xx. [2] A fragment is shown on pl. xxi, 6. [3] See pls. xviii, xix, xx.
[4] See pls. v, vi, x, xi. [5] Pl. ix, 1. [6] Pl. xxii, 2.

3. DESCRIPTION OF THE PLATES[1]

PLATE I. THE INFANT HORUS

The ivories on this plate and some of those which follow (in particular pls. ii, iii and xiii) are those most closely related both in technique and subject with the ivories from the N.W. palace at Tell Nimrud. The subjects are derived from Egypt and in the descriptions which follow we have adopted throughout for convenience the familiar Egyptian nomenclature, though we do not wish to imply that the subjects meant the same to the Syrians and the Egyptians.

1. A medallion in relief. Two incurved volutes with pendant drops frame a figure of the infant Horus. He wears an *atef* crown and sits upon a lotus. The crown has spreading rams's horns: in the centre a bundle of reeds with a disk above, on either side a plume and a crowned uraeus. Horus wears a necklace and two bracelets on each arm: he holds a flail in the right hand and raises the forefinger of the left hand to his lips: the other three fingers of the left hand dangle below the thumb. On either side of the lotus flower is a leaf of the blue water lily, *Nymphaea caerulea*.

This plaque was richly decorated with coloured insets and gold foil. A painting made by Mr. Charuby of Jerusalem to reproduce the original appearance is published on the Frontispiece to this volume. Gold foil and a blue glass inset were found in place on the disk of one of the uraei in the crown, gold foil and blue insets in the bracelets on the right arm, yellowish paste in the centre petal of the lotus, blue glass in the four smaller petals, gold leaf on the outline of the leaves and green paste in the middle. The blue of the side-lock was suggested by a blue inset of the right shape but not of the right size which was found in the debris near by. According to Maspero[2] blue wigs have been found in Abyssinia.

A medallion of the same shape was found by Layard in the N.W. palace at Nimrud.[3] It represents a sacred tree with volute branches which curve round in the same way as the volutes round the child god: in the Nimrud plaque winged griffins are climbing in the branches. This plaque too was inlaid with coloured insets in the wings of the animals and the foliage of the tree. These plaques may have formed centre-pieces on the backs of thrones (see pp. 10, 24).

2. Plaque in relief. The left half of a scene on which the infant Horus was represented seated on a lotus between two kneeling figures. The kneeling figure which has survived is a falcon-headed god who may be called Re: he wears a short skirt, solar disk and necklace.

[1] All the ivories shown on the plates were found in Qc unless otherwise stated.

[2] *The Dawn of Civilization*, p. 54, note 6.

[3] Layard, pl. 90, no. 21; Poulsen, p. 49.

The right arm is raised in adoration, the left is offering a figure of Maat holding a lotus sceptre and sitting on a *neb* bowl: the hands have been transposed as is often the case on Egyptian reliefs. Only half of the infant Horus remains: he had a disk on the head, a straight side-lock, necklace and flail in the right hand. The lotus and leaves beneath were like those in No. 1. There are traces of inlay in all the deeply grooved parts.

The ribbing of the material of the skirt, which gives it the appearance of corduroy, was meant to represent crimped or pleated linen. The texture of the garments worn by several of the figures at Nimrud is shown in the same way,[1] but this convention was not in vogue at Arslan Tash: at Samaria it recurs on pl. ii, 2, and xii, 13 and 15. The skirt was originally a loin cloth.

The absence of a border along the bottom suggests that this scene may have formed the upper register of a larger composition.

The representation may be compared with that on a Sardinian scarab of a kneeling hawk-headed god making the *maat* offering,[2] and with one on a stele of the tenth century at Cleveland of the infant Horus on the lotus with a *maat* figure on each side.[3]

3. Fragments of a plaque or medallion. The infant Horus wearing a necklace and holding a flail in the right hand: the left arm, the forepart of the leg and the lotus have disappeared. It is uncertain what the raised margin on the left represents: it may be the stem of a flower to which the blue inset above belongs, or it may be the inner rim of a volute like those on No. 1. The side-lock, which is different from either of those preceding, and the collar and flail were inlaid.

The figure of the infant Horus seated on a lotus was very popular throughout the last millennium B.C., especially in the Syrian area during the first half of this period. The figure is represented on ivories from Tell Nimrud and Arslan Tash, on Hebrew seals and Phoenician paterae. There is more than one type. On an Egyptian work of approximately the same period, namely the tenth century bracelets of Namlot, which are in the British Museum, the infant god is a slender-limbed child who wears a solar disk and the uraeus and carries a crook: he has no other ornaments and lifts one hand to the lips. At Arslan Tash[4] he is also comparatively slender: he wears no crown and grasps the flail in both hands. At Tell Nimrud,[5] on the other hand, the plump Samaria type is exactly reproduced: he carries an inlaid flail like that on No. 1: the necklace is of the same pattern, the forefinger only of the left hand touches the lips and the other three fingers dangle down in the same way: the belly is represented by the same formula, and the lotus is of the same type.

PLATE II, ROBED FIGURE (OSIRIS?); HAH FIGURES.

1. A headless figure in two fragments. The remains of a frame on the right and the direction of the feet suggest that it formed part of a larger composition.

The figure wears a necklace of the usual Egyptian type: the two long grooves in the middle of this were filled with insets to represent a beard. A flail was held in the right

[1] Layard, 88, nos. 1, 6, 7; Barnett, xxiii, 4.
[2] Rawlinson, *Hist. of Phoenicia*, 1889, p. 239.
[3] C. R. Williams in *Bull. of the Cleveland Museum of Art*, Oct.–Nov., 1918, pp. 61, 67–9.
[4] *A. T.*, pls. xix–xxiv.
[5] Layard, 89, 9.

hand, an *ankh* in the left, and on the right wrist was a bracelet with a short clasp or tassel. The robes are rather difficult to interpret; they clearly derive from Syrian rather than Egyptian originals. The folds fall vertically on the right side of the figure and horizontally or nearly so on the left: they evidently represent two garments, the horizontal folds being those of a shawl thrown over the left shoulder. Both garments had ornamented borders indicated by alternate rectangles of ivory and insets. In addition to the marginal borders the lower half of the shawl (below the fracture) had transverse bands ornamented in the same style. The appendage hanging below the right elbow which is also ornamented may be meant for the end of the shawl. Three dark blue insets were found still in place in the border, traces of red in some of the other troughs and fragments of gold near the top right hand corner.

The costume of this figure should be compared with that of the Syrian tribute-bearers in the tomb of Sebek-hotpe at Thebes (1420–1411 B.C.).[1] These figures also wear bracelets with short tassels of the same type and they have two garments both decorated with borders. The undergarment has borders down the middle, along the bottom and under the arms, like our figures, and a border or a necklace round the neck, but neither of the side borders represented on the ivory. The second garment is a shawl wound round the body from the waist downwards: this shawl has three or four bands of ornamentation across it which may be a parallel to the transverse bands on the lower half of our shawl, though they are explained in the text as the edging of, I take it, successive folds. The shawl worn by the Syrian captives on another painting[2] is ornamented with an all-over pattern of daisies: the edges were not the only part decorated. Figures wearing two robes with folds and borders like those on the ivory appear also on some unpublished faience plaques from the palace of Ramses III at Tell el Yahudi (B.M. 12301).

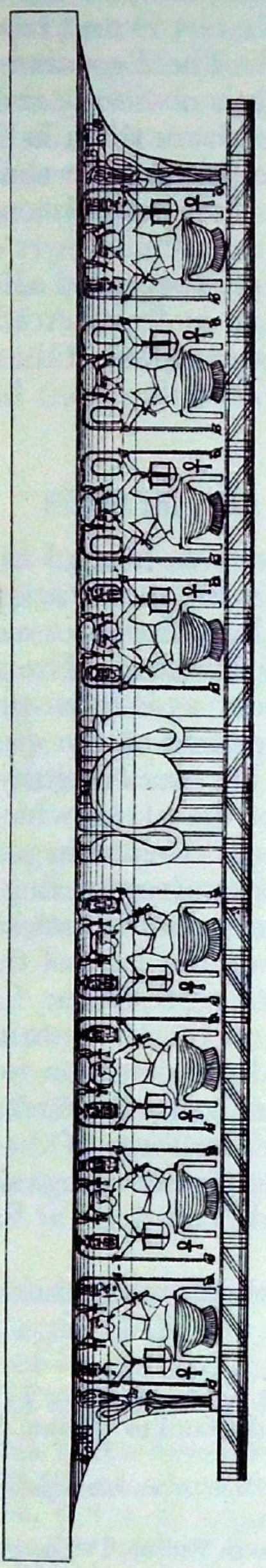
The shallow channelling of the surface of the robes on our ivory recalls the conventional representation of linen on the papyri:[3] the robes of the figures on either side of the cartouche in the ivory in Layard's collection are treated in the same way.[4]

The identification with Osiris is suggested by the flail and *ankh*, but it is very doubtful.

2. Plaque from a series of Hah figures. The god Hah is represented in a squatting position, holding in each hand a palm-branch with an *ankh* sign hanging from it. The figure wears a crimped or pleated garment like that on pl. i, 2, in shape and treatment (compare also pl. xii, 13 and 15): a fillet with long streamers round the head, a broad necklace, a baldric and a belt. The right elbow rested on an object we cannot identify: it has been suggested that it was a *sa*. To the right is part of the right arm of a second Hah figure resting on a similar object and also holding a palm-branch. Below is a fragment of the frame: above is a border of Phoenician palmettes which are interrupted by a disk over the head of the figure. The subject was evidently continued on one or more similar plaques and a small fragment of one such was found near by (reg. No. 1770 f). The plaque had been inlaid, but no traces of insets remained.

There are no representations of the god Hah in the collections from Nimrud and Arslan Tash,[5] but the figure was popular in Egypt: the god impersonated "millions" or

[1] See the reproduction in colours by N. M. Davies—*Ancient Egyptian Paintings*, 1936, pl. xlii.
[2] Idem, pl. lx.
[3] E.g. Budge, *Book of the Dead*, Hunefer, 4.
[4] Layard, 89, 10 and 11: compare also xii, 16, below.
[5] Note, however, the ivory in the British Museum mentioned on p. 9 which may be Syrian.



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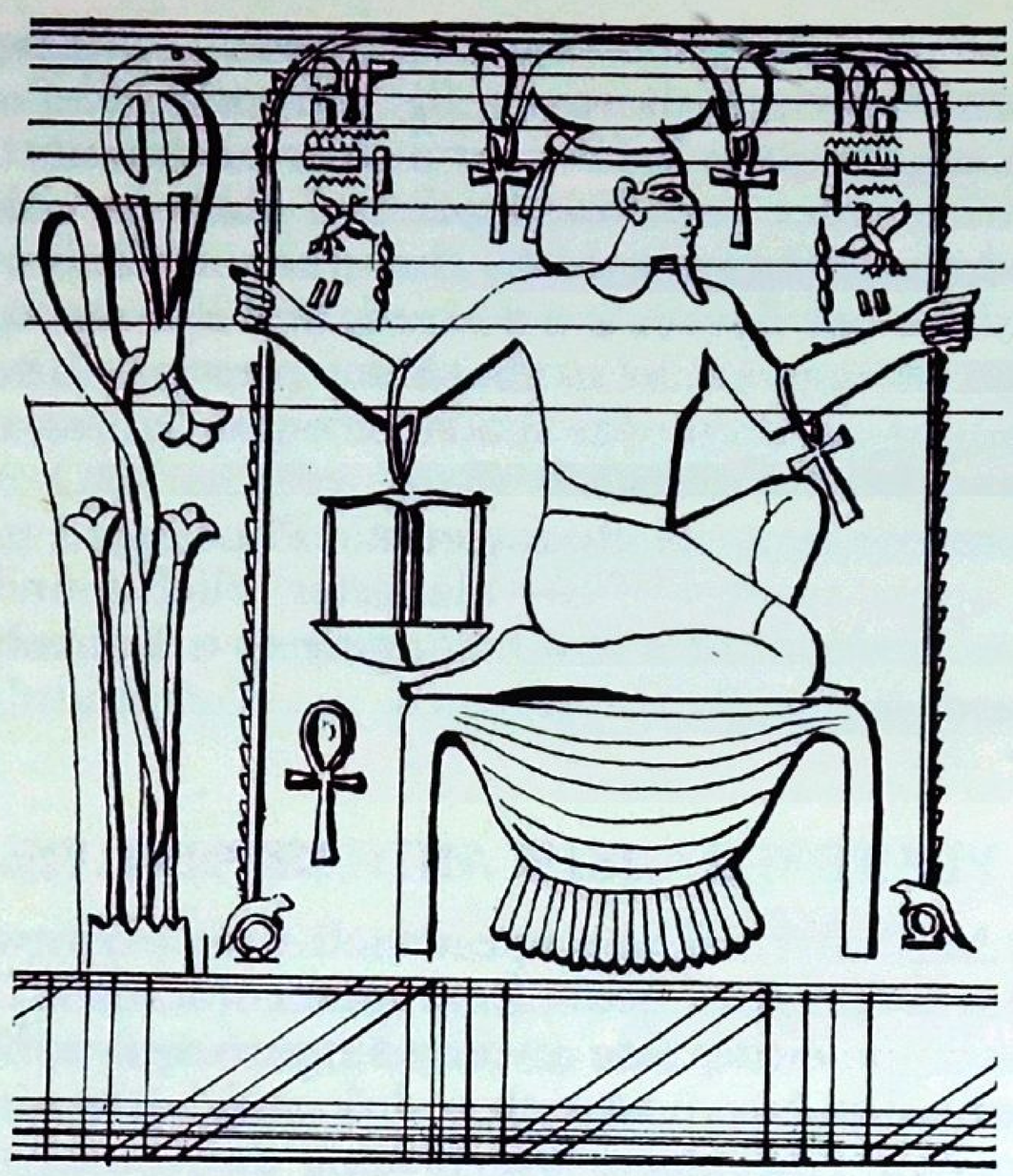

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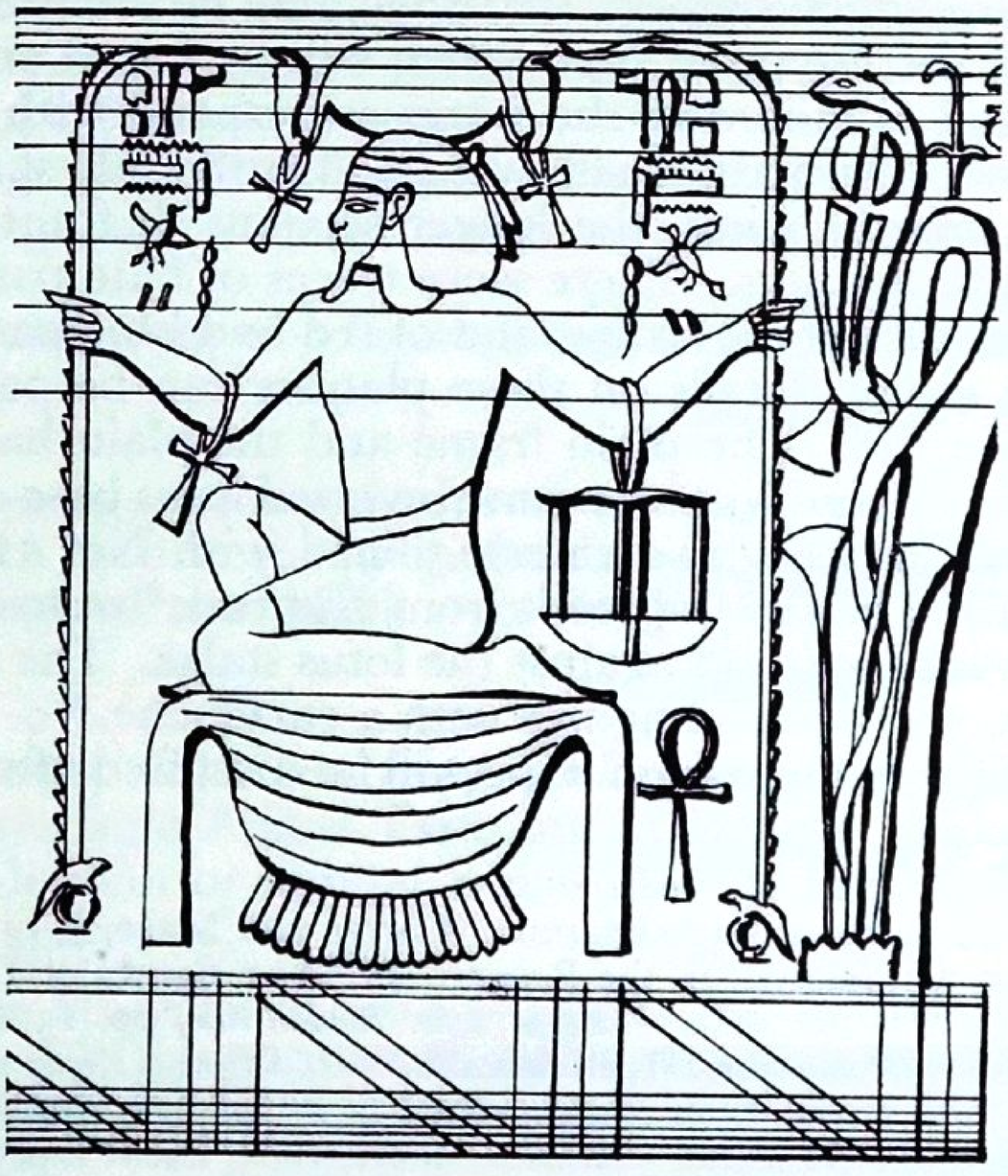

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Fig. 2

"infinite time" and the palm-branches "years". The figure is generally single,[1] but a close parallel to our subject is shown on fig. 2 from a relief of the 21st dynasty in the temple of Khons at Karnak: the relief is over a door on the north side of court D and represents a large disk with uraei and four figures of Hah on either side.[2] The Egyptian figure is bearded and the *ankhs* are held by the uraei on the crown, but it is obviously the original type from which our figures are derived, and it is not far removed from them in date. Dr. Siegfried Schott suggests to us that the figure may have been repeated eight times in this case simply because there was space for eight figures, or it may be a reminiscence of the four or eight primeval deities.[3]

The palmette is of the characteristic Phoenician type: it occurs repeated all over the field in the upper register of two alabaster reliefs found by Renan at Ruad-Aradus,[4] and it is the sole ornament of a seal belonging to a Yahveh worshipper called Hananyahau.[5] Petrie[6] regards it as a lily transformed.

PLATE III. ISIS AND NEPHTHYS: EYES OF HORUS

1. Isis and Nephthys. The scene which runs over two plaques was framed by a plain border and it is complete apart from minor fractures. The *djed* symbol of Osiris stands in the middle and on either side a winged figure squats, holding a lotus flower in each hand. The *djed* symbol is crowned with a disk and has an inverted lotus base. The squatting figures wear heavy necklaces which hang down over the shoulder as is often the case in Egyptian art. They are crowned with disks and it is the presence of the *djed* symbol between them which suggests that they may be identified with Isis and Nephthys. Their wings are of the Egyptian type which will be found on many of the plates which follow: the three main divisions in the wings correspond with three real divisions in nature, the section close to the body which was filled with scale-shaped insets corresponding with the coverts on a bird's wing, the longer sections in front with the primary and secondary quills or flight feathers. There were traces of blue paste between the bars of the *djed*, of gold on the scales of the wings, and of red and blue paste in the long feathers.

All the minor details on these plaques can be paralleled on ivories from the N.W. palace at Nimrud. The plain frame and the plain background are common to Nimrud and Samaria. A *djed* with the same inverted lotus base occurs on an unpublished fragment from Nimrud which was formerly joined with No. 118119.[7] The form of the wings is like that on the Horus fragment from Nimrud:[8] so too is the helplessly inorganic way in which the hands are laid against the lotus stalks. The unfilleted head-dress at Samaria is like those on the Nimrud figures with a cartouche.[9]

The origin of the winged type will be discussed after the description of other examples on pl. iv.

[1] So on the chair of Tutankhamun (Carter and Mace, I, pl. lxi), on a figure of Sethos I (N. M. Davies, *op. cit.*, lxxxvi), in the Roman period on figures of Tiberius and Claudius (Milne, *Hist. of Egypt under Roman rule*, pp. 13, 21).

[2] See Lepsius, *Denkmaeler*, III, pl. 249, a, b. [3] Cf. Sethe, *Amun und die Acht Urgötter von Hermopolis*, p. 75.

[4] *Mission de Phénicie*, Text p. 25, pl. iv : Perrot III, p. 129.

[5] Clermont-Ganneau, *Journal Asiatique*, 1883, no. 1: reproduced also in Perrot, IV, p. 439.

[6] *Decorative Patterns*, XII.

[7] An inverted lotus occurs also as the base of a censor on three plaques in *A. T.*—pl. xxxii, 40–42.

[8] Barnett, fig. 1. [9] Layard, 89.

2. The Eyes of Horus: 2a, Reconstruction. The plaque to which the fragments assembled in 2 belong measured originally about 21 cm. long: the greatest length surviving is about 17 cm. A fragment of the frame remains at the right end. In the centre a bunch of papyrus rises out of a bowl on the top of which was the water sign: on either side are two eyes of Horus, each eye resting on a disked uraeus with the body and wing of the vulture Mut behind. There were evidently insets in the eyebrows, the eyes, the wings and body of the vulture, the disk and body of the uraeus, the flowers of the papyrus and the bowl, but in the shattered fragments no trace remained. The fragments of a second amulet of the same type which was found in Qk (reg. No. 3018) showed that the pupil was not indicated in ivory as the restoration suggests, but it may have been shown by an inset in the inlay.[1]

Note. The fragments were difficult to assemble; they are a little askew in the photograph and the smaller piece is slightly misplaced.

PLATE IV. WINGED FIGURES IN HUMAN FORM.

The five poor fragments which are published on this plate come from standing figures with wings outstretched like those on the squatting figures on pl. iii. Fragments of two other figures of the same type will be found on pl. xiv, 2, and pl. xv, 7. Two series of similar figures in a much better state of preservation were found at Arslan Tash, and on the analogy of these and of other figures from elsewhere it is probable that each of our figures comes from a composition in which two winged beings stood like guardian angels on either side of some central object: of the latter only the scantiest traces remain.

1, 1a. Fragments of a figure facing right, and suggested reconstruction. The fragments show portions of each arm and wing, part of one leg and a bordered garment. The wings and the border of the garment were inlaid.

2. A small part of the raised arm and wing of a figure facing left and the outline of the lowered arm.

3. A small fragment of the upper wing, the lower arm and wing, the two legs and the lower part of a garment with a plain border: the palmette-shaped object under the lower wing is probably the offshoot of a sacred tree which stood in the middle of the composition.[2]

3a. A reconstruction of the figure on 3. The double crown however is very doubtful: it occurs on some of the parallel figures from Arslan Tash, but at Samaria the only certain examples of its use are on figures human or animal which may be regarded as impersonations of a Pharaoh or heroised king.

[1] Parallels to this form may be seen in Blanchard, *Handbook of Egyptian Gods and Mummy Amulets*, 1909, XLVI, no. 265; Petrie, *Amulets*, XXIV, 141a; Reisner, *Amulets*, Cat. Gen. Cairo Museum, pl. V, no. 5, 774, 5, 797; a scarab of dyn. xxii found in tomb 314 at Meydum by Mr. Rowe to whom we are indebted for this reference; and two scarabs in the British Museum mentioned by Budge, *The Mummy*, 1925, p. 317. All these parallels, I think, come roughly from the first quarter of the last millennium B.C.

[2] See *A. T.* xxiv, 15, 16, xxv, 17–19.

4. Found in Qn. Part of the arm and wing of a figure facing right. In scale and technique it is more like the Arslan Tash figures than any of the above: the feathers on the wings are outlined by ribs like the cloisons on an inlaid piece but the ivory between the ribs was not cut away: wings are treated in the same way at Arslan Tash.

5. A part of the upper wing and a hand grasping a flower: to the right, part of the frame and part of what may be the head-dress: the curved object touching the end of the wing to left looks like the curve of the volute of a sacred tree.

This figure, like nos. 2 and 3, faces left: they were all carved in delicate relief and not inlaid.

At Tell Nimrud a winged figure holding a flower stands in front of the child Horus[1] but the panel is too fragmentary to permit any identification of the figure. At Arslan Tash there are two parallel series. On the longer series[2] the child Horus is sitting on a flower between two figures which appear to be male: they wear Egyptian crowns and robes of the Syrian pattern which leave one leg bare, and they carry flowers in the hands. On the second series[3] the figures stand on either side of a sacred tree: they have pronounced breasts, wear Egyptian crowns and long straight robes which cover both legs, and carry similar flowers. The Samaria figures, so far as we can judge in their fragmentary condition, present three variations: on pl. iv, 3 it was a figure wearing the male costume which stood in front of the sacred tree; on pl. xiv, 2 the figure has both legs bare and there is no trace of any central object in the comparatively large space in front: on pl. xv, 8 the central object was a papyrus flower. The cherubim on the two ends of the mercy seat in the ark were evidently of the same type—"the cherubims shall stretch forth their wings on high, covering the mercy seat with their wings, and their faces shall look to one another: toward the mercy seat shall the faces of the cherubims be".[4] Similar figures reappear frequently in later Phoenician art, e.g. on the Amathus bowl[5] where they are definitely crowned with the emblems of Isis and Nephthys, the former holding plumes, the latter flowers.

The forms of winged figures on the ivories, whether squatting as on pl. iii, or standing as in the other examples, are derived from Egyptian models. Tutelary goddesses of this type stand at the four corners of the shrine of Tutankhamun and two of them, Isis and Nephthys, are represented with crossed wings on the gold coffin:[6] a similar figure of Isis on the tomb of Ramses III is republished by the editors of *Arslan Tash*.[7] The figure in our text (fig. 3) comes again from the temple of Khons at Karnak: it represents two pairs of winged figures, one squatting, the other standing, which were part of the ornamentation on one side of a shrine inside the ritual bark of Amun.[8] The figures here, Dr. Schott tells me, are images of the Goddess of Truth (Maat). The conception of the winged goddess may be traced back, according to Dr. Schott, to anthropomorphic representations of the Sky-goddess Nut, who was originally a bird.

[1] Barnett, fig. 1. [2] *A.T.*, pls. xix–xxiv. [3] *A.T.*, pls. xxiv, xxv.
[4] Exodus, xxv, 20. [5] Myres in *J.H.S.*, 1933, pl. 1. [6] Carter and Mace, II, pls. lix and lxxii.
[7] *A.T.*, p. 95.
[8] See Lepsius, *Denkmäler*, Abt. III, pl. 244. A similar representation of the 19th dynasty occurs at Abu Simbel, Lepsius, III, pl. 189.

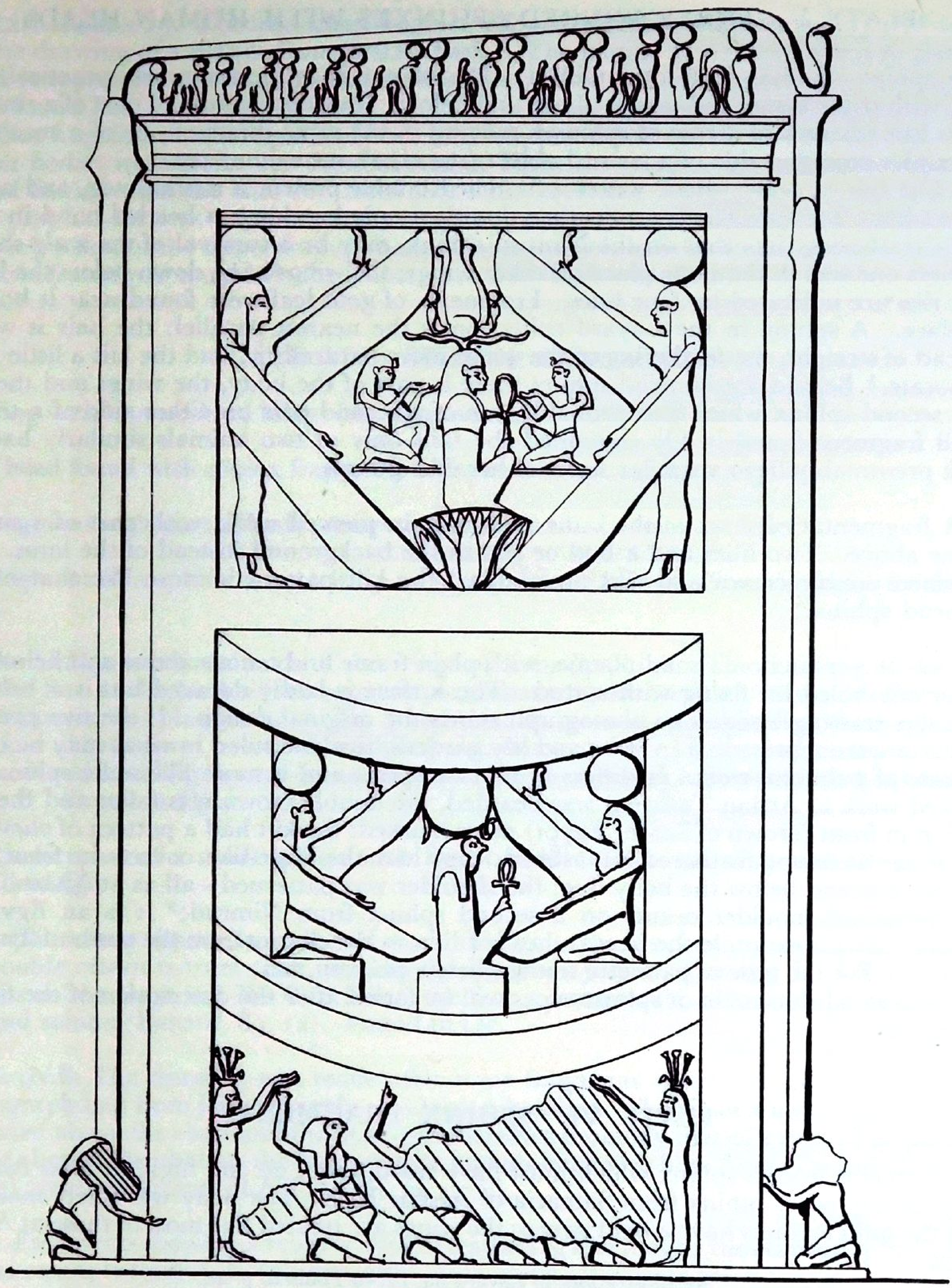


Fig. 3

PLATE V. THREE WINGED SPHINXES WITH HUMAN HEADS

1. A sphinx standing in a lotus thicket. The plaque is in pierced work, practically intact, with triple frame and tenons above and below. It evidently formed part of a running series but whether of a row of sphinxes moving in the same direction, or of a succession of couples on either side of a central object (see vi, 2), we cannot say.

The sphinx is beardless: wears a flattened double crown, a curling wig, and a patterned kilt. The two wings are feathered with simple hatching: a beaded band in front of the feathering, like that on the Nimrud sphinx, may be a survival of the scale-shaped feathers one sees in the same place on other wings: the wings hang down below the body. The ribs are indicated by four lines. Fragments of gold leaf were found near it but not in place. A sphinx in the Layard collection is the nearest parallel: the hair is waved instead of straight, the feathering of the wings more naturalistic, and the kilt a little more elaborate.[1] Behind the Nimrud sphinx there is part of the body, the wings and the tail, of a second sphinx which was probably one of a second pair on either side of a tree: a small fragment found in Qc contained the tails only of two animals similarly back to back presumably from a similar series of heraldic groups.

2. A fragmentary sphinx of the same type, also in pierced work, with part of a similar frame above. Two lilies and a bud or leaf in the background instead of the lotus. The flattened double crown and ribs are similar: the kilt pattern is more like that on the Nimrud sphinx.

3. Part of a sphinx on a solid plaque, with plain frame and tenons above and below, the lower one holed for fixing with a stud. The surface is badly decayed but it is believed that the drawing beside our photograph shows the original design. If the two previous sphinxes were represented in lotus and lily gardens, this one stood in what may be called a glade of palmette trees. It differs in other respects and is more like some sphinxes in pierced work at Arslan Tash:[2] it was bearded, the double crown was taller and the projection in front (crown of Lower Egypt) more marked: the kilt had a pattern of chevrons: the wings were not feathered but ribbed, they had the scale-like coverts in front, and did not descend below the body line: the shoulder was patterned—all as at Arslan Tash; the patterned shoulder occurs on a second sphinx from Nimrud;[3] it is an Egyptian feature—see for example the human-headed lion in the chariot from the tomb of Tutankhamun.[4] For the type of palmette tree see below pls. xvii, xxi.

A general discussion of sphinx types will be found after the description of the figures on pl. viii.

PLATE VI. SPHINX FRAGMENTS.

1. Fragments from a sphinx which must have stood about 20 cm. high, at least twice as large as any other sphinx from Samaria or Arslan Tash. The body was finely modelled and the quill feathers have a bold sweep: the wings are treated like most of those at Arslan Tash.

[1] See illustrations in Layard 89, 12, or Poulsen, p. 40.

[2] *A.T.*, pls. xxvii–xxxi. [3] Layard, 89, 13. [4] Carter and Mace, II, pl. xx.

2. Scale about 2 : 5. Thirteen small fragments found together and here superposed on an outline drawing of a plaque from Arslan Tash.[1] The plaque at Arslan Tash is in pierced work: it represents two ram-headed sphinxes on either side of a sacred tree: the figures when found had traces of gold leaf.[2]

Our fragments include parts of both ram-heads and parts of the double crowns. The sphinx bodies were svelte like those at Arslan Tash: the wings were treated in the same ribbed fashion, and the kilts decorated like those at Arslan Tash. The upper left volute is all that has survived of the sacred tree on our pieces: it is like that at Arslan Tash. A minute portion of the upper frame which adjoins the volute from Samaria shows that the Samaria frame was moulded: the frame at Arslan Tash was plain.

PLATE VII. SPHINX FRAGMENTS.

1. Wing with blue and red inlay: (see Appendix 2).

2. A head found with sphinx fragments and possibly belonging to a sphinx.

3. Fragment with part of body, wings and end of tail. In fine low relief.

4. Fragment of a sphinx wing with part of a palmette below. Note the holes for fixing studs.

5. The hindquarters and ends of the wings of a small sphinx. The S. shape of the tail and the line of the back which suggests a rampant figure are both unique in Samaria. The frames in this plaque and on No. 7 have been preserved on three sides: these sphinxes therefore did not form halves of heraldic pairs, but may have filled small metopes: kilted sphinxes and kneeling figures occur alternately in metopes on a Nimrud bowl. (Layard, II, 59 B.) Found in Qk.

6. The forepart of a small sphinx with Egyptian double crown, wig, and kilt in folds. Found in Qk.

7. A sphinx very similar in scale and workmanship to the last, but in better preservation: the double crown is truer than usual to the Egyptian *pshent*. The wig is plain, but the pattern on the chest (see No. 8) is fuller: the face is a miniature edition of the face on the Nimrud sphinx (Layard, 89, 12). Found in Qc.

8a, 8. (N.B. The drawing was made after some fragments which are not shown in the photograph had been joined together.) Originally inlaid. The tip of a horn appears to be indicated above the chest and the head was therefore probably that of a ram. The pattern on the chest is like that on the fragmentary human-headed sphinx from Nimrud (Layard, 89, 13) and the sphinxes at A.T. (*A.T.*, pl. xxvii).

9, 10. Fragments showing a realistic type of feathering like that on the Nimrud sphinx, and on one example from A.T. (pl. xxx, 28).

[1] *A.T.*, pl. xxvii. [2] *A.T.*, p. 102.

11. Possibly feathering, or may come from a bushy tail: stud holes.

12. Fragment showing kilt with chevron pattern; part of right foreleg and line of left: the stem of a plant in front, perhaps therefore adoring a tree as on v.3.

13. The upper part of a double crown and a sacred tree formerly decorated with insets. The chevron pattern on the crown is like that on some A.T. crowns of winged human figures: flowers like that in the centre of the tree occur on the Nimrud medallion with griffins. Found in Qk.

14. Scale 6 : 5. Fragment of a kilt from a sphinx with chevron pattern formerly inlaid.

A great many other fragments which belong almost certainly to figures of sphinxes were found. One of these, an inlaid piece, had the letter *vav* on the back (pl. xxv, 18.) One of them came from Qn.

PLATE VIII. BATTLING ANIMALS.

Scenes of battling animals and of men or heroes slaying monsters are represented on some of the works which belong to our circle:[1] the fragments shown on this plate appear to come from animal combats, but it is difficult to make much out of them.

1. Battling lion and griffin (?). Another fragment from this plaque was identified after the photograph was taken: it came from the frame at the bottom and brought the total length to 17 cm. but added nothing material to the picture. On the left is the forepart and forelegs of a lion holding in its jaws the hindleg of a sphinx or griffin. The leaflike object right of the griffin's paw is probably the end of a tail like that on the sphinx from Nimrud. The second hind paw of the griffin rests on the hind part of the wing: all the paws are more clawlike than usual as if unsheathed for the fight: the wing is like those of the sphinx on pl. v, 1.

2, 3, 4, 5. Fragments from the same plaque as the above or from one very like it: all were found close together. The subjects of 2 and 3 are parts of lions, of 5 the leg of a bull: what 4 represents we cannot say: does it represent a piece of harness?

Many other minute fragments were found in the same area.

Fabulous creatures with the body of an animal and the wings of a bird are one of the favourite subjects of the period. Winged sphinxes and griffins occur on the collections of ivories which have been found recently at Megiddo and at some unknown site in North Syria, both dating apparently from the thirteenth century: they occur also on the patera from Tell Basta which is assigned to the Ramessid period. The figures from Nimrud, Samaria and Arslan Tash (to which also those from Byblos and from Khorsabad may be added) occupy an intermediate position between the earlier types and those on the so-called Phoenician bowls which have been found in so many parts of the Mediterranean.

[1] Barnett, pl. xxvi and fig. 7. Montet, pl. cxlii, p. 220 f.: a fragment from Byblos representing a bull being attacked by a griffin and a lion, which Montet compares with those from Nimrud.

The examples from Samaria are shown on plates v, vi, vii, viii, x, 3, 4, 5 (perhaps) and xiv. Many are preserved only in minute fragments but, so far as we can judge, the range of variation is narrow.

The human-headed, the ram-headed and the bird-headed forms were all represented at Samaria. Those which have survived are in profile as at Nimrud: at Arslan Tash some are shown in full face. All, like the Egyptian sphinxes, have the bodies and paws of a lion. The bodies are svelte and never covered above or below with shaggy hair like many of the Assyrian animals. The ribs were indicated by four parallel grooves. The tail usually curls up over the body and ends in a blob where it is not hidden by the wings: in one case (vii, 5) it curls up in an S. shape as on the Assyrianizing sphinx on a bowl from Nimrud[1] and the griffins on the bowl from Curium.[2]

The wings are never "displayed" as they are on the Nimrud bowl and on the sphinxes shown in full face at Arslan Tash:[3] consequently all that is visible of the second wing is the upper line. The tips curve slightly upwards as a rule, but there is no real approximation to the sickle shape which was popular at a later period: in two cases (v, 1 and 2) the ends hang down below the body as on the Nimrud ivory. The treatment of the feathering varies. The three divisions which were described on page 16 were generally marked. In the inlaid classes each feather was indicated by a separate inset and adjacent insets appear to have varied in colour. On the plaques in plain relief: in one case (vii. 10) the feathers were shown by feathering on either side of central ribs (so too at Nimrud and at Arslan Tash)[4]: in others the feathers were outlined and the spaces between the outlines simply hatched (v, 1 and 2) or left blank (vi, 1 and 2, vii, 1—so also commonly at A.T.) or they were shown in relief (vii, 5). A curious feature on v, 1, is the line of beading which takes the place of the scale-shaped coverts on the shoulder: a similar line appears on the ivory sphinx from Tell Nimrud and the convention seems to have been derived from an earlier Syrian convention which can be traced on the wings of various creatures on the Megiddo ivories.[5]

A Pharaonic "kilt" and an Egyptian double crown are worn by all the human and ram-headed sphinxes from Samaria: the variations are slight and confined to small details or matters of technique.

There are four different types of kilt. That worn by the sphinxes on plate v, 1 and 2, is decorated with grooves and lines of beading like the kilt on the Nimrud sphinx. A commoner type (pls. v. 3: vi, vii, xiv) has rows of chevrons like most of those at Arslan Tash, a pattern which was popular in Egypt from the 18th dynasty onwards.[6] The very small sphinxes shown on pl. vii, 5 and 7, wore kilts divided by vertical lines perhaps to represent folds: one that is unpublished had square insets. So far as we know, the kilt, though it had a long history in Egypt, does not appear on the sphinxes of the earlier group but it survived for some centuries more in the "Phoenician" area.[7]

The Egyptian double crown is very clearly indicated on some of our plates (e.g. v, 3; vii, 3 and 5): in other examples it was so much compressed as to be almost unrecognizable (v, 1 and 2) as frequently at Arslan Tash. A crown rather like an Egyptian *atef* crown is

[1] Poulsen, p. 7. [2] Perrot, III, p. 789. [3] *A.T.*, pl. xxxi. [4] *A.T.*, xxx, 28.
[5] *I.L.N.*, 23 Oct., 1937, pp. 708, 709.
[6] E.g. the apron of Amenophis III (Gardner Wilkinson, *Ancient Egyptians*, fig. 460); the kilt of a human-headed lion on the chariot of Tutankhamun (Carter and Mace, II, pl. xix); the skirt of Ramses III (N. M. Davies, pl. ciii).
[7] Bissing, *Denkemäler Ägyptischer skulptur*, text to pl. 37.

worn by one of the bird-headed griffins (xiv, 3): the other (xiv, 4) had plumes of the "Aegean" pattern like those on two Nimrud ivories.[1]

Only one of the human-headed sphinxes from Samaria wears an Egyptian beard (v, 3): all of them, on the other hand, wear wigs which usually end in a curl: the wigs are all more or less Egyptian in pattern, not one of them resembles the later "Etagenperücke".

Some of the sphinxes are represented stepping in stately fashion through a glade of "palmette trees": others stand like heraldic supporters on either side of a sacred tree: others raise their paws to touch the branches of the tree or rest them on the head of a lying captive: others are isolated. They were conceived as mighty superhuman beings: the psalmist speaks of the Lord riding upon the cherubim,[2] evidently therefore beings with animal bodies. There is no example from our three sites of a sphinx harnessed to a chariot like the sphinxes on the bronze from Olympia which is now in the Ashmolean.[3] Some of the fragments come from battle scenes in which lions were engaged with winged creatures of the griffin type (pl. viii): in these as on some of the bowls where the griffin is being slain by a human being the griffin symbolizes in all probability some aspect of nature such as drought or winter or the old year: the Samaria ivories of this class are lamentably fragmentary.

PLATE IX. LIONS

1, 1a, 1b. These are the finest pieces of ivory carved in the round which we discovered. The lions are represented crouching and open-mouthed as if roaring. They may have decorated the arms or the steps of a throne. The slots in the back might have held the supports of the arms: if they stood on the steps perhaps they carried ivory standards or the figures of deities: on Solomon's ivory throne "there were arms on each side of the seat, flanked by two lions, while twelve lions stood on each side of the six steps".[4] An ivory lion head with open jaws was found by the Harvard Expedition,[5] and three were found at Arslan Tash;[6] the old Samaria find came from the handle of a knife or some such object, the Arslan Tash pieces, which are on a larger scale, probably from the corners of a seat: they are not very close to our pieces.

The editors of *Arslan Tash* regard the style of their fragments as "purement oriental et spécialement assyrien": there is nothing peculiarly Assyrian about our figures, the modelling of the shoulders and hindquarters is delicate, quite unlike the hard rendering of the musculature that is associated with Hittite and Assyrian work, there is no trace of the shaggy hair which covers the back and belly of the more northern lions, the manes are treated exactly like the manes on the lions in pl. viii.

Besides the holes visible in No. 1 and the slots in the backs (No. 1a), each lion had a hole in the rump for a tail to be attached. The eyes were formerly inset and traces of red colouring remained in the mouths. Part of the rump of a third lion with a similar hole was found near.

2, 3, and 4. Three plaques in relief with the body and hind feet of a lion sejant in front of a lattice design in rectangles and circles. The plaques are unbroken and from 12

[1] Poulsen, pp. 48, 49.
[2] Ps. 18, v. 11; 2 Samuel, xxii, 11.
[3] Poulsen, p. 22.
[4] 1 Kings, x, 19, 20, in Moffat's version.
[5] *H.E.*, pl. 56.
[6] *A.T.*, p. 128, pl. xliii

to 13 mm. thick: some blue glass insets were in position in the lattice. The forelegs and lower part of the head of each lion must have been carved on a second plaque, and the upper part of the head on a third with a continuation of the lattice.

There is no great difference in style between these lions and those above. They are much closer to the Egyptian lions of Yesterday and To-morrow[1] than to any Assyrian or Hittite lions: but the Egyptian lions are leaner and more lively than those from Samaria; they are related to them in the same way as the infant Horus on the Namlot bracelets is to the Horus on our pl. i.

PLATE X. LIONS, BULLS AND DEER

1. A lion grappling with a bull. This plaque in pierced relief has a moulded frame and a long tenon with a stud hole on the right side: the bottom of the frame is complete and there is a tiny fragment of the tenon at the left bottom corner. The eyes of the two animals were inlaid. The letter *tav* is incised on the back.

The subject is a very old one: it occurs on a cake-mould at Mari,[2] and an ivory comb at Megiddo of the thirteenth century shows an ibex attacked by a dog (?) in the same position and with the tail coming up between the legs in the same way.[3] The bull at Samaria has long projecting horns like the cows at Arslan Tash. The treatment of the lion's mane, the smooth belly and the surface modelling is like that of the animals on pl. ix. The band round the body of the lion can be paralleled from Egypt.[4]

2. From a small plaque also pierced. The eyes of both animals were inlaid. The bull appears to be butting the lion which has one paw on the bull's shoulder.

3, 5. Fragmentary plaques of another favourite subject—the lion or sphinx (?), that is Pharaoh, trampling on a human victim. The victims in both these plaques were dressed in long garments with borders decorated with insets: the heads have disappeared in both.

4. Fragment from a similar scene. On this the head, shoulders and arm of the victim have been preserved: he wears a conical cap with a long fillet: the lion's paw rests on the cap.

6. Hindlegs of a hoofed animal with a long tail, probably a horse, possibly from another combat scene.

7. Perhaps the hindlegs and udder of a cow: from Qk. The cow and calf which was a favourite subject at Arslan Tash[5] is a sacred subject in Egypt, the cow being Hathor and the "sucking calf of pure mouth", as it was called, being the sun-god,[6] but it is also known in Mesopotamia.[7]

[1] E.g. Budge, *The book of the dead*, Papyrus of Hunefer, 8.
[2] *I.L.N.*, Oct. 31, 1936, p. 761. [3] *I.L.N.*, Oct. 23, 1937, p. 708.
[4] See Naville, *Deir el Bahari*, pl. lxxxv; Mariette, *Karnak*, pl. 14; in the temple of Hatshepsut at Thebes the belted lion which symbolizes Pharaoh receives "the adoration of all subject peoples that they may live" (N. M. Davies, pl. xiii).
[5] *A.T.*, pls. xxxvii–xlii. [6] Maspero, *The Dawn of Civilization*, p. 89. [7] Barnett, p. 207.

8, 8a. Fragment of a plaque with a procession of deer drinking or grazing: the head, antlers and foreleg of one deer, and the hind-quarters, tail and one hindleg of the next, are visible. Also from Qk where another fragment with the hindleg of a deer and part of the frame were found besides. This, too, is a popular subject: examples were found at Arslan Tash[1] and Nimrud[2] and it has a long history lasting down into the Sassanid period.[3] The editors of *Arslan Tash* comment on the naturalness of the figures: they claim, we think with justice, that the movement of these animals is represented more faithfully on the ivories than it is in Hittite or Assyrian art, and they look to the Aegean for their origin.[4] With the wonderful figures of animals which have come from tombs of the Middle Kingdom period at Byblos before one, it seems hardly necessary to go so far afield. The Samaria figures are only about half the size of those from A.T.: they are less delicately finished, but so far as one can judge the movement was represented as vividly.

PLATE XI. A THRONED FIGURE

1. Two fragments of a plaque in pierced work representing a figure seated on a throne with an attendant standing behind. The plaque is slightly concave: the exact height is not certain, but the two fragments are too far apart on the photograph. The letter *zayin* on the upper tenon which was of course originally concealed shows—as does the subject—that the plaque formed part of a longer composition made up of pieces which had to be assembled in the right order.

Seated figures are not uncommon in the art of the period. On a pyxis found by Loftus in the S.E. palace at Nimrud a goddess (?) is seated on a throne in the middle of a procession of musicians.[5] At Megiddo two ivories have been found on which seated figures occur: on one of them a chariot and captives are being led up to a seated king, on the other a banquet is in progress.[6] It is impossible to say to what scene the Samaria fragments belonged. Both the figures wear close-fitting head-dresses to judge from the straight edge above the foreheads: the head-dress of the seated figure is ribbed. They also wore long robes of which the ends can be seen above the ankles: the robe of the seated figure had a decorated border above the feet and under the arm. The bunch of lotus flowers originally had three stalks. The seat is simple: it had a fairly stout straight back with a cushion thrown over it or fastened to it. Similar cushions (or padded backs) occur on the seats in the cartouche ivory from the N.W. palace at Nimrud and at Beisan on the stela of Mekal.[7] The legs were plain and there was a recessed panel on the side with vertical slats. There is no footstool and both the seated figure and the attendant are barefoot.

The lotus flower is not like any of the other lotus flowers in the collection, nor are the borders of the plaque, and the carving seems to us to be of a different quality. The form of the letter *zayin* is also unlike other examples of this letter (see pl. xxv), and we are disposed to think that this one ivory may be of a later date.

The fragments were found in Qk.

2. The lower part of a face with trace of a beard.

[1] *A.T.*, pl. xxxvi. [2] Layard, 91, 29–31. [3] See *I.L.N.*, March 26, 1932, p. 482.
[4] *A.T.*, p. 119. [5] Barnett, xxvi, 1. Another figure from Nimrud is shown in Poulsen, fig. 32.
[6] *I.L.N.*, l.c. [7] Rowe, *Bethshan Topography and History*, pl. 33.

3. A profile, the eye-ball formerly inlaid: from a pierced plaque.

4. Fragment of a face with trace of a double crown, eye inlaid: also from a pierced plaque.

5. Face with inlaid eye-ball and hair treated in Egyptian fashion: contrast the wavy line of the hair on this with the treatment on 1: from a plaque in relief.

6. Fragment of head, crowned with a disk: hair treated in Egyptian fashion: sceptre (?) across shoulder: from a plaque in relief.

PLATE XII. FRAGMENTS OF HUMAN FIGURES.

Most of the nineteen fragments on this plate come from human figures. Though we cannot reconstruct the subjects to which they belonged they are valuable for the additional light they throw on the local costume and the technique of the period.

1. Upper part of a man with the right hand raised in adoration: a patterned border on the sleeve: hair dressed in Egyptian style: finely modelled.

2, 3. Two heads both from plaques in pierced relief with fragments of the frames. The first is very like the sphinx from Nimrud and both may have come from human-headed sphinxes.

4. Ear and back of a head, the hair treated in Egyptian style.

5. Top of a head with fragment of a uraeus.

6. From the right hand corner of a small plaque: the head of a man wearing a conical cap with a long tassel. This tasselled head-dress is characteristic of Phoenician or Syrian art: compare the head-dress on the phiale from Olympia,[1] the even longer tassels worn by Mekal on the Beisan stela already quoted, and by the man with a spear on the Moabite relief.[2]

7. Fragment of head perhaps from a sphinx.

8. Head of a man.

9. Part of a man with right arm extended and evidently moving to the right: his sleeve has an embroidered border: the skirt is treated in the same ribbed style as the fragment below, xii, 18, and the plaques on i, 2, ii, 2: it had a vertical border.

10. Fragment of a leg from a striding figure: the border of his garment formerly inlaid.

[1] *Olympia*, IV, Text p. 141, pl. lii.
[2] Maspero, *Les premières mêlées des peuples*, p. 661. Perrot, III, p. 443.

The end of this piece had been sharpened for some purpose: the piece was found in Qc in the same disturbed stratum as the finer, less damaged, fragments.

11. Part of a crown with two ostrich feathers and a disk, formerly inlaid. The crown is a rather finer edition of the crown above the cartouche on the well-known ivory from Nimrud.[1] A larger feathered crown was found on another fragment in relief: from Qk.

12. A hand grasping some object.

13. From near the border of a plaque in pierced work: a human foot with the toes more carefully indicated than usual.

14. Fragment of the left arm and shoulder of a figure: a blue inset was in place in the border below the shoulder which continued down the side: also a fragment of gold leaf.

15. Part of the outer robe of a figure moving to left: the texture treated in the same wavy style as the robes on ii, 1, the lines in this case running obliquely: rich border.

16, 17. Two Phrygian caps which are of much the same shape as the cap worn by Jehu on the obelisk of Shalmanezer III but without the lower fold. Ahab fought against Shalmanezer III (reigned 854–824) at the battle of Karkar.

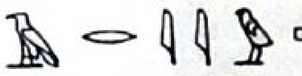
18. Fragment from a kneeling figure from the bottom of a plaque: border and treatment of garment as in 9.

19. Fragment of the leg of a large figure striding to right: the texture of the garments is indicated in a way which suggests flocks of wool, that on the part above the knee being the outer side: the borders are less elaborate than usual: the stuff just left of the knee may be compared with the hanging end between the knees on the Nimrud figures which grasp lotus trees.[2]

A number of other fragments from plaques in relief representing human figures were found: some with surface much destroyed which came from a curved object such as a small pyxis, showed the feet of a figure with a curved skirt and a geometrical border with squares and oblongs filled with red paste.

PLATE XIII. FRAGMENTS MOSTLY MYTHOLOGICAL.

1. Two rows of hieroglyphs. The frame at the top is broken at both ends and the plaque obviously continued on three sides, but the inscription which has been read as a proper name may be complete. There were traces of gold leaf on the ivory when found and of blue glass insets in the hieroglyphs: a very fine thread of blue glass ran between the columns. It is probable that no ivory at all was visible.

Mr. Alan Rowe tells us that he reads the signs as follows,  : the

[1] Layard, 89, 10. [2] Barnett, xxiii, 4.

left column may be transliterated ALY, the right WShB, and the whole gives the Semitic proper name Eliashib—God is requiter. For purposes of symmetry, as will be seen on the plate, the signs in the left column face right, those in the right face left. The name Eliashib was borne by a priest in the time of David,[1] by a descendant of the royal house in the fifth century,[2] by a high priest in the time of Nehemiah[3] and by others of the same period who are mentioned in the book of Ezra. The Eliashib of the ivory was presumably a priest or chieftain in Samaria in the ninth century.

2. The woman at the window. This is a very modest version of a subject which is much better represented on ivories from the N.W. palace at Nimrud, from Arslan Tash and from Khorsabad.[4] A double figure of the same type decorates the legs of the bed of Ashurbanipal.[5] At Samaria small fragments of other window frames were found in Qc with the plaque published, some of them more finely finished, and fragments of at least two other replicas in Qk which are nearer in size to the A.T. heads and have balusters of the same type (see fig. 4).

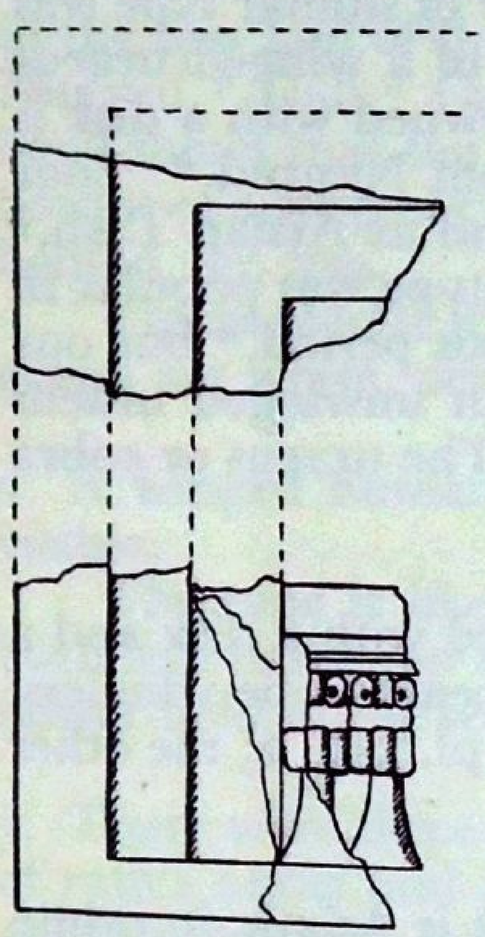


Fig. 4

The small scale of the figure on our plate has led to the blurring of various details and to a reduction in the number of balusters under the window sill from the usual four to three. The eyes look as if they were closed and the ears might be cow's ears, but neither is probable: the only differences between our figure and the others are differences of scale and execution. The hair above the forehead is treated at Samaria and Nimrud as a row of curls with a naturally wavy edge (see also pl. xi, 5) whereas at Arslan Tash and Khorsabad it ends in a hard semi-circular furrow.

The triple recess of the window frame was probably copied from the windows on Egyptian tombs: it is a constant feature on all these ivories and recurs on an ivory from Ialysos in the Rhodes museum which never contained a head.

The capitals on the balusters are interesting and they have been discussed at length by the editors of *Arslan Tash*.[6] The capital from which they are derived had a plain abacus. Under the abacus was a palmette with a large and deeply holed volute on either side: the palmette is frequently shown in outline only, but it is well moulded on one of the tinier Samaria fragments (now in London). Under the palmette and volutes is a tie which bound them together, and beneath the tie is a wreath of pendant leaves which again are fastened together by a triple tie at the top of the column shaft. On one of the examples from Nimrud the column appears to have been fluted.[7]

The name and identity of the woman at the window has been much discussed: Barnett and the editors of *Arslan Tash* regard it as a "type of Ashtart known to the Greeks as Ἀφροδίτη παρακύπτουσα in which the goddess, like her sacred harlots, allures passers-by from her window":[8] Contenau compares it with the Egyptian figures[9] of the

[1] 1 Chron., xxiv, 12. [2] 1 Chron., iii, 24. [3] Nehemiah, iii, 1.
[4] See Barnett, p. 182 and Frankfort in *O.I.C.* no. 17, 1934, p. 88. Khorsabad too is connected with Sargon II.
[5] See reproduction in *A.T.*, p. 116.
[6] *A.T.*, p. 117. [7] Layard, 88, 3. [8] Barnett, p. 182. [9] *Man. d'arch. orient.*, 1935, p. 1335.

soul looking out of a window in the tomb: we are disposed to think that the figure represented is Ashtart, but that the formal representation may be copied from the Egyptian models.

3. A fish, perhaps *Silurus Schilbe Niloticus*: besides the traces of a forked tail above this, there were remains of a third fish on another fragment and of water flowers: all probably from a water scene.

4. Fragment from a pierced plaque: a winged uraeus, seated on a papyrus flower, one wing raised, the other lowered. A wing fragment from another plaque of similar type was also found. The Harvard Expedition found a third representation of a winged uraeus with a double crown on a pierced plaque,[1] and a winged uraeus crowned with a disk is represented standing on a papyrus column on one of the bowls from Nimrud.[2] Four plaques with a winged uraeus approached by worshippers were found at Arslan Tash,[3] and the winged uraeus occurs also on Palestinian seals. In Egypt the type was popular in the time of the New Empire and is known on a scarab of the Hyksos period,[4] but our closest parallel again comes from the Khons temple at Karnak: an unwinged uraeus rises in one place from a lily, in another from a papyrus (see fig. 2). The uraeus or cobra was the goddess of Buto and the protector of Lower Egypt.

5. Fragment from another plaque in pierced relief: a uraeus crowned with a disk and a lily by its side: part of the upper frame and tenon. This uraeus appears to be wingless. Two other uraei were found, both without wings: one is published on pl. xxii, 2; the other is a small figure with a crown: they were found in Qk.

6. A goat standing on its hindlegs to browse off a tree. This subject is Asiatic in origin rather than Egyptian: it was found at Ur in early Sumerian times, it occurs also at Senjirli on one of the gate reliefs about the beginning of the 1st millenium B.C. The eye was inlaid.

7. Perhaps a bear or a small lion.

8. A hawk's head with fragment of a crown which contained traces of blue frit inlay.

9. The ibis head of Thoth, the divine scribe: crest inlaid.

10. A fragment from a replica of No. 6.

11. The hindquarters of an animal with a forked tail like the tails of Set animals.

12. Head of an ibex.

13. A hand holding a *neb*-bowl with the eye of Horus above: inlaid.

[1] *H.E.*, pl. 46 f. [2] Layard, II, pl. 68. [3] *A.T.*, p. 108, pl. xxxii.
[4] Newberry, *Scarabs*, pl. xxiv, no. 29.

PLATE XIV. INLAID FIGURES

The subjects of the ivories on this plate are of the same character as those on the previous plates, but the technique is different: see p. 10.

1. Pharaoh smiting an enemy. Pharaoh wears the double crown: he holds a club in the right hand and grasps the hair of a kneeling enemy, who lifts his hands in supplication, in the left. An attendant holding a flower stood behind. The subject must be one of the oldest in the Egyptian world: two examples of a Pharaoh in the same attitude which date back to the First Dynasty are published in Breasted's *History of Egypt*:[1] it was very popular in the first half of the last millennium B.C. and occurs on bowls from the N.W. palace at Nimrud,[2] Dali,[3] Curium,[4] Praeneste,[5] Salerno.[6] The representation on the Nimrud bowl shows that the curved lines with insets still in them are derived from the decorated border of a strip of cloth thrown over the shoulder, passed round the waist and flowing on behind the legs.

Traces of blue frit were left in some of the troughs: the insets which show on the photograph are white, perhaps of mother of pearl.

2. A winged human figure holding a lily in each hand. Traces of blue frit were still visible.

The type is like those discussed previously (pl. iv), but this is the only figure with both legs bare, and the arms are lifted higher than usual. Above the wing is the end of a flower held in the second hand. See for another example pl. xv, 7.

3. There were three subjects on this piece. Below, a bird-headed sphinx, wearing a crown of ram's horns and plumes, rests the fore-paw on what was probably a sacred tree. In the middle there was a lily and bud chain (see pl. xv). The design above we have failed to identify: perhaps a lion trampling a human victim.

4. A small fragment of a bird-headed sphinx. Three erect plumes and three pendant plumes have been incised rather faintly on the ivory which perhaps was not finished. The reconstruction of the lifted fore-paw is certain, but we question whether the wing has been rightly restored: there is no other instance of a wing recurved in this way at Samaria, and the trough which the artist has interpreted as a wing-feather may have been part of a tree.

Four other fragments of similar plumes, all from plaques in relief, were found. The plume is of the form which was popular in the Aegean, but it is an old Egyptian motive.[7]

5. A winged sphinx wearing the double crown and kilt of a Pharaoh (see pl. v–vii) and resting the fore-paw on a sacred tree. The kilt was of the chevron pattern. Traces of a simple border below: some remains of blue frit.

6. Fragment of a similar design on a slightly larger scale: the right half of the sacred tree is preserved and the profile of the sphinx advancing to left can be recognized, though only one segment of the kilt survives.

[1] Breasted, *History of Egypt*, figs. 26 and 28.
[2] Barnett, fig. 7.
[3] Perrot, III, 771.
[4] ib. III, 789.
[5] ib., III, 97.
[6] Poulsen 28.
[7] Evans, *Palace of Minos*, I, p. 710 f., Montet l.c.

7. Small fragment of a kilted sphinx with a captive under its fore-paw: one paw of the sphinx, two segments of the kilt, the upper part of the captive's body and one hand survive.

8. Fragment of figure facing right, winged like No. 2, and holding a lily: as in 2 the hand and arm are raised well above the wing: the volute of a sacred tree to the right is quite clear on the original: border.

9. On left a similar figure, crowned with a disk and holding a lily in one hand, approaches a sacred tree of which one volute and the fragment of a smaller one remain: border.

10. Fragment of a similar figure advancing to left, holding a papyrus flower: border.

11. The left outline shows trace of the face, disk and shoulder, of a figure with one hand raised in adoration, and a flower in the other: on the right remains of what may be a wing or a palmette: border above.

PLATE XV. INLAID PATTERNS

The ivories on this plate were executed in the same technique as those on pl. xiv, but the subjects are purely decorative rows or chains of flowers and buds.

1. A semi-circular plaque: two lotus flowers and a lily. When it was found there was some green glass on a foundation of blue frit in the petal next to the stud hole.

2. A row of lotus and bud with traces of glass above red, blue and green, paste or frit. A border above of Egyptian type like those on several plaques in xiv.

3. Chain of lotus and bud with a border above like that in 2.

4. Chain of palmettes and buds: borders above and below. Both fragments were burnt and all trace of inlay had vanished.

5. A row of lotus and bud similar in design to 2: photograph slightly enlarged. The insets were better preserved in this piece than elsewhere though very fragile: they were of blue and green glass, both colours laid on a foundation of bright blue paste.

6. A small fragment in fine workmanship from a row or chain of palmettes.

7. From a winged figure holding a lily, a papyrus stem and flower beyond, *cf.* xiv, 2. Other papyrus fragments were found with this: compare *A.T.* xlv, 101–103.

8, 9. Reconstructions drawn from other fragments with inlaid lotus, palmette and bud, chains similar to the above.

PLATE XVI. LOTUS CHAINS

1. The best preserved section of a fragment which was 39 cm. in length, 4 cm. high, but much damaged. The lotus and bud chain is of the same type as those on 2 and 7 below.

2. Fragment of another lotus and bud chain: traces of gold leaf were found on the raised lines.

3. Fragment with chain of alternate palmette flowers and lotus: from a border. The surface to the right destroyed.

4. Fragment from a border with a chain similar to 3.

5, 6. Two fragments of pottery from the site E 207.[1] Both from the rims of bowls of buff ware, decorated with a burnished red slip and incised designs of lotus and bud. They are reproduced on this plate to show the popularity of the design: on these the flowers were erect, not pendant.

7. A restoration made up from a number of small fragments similar in technique and drawing to those on 1 and 2 but on a larger scale.

A great many other fragments with patterns like the above were found, both burnt and unburnt.

Chains and rows of lotus flowers and buds are derived ultimately from Egypt. They have been found there painted round the walls of tombs and it is probable that the pattern was suggested by actual flowers festooned like a sort of frieze just below the ceiling.[2] In some cases bunches of grapes, which are like the buds in outline, alternate with the flowers. In Egypt flowers, buds and bunches all hang downwards, sometimes fastened together to form a continuous chain, sometimes each separate in a discontinuous row. The two arrangements in Samaria (pl. xv, xvi, 1, 2, 7) both therefore go back to Egyptian models.

The examples on pls. xv and xvi, with which the lotus on pl. i should be compared, show that the lotus flower was variously represented: on pl. xv the petals are more lanceolate than on pl. xvi: the cusped cup beneath the petals, which is common elsewhere, occurs at Samaria only on pl. i. The chain pattern occurs on the sarcophagus of Byblos,[3] on a long strip of ivory at Arslan Tash[4] and on a bronze bowl at Tell Nimrud.[5] The most interesting element in the Samaria strips on pl. xvi is the egg-shaped tongue above both buds and flowers (Nos. 1, 2 and 7): it is absent at Arslan Tash and also on a stone vessel at Samaria, but it recurs on the bowl from Nimrud and it is a constant feature on a series of early Rhodian oenochoae:[6] it recurs also in stone at Samos on a detail from the great altar which though actually of Roman date is in all probability faithfully copied from an archaic original.[7] In his discussion of the last example Schleif describes it as a closed bud, but is this possible? Its appearance at Samaria and Nimrud shows that according to at least one tradition it had become an integral part of the pattern at an early date, and I would sooner see in it a survival of the original fastening of the flowers or garlands. The tripartite division of the bud (xvi, 1, 2 and 7) is another early feature which survived in archaic Rhodes.[8]

[1] See *Samaria-Sebaste*, I. The site was outside the walled city on rising ground to the east.
[2] See *Jéquier, Décoration Égyptienne*, pls. xxxviii and xxxix and p. 124, and N. de G. Davies, *Tomb of two officials of Tuthmosis the Fourth*, 1923, pls. xiv, xxi, xxiii, etc.
[3] Montet, p. 229, pl. cxxviii f. [4] *A.T.*, p. 134, pl. xlvi. [5] Layard, II, 57 A.
[6] See *Clara Rhodos*, VI, figs. 59, 62, 94 etc. all from Papatislures.
[7] See Hans Schleif in *Ath. Mitt.*, 1933, p. 188 and Beilage lv. [8] Kinch, *Vroulia*, 195 f.

There is no evidence to show whether the flowers opened upwards or downwards on the ivories: on the sarcophagus of Ahiram they hang downwards, on the potsherds from Samaria they opened upwards, on Rhodian oenochoai there are frequently two bands, one with flowers opening upwards, one downwards.

PLATE XVII. FRAGMENTS MOSTLY FROM PIERCED PLAQUES WITH LOTUS, LILIES, PAPYRUS AND PALMETTES

Several of these fragments come from plaques in pierced work like those on pl. v, 1 and 2, notably those numbered 1 to 5 which illustrate different forms of the lotus, lily and papyrus. These "sacred" or "palmette" trees as they may be conveniently called were sometimes employed as decorative borders:[1] sometimes they stood between two sphinxes or winged figures:[2] the temple described by Ezekiel[3] was ornamented in the latter way—"it was made with cherubims and palm trees so that a palm tree was between a cherub and a cherub". The same elements recur again and again, though it may be that no two examples are exactly alike in every detail: the type goes back to the Egyptian art of the 18th Dynasty.[4]

1. Fragment with frame and tenon: the flowers halfway between a lotus and a lily.

2. Lilies from the lower part of a similar plaque. Fragments of gold leaf were found adhering to the right upper flower.

3. Found in Qf on the lower slopes north of the forecourt of the Augusteum about 90 m. away from the main find-spot of ivories: it represents papyrus blossoms: formerly inlaid.

4, 4a. A very elaborate palmette tree with double incurving volutes, veined leaves below them and side shoots. Similar veined leaves occur at Arslan Tash.[5]

5. A lotus from the top of a plaque with well defined petals.

6, 6a. Fragment of inlaid plaque with restoration showing the incurving volutes.

7. Fragment from an inlaid plaque: trace of blue inset. One of two similar fragments had red inlay.

8. From a border in fine work, once inlaid. The flowers are not clear: the lower one is probably a palmette but might be a rosette: the upper one looks like the bottom of a lotus but the "drops" on either side suggest a palm.

9. A lily.

10. A palmette.

[1] See *A.T.*, xlv and below pl. xxi. [2] As on *A.T.*, xxiv, xxv, xxvii. [3] Ezekiel, xli, 18.
[4] Petrie. *Decorative Patterns of the Ancient World*, pl. xi. Davies, pl. xxxiii. [5] *A.T.*, xlv, 99.

11. Alternate palmettes and buds possibly from a design with long stems like a papyrus and bud from Arslan Tash,[1] the comparison being suggested by some other fragments found with this piece.

12. A palmette.

13. Papyrus head from the top of a plaque.

14. A fine palmette which may come from a border like the similar palmettes on xx.

PLATES XVIII, XIX, XX. PALMS

Repetition is characteristic of the art of this period. At Nimrud, Arslan Tash and Samaria, it is the exception to find subjects which are not repeated on more than one replica. At Samaria the most popular subject of all is a palm with drooping fronds. The fragments which were collected came from more than seventy different representations. They varied greatly in size but very slightly in detail: the range of scale and the principal variations in form are shown on pls. xviii–xx and on fig. 5.

The shape of the stem is constant: the base spreads on either side as far as the spread of the branches, the trunk ends above in a chevron. Triple fronds spring from this chevron and hang down on either side of the trunk like a pair of wings. Conventional clusters of dates variously finished lie on the top of the fronds, and a second pair of fronds, which are cut off sharp in line with the outer edge of the lower fronds and the base, rises from a second chevron immediately above the first. In some examples there is a third chevron at the top, in others a palmette.

PLATE XVIII

Three examples of approximately the same size. The details on fronds and chevrons are indicated by ribbed lines: a palmette in three segments rises between the upper fronds: the clusters of dates on the fronds are only shown in outline. The central one was cut from two pieces of ivory.

PLATE XIX

Three examples on a slightly smaller scale. On nos. 1 and 3 the dates are clearly indicated: on no. 2 the whole of the upper fronds is preserved.

PLATE XX

Nos. 1 and 2 illustrate another variety: they are more squat and the divisions of the fronds are not indicated by ribbed lines but recessed one behind the other: both have a

[1] *A.T.*, xlv, 101–103.

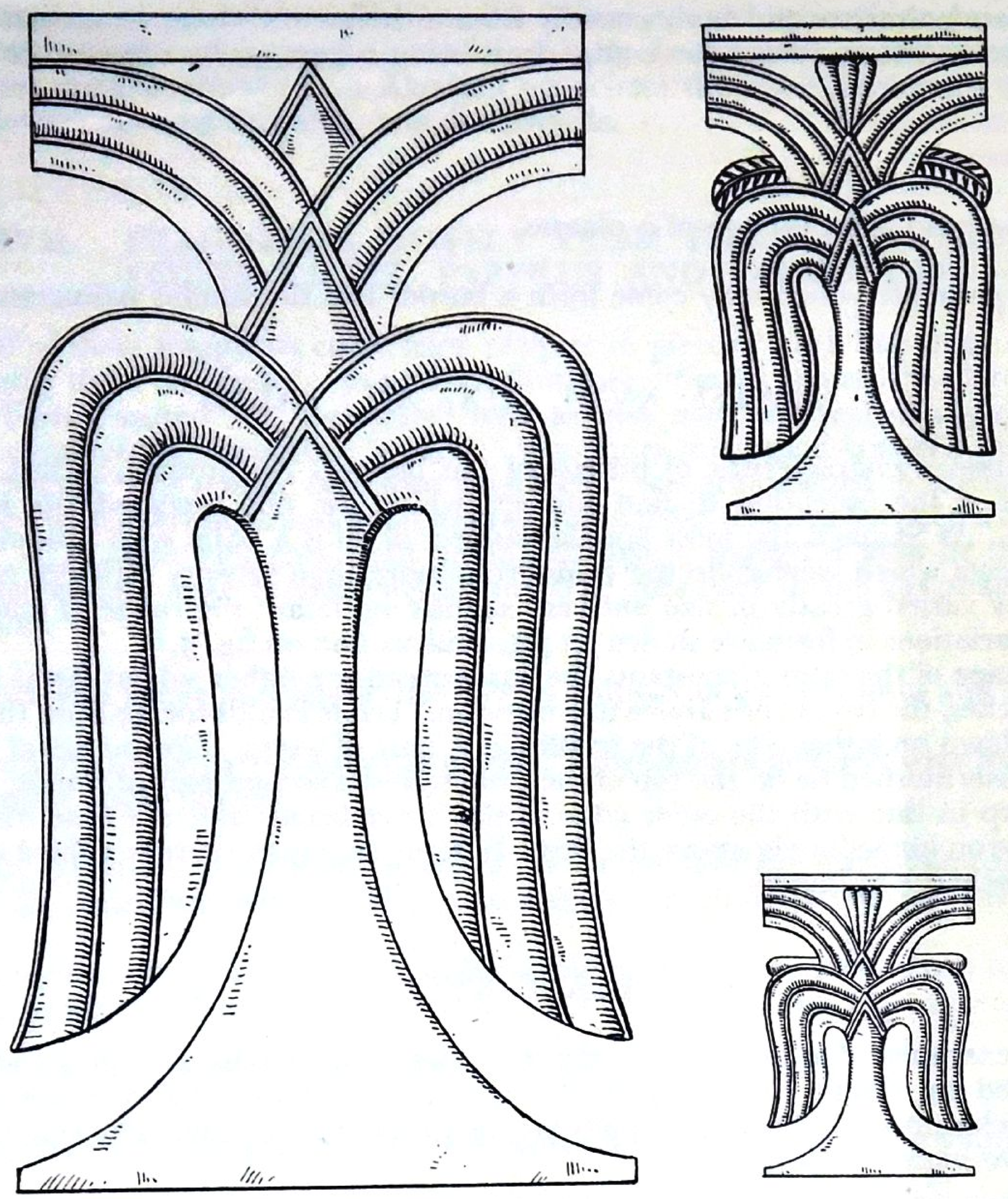


Fig. 5

third chevron in place of the palmette at the top, and on both the dates are carved. On no. 1 the ivory on either side of the top chevron has not been cut away, and the letter *beth* is carved on the face of the lower tenon.

Nos. 3, 4 and 5 have been burnt. They have the same ribbed lines as those on the two previous plates: nos. 3 and 5 have three chevrons, no. 4 two chevrons and a palmette.

Fig. 5 gives restorations of the largest and the two smallest of which fragments were found.

The form is adapted from a more naturalistic type which occurs some centuries

earlier both in Egypt where the palm is more or less at home and in Greece where it is not. In Egypt palms with somewhat similar trunks and two drooping fronds appear on the patera from Tell Basta, with animals on either side; on these palms the upper fronds are not truncated but shoot up freely above and date clusters hang down under the lower fronds.[1] In Mycenaean Greece a palm with triple drooping fronds on either side of the trunk occurs on three ivory plaques which were found at Argos, and on a fragmentary plaque from the same site a sphinx is sitting on one side of a similar palm: in these too the upper fronds spread upwards fanwise.[2] At Samaria this form has been conventionalized, and very little remains of the original type except the drooping fronds. At Arslan

Fig. 6

Tash three somewhat similar palms were found:[3] they have a trunk of the same form with spreading base and slender stem, two chevrons above and one palmette, ribbing of the same style, and date bunches indicated only in outline: there are, however, no divisions on the fronds. At Nimrud also we believe that there is evidence of the same form: among the fragments which are not exhibited we found two (N.D. 425 and N.D. 428) which appear to show three superimposed chevrons with the stumps of fronds rising from them but very little is left.

Palms of the conventionalized Samaria type reappear as small decorative motives on archaic Greek pots in the geometric style. The Greek example shown on fig. 6 comes from a small Rhodian crater which was found at Papatislures:[4] the lower fronds droop in

[1] See Maspero, *Egyptian Art*, 1913, p. 170 f.
[2] See Bull. Corr. Hell. 1904, p. 385, figs. 21, 22 and references.
[3] *A.T.*, pl. xliv, p. 131.
[4] See *Clara Rhodos*, VI, 1932, fig. 88.

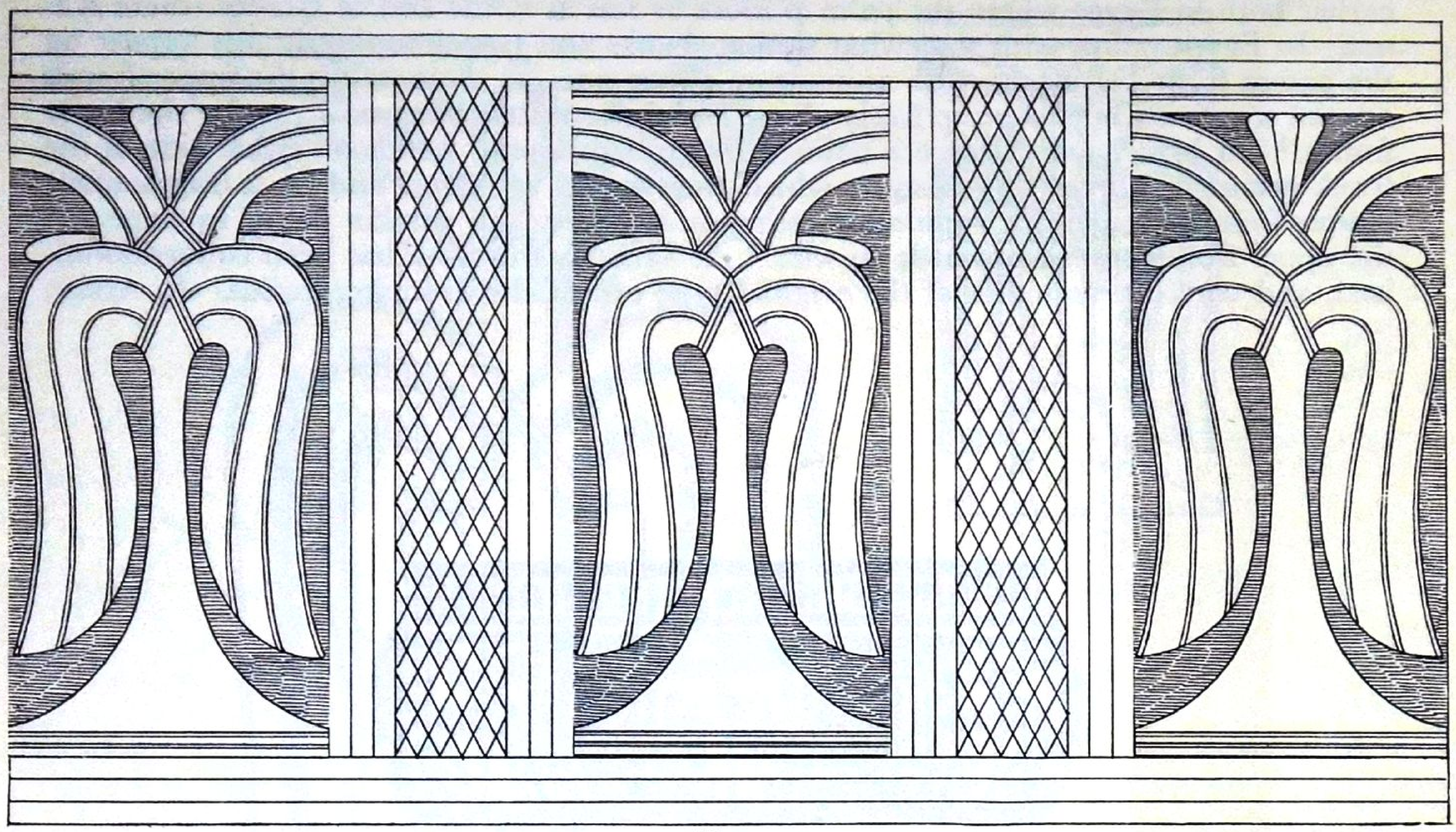


Fig. 7

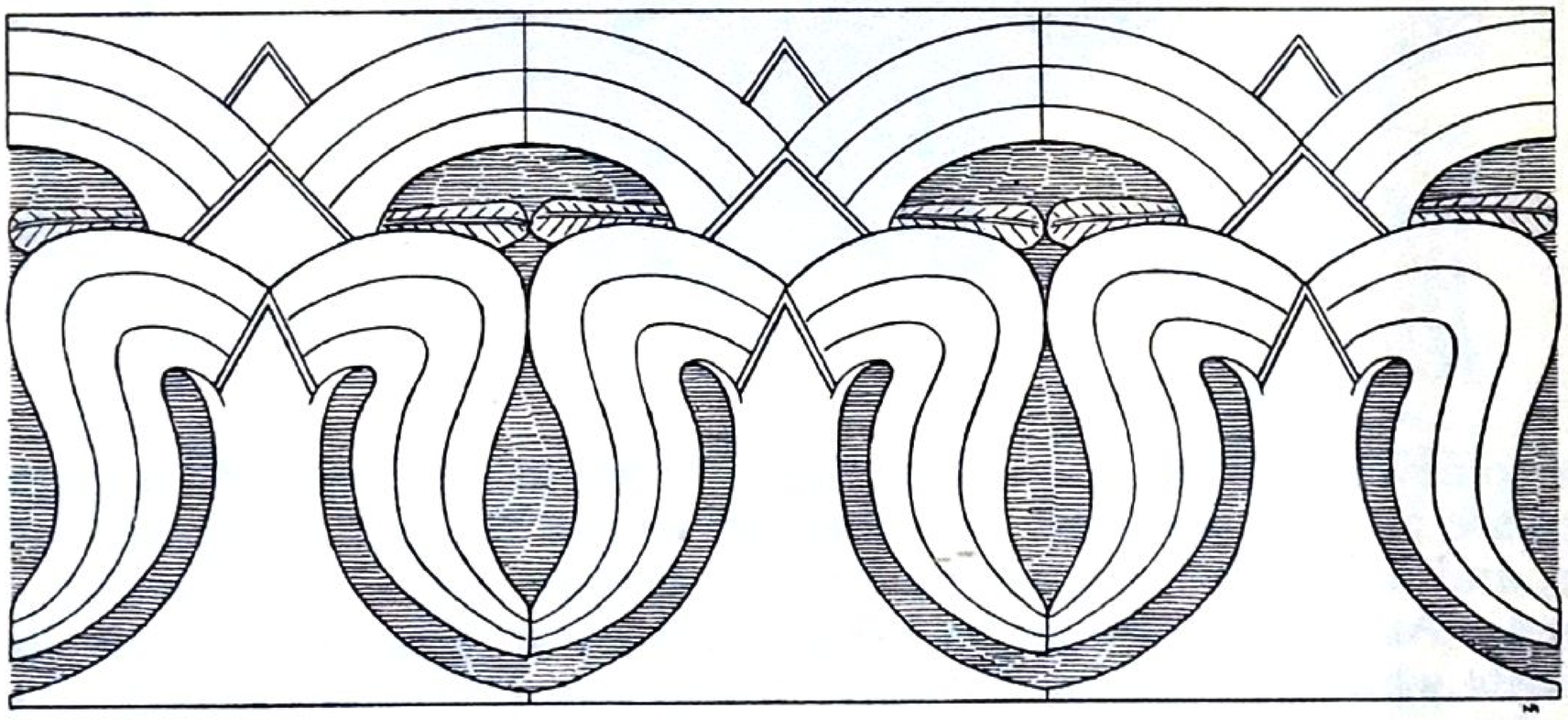


Fig. 8

the same winglike fashion and the upper fronds are truncated in the same way: the Rhodian type is obviously derived from the Samaria-Arslan Tash type.[1]

[1] We discussed the motive with the late Mr. Humfry Payne. He referred us to an example on a geometric vase in the Louvre No. A 288 (see Pottier's Catalogue Vol. 1 and Winter, *Kunstgeschichte in Bildern*, pl. 114, 11), which, however, is not quite so close as that figured in the text. Mr. Payne added—"in Greek geometric it has a very odd and unexpected look, and calls for some explanation".

The Rhodian palm is repeated on a band of metopes which runs round the crater, and we suggest that at Samaria too the palms were probably arranged in a row of metopes with wooden slats between them after the manner shown in fig. 7. The editors of *Arslan Tash* proposed another scheme which is shown on fig. 8 applied to the palms on pl. xx, 1: this scheme appears to us less attractive in appearance and less sound in practice—the larger palms would certainly tend to fall out of place if they were not better held at the sides. The large number of palms which were found at Samaria suggests that, as at Rhodes, all the metopes in a row were filled in the same way but it is possible that other subjects were interspersed.

The older form with drooping fronds but with more naturalistic leaves above recurs lastly by the side of many elaborate variants of the palmette tree in the mosaics of the Dome of the Rock.[1]

PLATE XXI. BORDERS

All the pieces on this plate are purely decorative and all except No. 8 appear to come from borders set in the frames round wall panels or articles of furniture.

The patterns on Nos. 1–5 are made up of varieties of the sacred tree and the Phoenician palmette.

1. Apart from its exceptionally delicate workmanship, the distinctive features of this strip are the broad fan-shaped palmettes with eighteen or nineteen divisions and the loop-shaped centre from which they spring. It will be noticed too that the stalks of the flowers and buds which shoot from the tree are alternately curved and oblique. A small part of the fragment is not shown on the photograph: the total length was 17.6 cm.

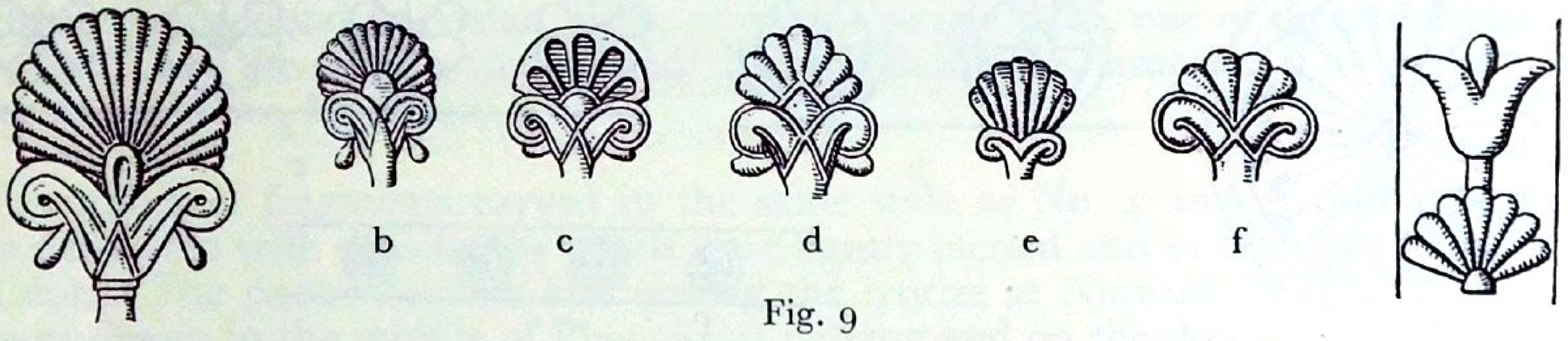


Fig. 9

Palmettes of a similar type occurred on several other fragments, many of them very small. Six forms are shown in reconstruction on fig. 9: of these *b*, *d* and *e*, are published also on pl. xvii; *c* was inlaid and like a fragment found in Qh; *g*, which was found in Qn, has a lily growing out of the palmette. In some the centre of the palmette is shaped like an inverted bowl, in others like a chevron, in others as for example *e* and *f* it is absent, the loop-shaped centre of *a* is unique. The number of small variations show the freedom of the artist. At Arslan Tash the type is represented only on two sphinx plaques (*A.T.*, pl. xxix).

[1] See Marguerite van Berchem in Creswell, *Early Muslim Architecture*, I, p. 185 and pl. 12 c.

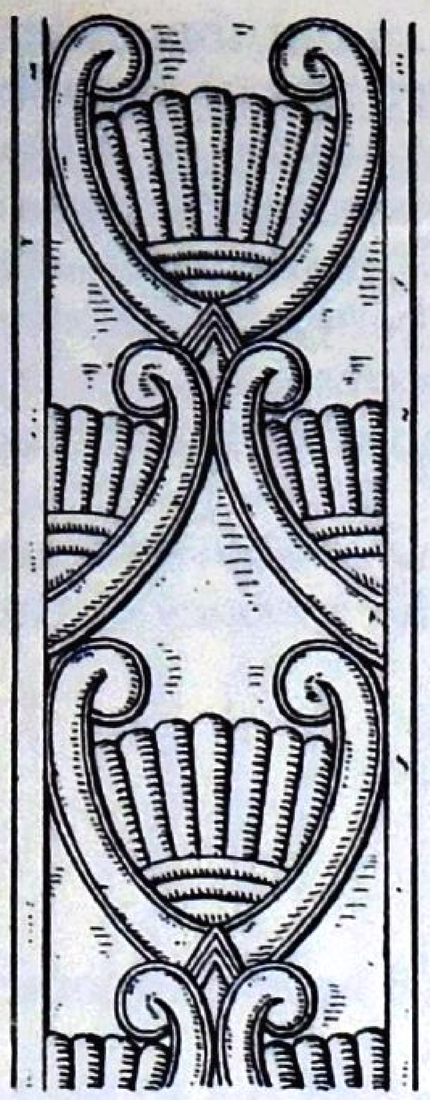


Fig. 10

2. A Phoenician palmette of the usual pattern is imposed on a much reduced sacred tree. The one distinctive feature is the collar of beads, the Egyptian sign for gold—n b w, in the top left corner. It is a finer version of patterns from Arslan Tash.[1]

3. This piece is obviously unfinished, though if one may judge from the two peg holes it had been fixed to some panel. The design is only sketched out in rough incised lines and it was apparently changed, the incurved volute on the top left side being an afterthought. The horizontal lines below may be explained as marks of the surface to be reduced when the work was finished: this may be the case also with other lines, those at the top between the two volutes and those on the right side. Fragments of a second plaque in the same state were found and their existence, like that of the fragment of an unworked tusk on pl. xxii, might be taken as an indication that some at least of the ivories were actually carved in Samaria.

4. Fragments of a very thin panel only about 1 mm. thick. The design is composed entirely of Phoenician palmettes, the chevron at the base being a survival perhaps of the tree.[2] (N.B. On the plate the fragment on the right of the lower piece has been misplaced: it comes from the same strip but from somewhere on the left side.) See fig 10.

5. Fragments of a smaller strip with a reduced and simplified version of the same design but merely incised in outline.

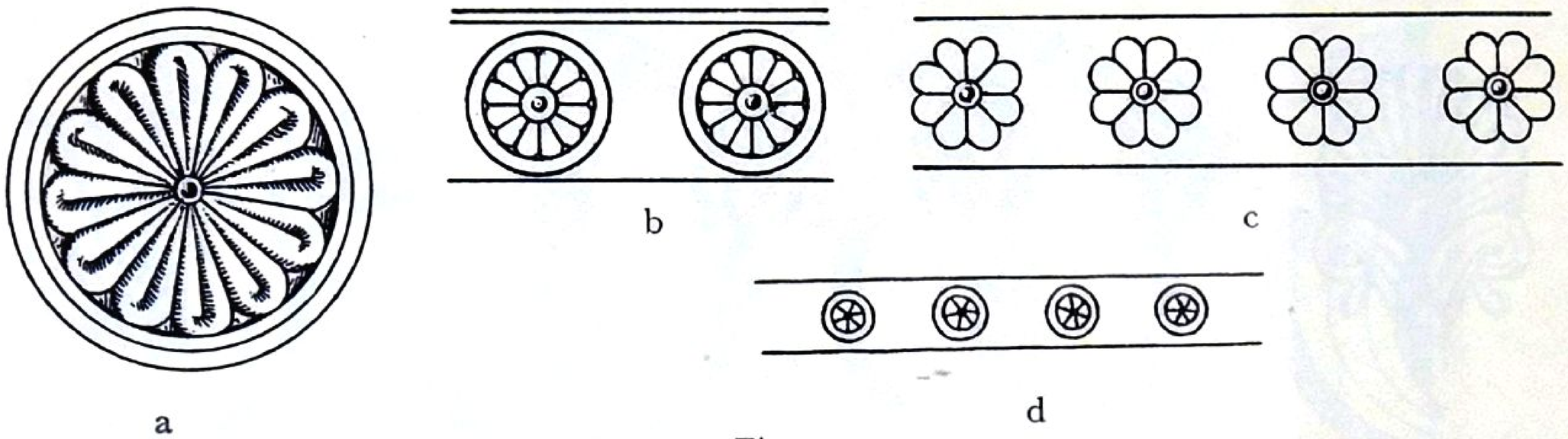


Fig. 11

6. A fragment with a row of eight-petalled daisies with a hole in the centre: the petals were polished and stained a pale yellow, the ground round was roughed. About a score of fragments with similar designs were found: four of them are shown on fig. 11. Nos. *a b*, have twelve-petalled flowers and circles round them: the smallest of all came from Qn. There is an ivory band with daisies on it in the Nimrud collection, N.D. 462. For daisy insets see pl. xxiv.

[1] *A.T.*, pl. xlv, nos. 97 and 98.
[2] See also examples quoted on p. 16.

Fragments coloured in the same fashion have been found on other sites. At Khorsabad, for example, Gordon Loud found some fragments of ivory from wooden caskets "with the designs accentuated by deep yellow paint, the background being left uncoloured": one of the fragments published had a palmette chain, the other a lotus chain.[1] Another example is quoted in the next paragraph. Earlier objects in coloured ivory have been found in the tomb of Tutankhamun[2] and the art of staining ivory is mentioned by Homer.[3]

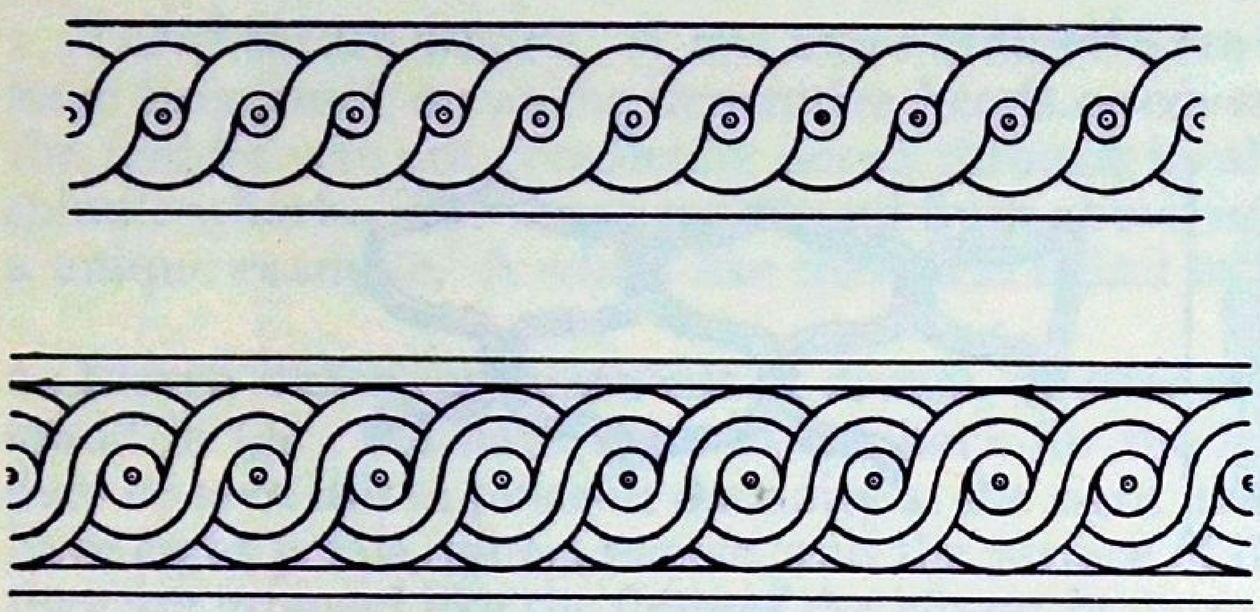


Fig. 12

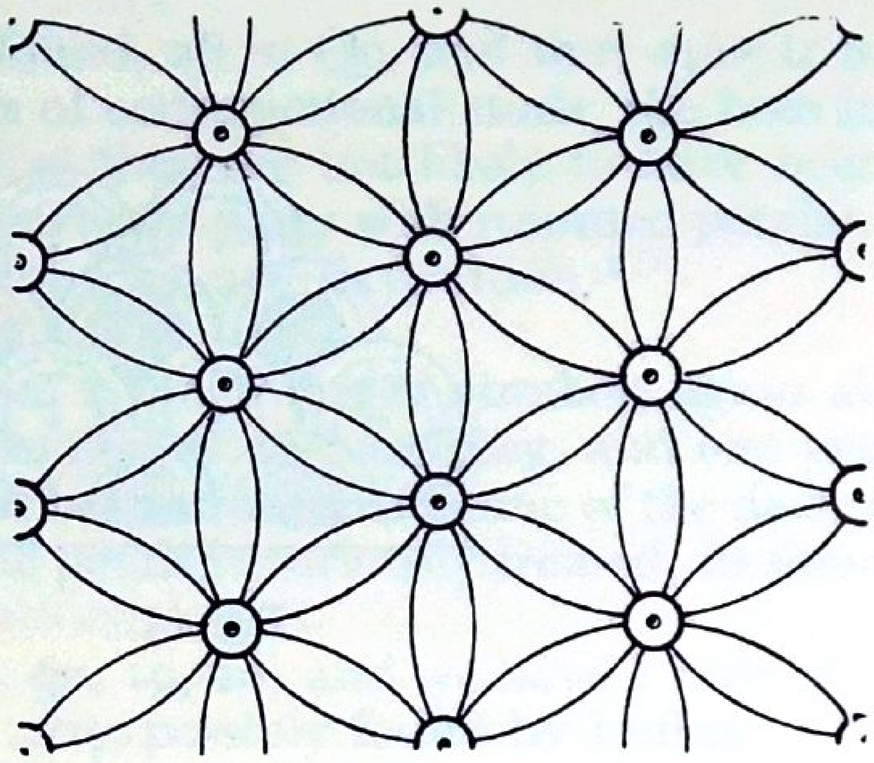


Fig. 13

7. An enclosed twist or cable. This also was a very popular border pattern. The twist is sometimes single, sometimes double; see fig. 12. A fragment from Qn was rounded as if from a circular box. An example from Nimrud is published by Layard,[4] and four fragments were found at Arslan Tash, all with a single twist, one of them between lines: at Arslan Tash the designs were tinted[5] like the daisies at Samaria. The pattern is not, so far as we know, Egyptian.

8. A number of fragments carved in the same style as No. 4 and of the same thinness were decorated with sixfoils; the petals were lightly incised and in the centres were circles and dots. The pattern occurs also among the ivories at Nimrud (N.C. 201) and as an all-over design in the middle of Phoenician paterae and on the doorsill of Ashurbanipal's palace (Olmstead, *History of Assyria*, fig. 151). It was apparently used in the same way as an all-over pattern in Samaria. See fig. 13.

9. A border with a lattice of rhombs: four dots in each rhomb (fig. 14 a).

10. A border with a lattice of squares some dotted to form a chain pattern. Several fragments were found with similar patterns or varieties of them: in some the lines forming the lattice were doubled, in others circles with single or double lines were introduced (fig.

[1] *I.L.N.*, Sept. 28, 1935, p. 505. [2] Quoted by Williamson, *The Book of Ivory*, pp. 121–3.
[3] *Iliad*, iv, 141. [4] Layard, pl. 90, no. 17. [5] *A.T.*, pl. xlvii, 108–111, p. 134.

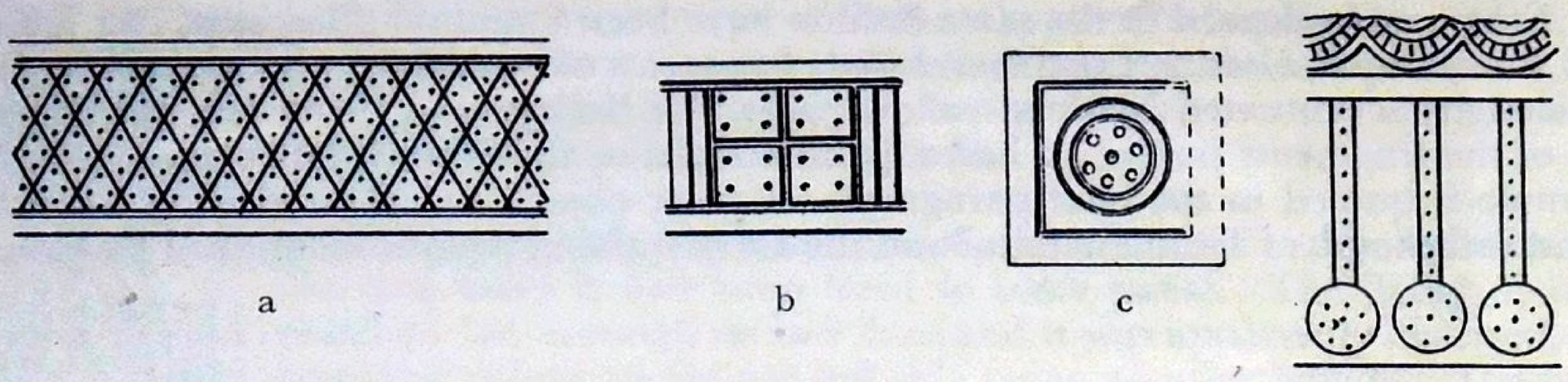


Fig. 14

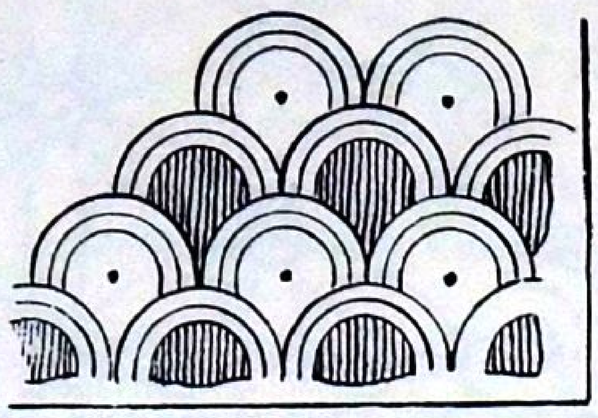


Fig. 15

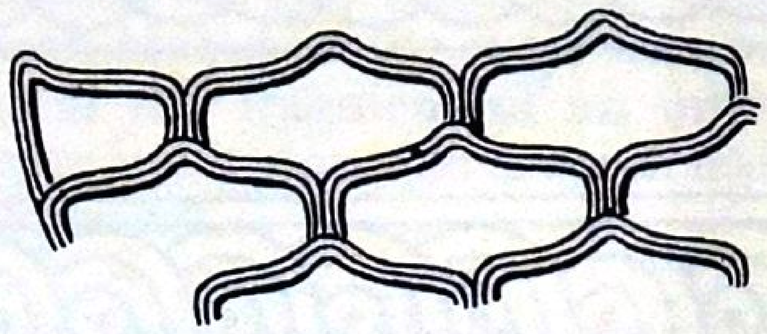


Fig. 16

14 b, c). Fig. 14 d shows what may be a variant of these, a row of dotted disks hanging to dotted bands with a line of circles or semicircles above.

Fig. 15 shows a pattern of scales: it comes from a plaque in pierced work and the scales are alternately open and solid, the solid ones having dots on them. Found in Qk.

Fig. 16 was reconstructed from a number of small fragments. They came from a conventional representation of waves or mountains like the conventional Chinese cloud pattern. The convention was common to Aegean, Phoenician and Assyrian art.

PLATE XXII. A CAPITAL, &c.

1, 1a. Photograph and reconstruction of the fragments of an ivory capital, found in Qk. The capital is of the same form as the stone capitals found at Samaria and Megiddo, except that the triangle from which the volutes spring is indicated by double lines instead of single ones. The ivory capital if complete would have measured 18 cm. across and though we do not know the proportion of the capital to the shaft at this period it must have formed part of a large composition. We have a note of similar volutes in the Nimrud collection measuring 12 cm. across.

2, 2a. Front and back views of an asp or uraeus carved in the round, found in Qk. Rows of uraei often appear on the crowning member of a wall or door or a piece of furniture, and this was probably one of a series. The uraeus at Samaria has been discussed on p. 30.

3. A large fragment of unworked ivory which was identified as part of a tusk at South Kensington: it measured 10.3 cm. long and 5.3 cm. in diameter at the thickest point. It might obviously either be a piece brought to Samaria to be carved or part of an ivory store collected by Ahab. Other fragments like this were found, all in Qc. and all more or less burnt.

PLATE XXIII. DAISIES, KNOPS AND CONSTRUCTIONAL DETAILS

1. Three carved whorls. A few more of these were found, all in Qc, and they appear to have been stuck on as the decorative heads or covers of constructional studs: the hole in the middle was not completely bored through in all so they are not likely to have been spindle whorls. The fragment second from above is part of a daisy with rounded petals—a unique example. A whorl like these was found by the Harvard Expedition.[1]

2. Eleven daisies or fragments of daisies, selected from a much larger number, again all found in Qc All have holes in the back for the insertion of an ivory peg, and one peg may be seen still in place in the daisy at the right hand bottom corner. Some of the daisies have eight petals, others twelve, and the surface of the petals is variously treated: in some they are grooved like the folds of the kilt on Pl. v, 1.

Two similar daisies are published by Layard (Pl. 90, 19, 20) and we have a note of a similar daisy in the British Museum collection, N.C. 204, possibly found by Loftus.

3. Four plain hemispherical knops. A large number of these also were found, including a few in Qk. They too had holes bored in the bottom and served the same purpose. An example of this type also was noted in the Loftus (?) collection (N.D. 315). Can these be like the knops mentioned in the description of Solomon's " sea " (1 Kings, vii, 24)?

4. Three ivory studs with small heads for use in fixing plaques where a head as large as the daisies or knops would have been unsuitable.

5. A fragment of ivory with a peg in place.

6. Fragments showing the scoring and nicking on the reverse side of plaques. Some of the marks may have been made intentionally to key the ivory to a bituminous bedding. (Several lumps of bitumen were found.) Similar marks occur on ivories in the Nimrud collection.

A large number of plain circular disks of thin ivory were found: some of them at one time had been covered with gold foil: these were decorative pieces. There was also a quantity of plain polished ivory: much of it was in the form of long strips scored on the back like the pieces figured on our plate: the longest of the plain strips was a panel broken at one end which still measured 31 cms. by 3.4. The larger pieces were thin and had probably been glued in place: a number of smaller pieces which were rather thicker had peg holes in them. The total amount of plain polished ivory of all kinds was probably greater than the amount of carved ivory.

[1] H. E. Text, p. 374.

PLATE XXIV AND FRONTISPIECE 2. INSETS AND GOLD LEAF

Many coloured insets and a few fragments of gold leaf are shown on this plate and twelve insets are shown in colour on the Frontispiece 2. Some of the insets are from plaques in relief like those on pls. i–iii, others from the class shown on pls. xiv, xv.

Gold leaf was used in various ways on plaques of all descriptions. It was used, for example, to cover plain surfaces: a fragment of a border of cusps (No. 1846) was found completely covered with gold leaf, and traces of gold were found on the reserved parts of the field of the hieroglyph piece (pl. xiii i). Secondly, it was cut into shapes and laid on a plain surface to make a simple pattern of rhombs or squares. Thirdly, it was laid over raised details like the ribbed outline of wings and leaves on the plaques in relief. It was also found stuck on glass insets. Examples of the last use are shown on pl. xxiv, No. 1.

FRONTISPIECE 2

1 2 3 4 5 6 7 8

9 10 11 12

1. Lotus petal in blue glass. For petals found in place see pls. i and xv. Several other fragments were found which may have been from lotus petals.

2. Triangle in green glass, imperfect. Compare No. 6 and others on pl. xxiv. 11. Seventeen were found complete or nearly complete, one much smaller than the rest, as well as fragments of three others. Most of them had a raised centre. None were in place and there is no indication how they were used.

3. Papyrus or lotus head in blue glass. The glass is thick and rounded on the surface. Three similar were found. Compare the lotus and papyrus patterns on pl. xv.

4. Human leg in red glass greenish on surface. One somewhat similar in a pale bluish green glass. Both are rounded on the surface and probably from some inlaid figure similar to but slightly larger than those shown on pl. xiv.

5. Daisy inset, square, in dark blue glass with a six-petalled daisy in white at the centre. Seven in all of these daisy insets were found, two in very dark blue, and five in a lighter blue glass, besides fragments of others. See pl. xxiv, 2. All were square; three of the daisies had a white dot in the centre, four had none. Examination of one of the broken pieces showed that the petals of the daisy were separate blue glass drops of the same colour as the field in which they were set with a white paste laid on the surface of the petal.

Similar daisies were found at Arslan Tash, with blue glass mounts outside the squares, and in two cases the whole piece was set in a bronze frame. We had no mounts or frames to fit these daisies, but some fragments of green glass squares of smaller size were found, empty in the middle, and a small triangular frame in bronze with a composition back. It is possible that our daisies were also framed, but there is no evidence to show how they were used, whether they were set in ivory or wood. See *A.T.*, pl. xlvii, figs. 113–117, and p. 138.

6. Triangle in green glass, perfect: compare 2.

7. Round blue glass inset, like a bead but with a white paste centre.

8 Part of a long inset in blue glass, broken at one end. Many pieces near this in shape were found; some probably from wings (see pl. iii, 1; vii, 9), others perhaps from decorated head dresses, or other details (see i, 3; iii, 1) or as a background decoration like the piece found in position on the side of the Horus figure, pl. i, fig. 3.

9. Scale in blue glass. Three similar found: compare the gold and glass scales on pl. xxiv, 1.

10. Circular daisy inset in blue glass; the daisy has six petals and centre in white. The glass is 2 mm. thick and the white filling, unlike that of the square daisy inset, runs right through it and is visible at the back. One other similar.

11. Eye (?) inset in three colours, the outer surround of a dark brown paste, the inner of dark blue glass, and the centre of white paste. One other similar, see pl. xxiv, 2; two or three fragments of others were found.

12. Flower petal, blue glass. Three similar and several fragments near them in shape; they may have been used in daisies or rosettes.

PLATE XXIV

1. Fragments of gold leaf and mounts.
Above: gold leaf found in place on an ivory disk; a fragment of gold leaf, circular.
Centre: six scales in gold leaf.
R. and L.: two scales in decayed white glass above, two gold scales below; the gold scales were found mounted on the glass above. Ten glass scales were found as well as fragments of others. They were all in the same whitish glass, much decayed; one, slightly better preserved, looked as if it might have been originally a very pale green. An oval and a square piece were also seen in the same kind of glass.

2. Insets, miscellaneous.

a	*b*	*c*	*d*	*e*	*f*
g	*h*	*i*	*j*	*k*	*l*

(For discussion of daisy insets, Nos. *a*, *b*, *c*, *e*, and *g*, see on Frontispiece No. 5; for triangles, *f*, *i*, *j*, see Frontispiece Nos. 2 and 6; for eyes, *k*, *l*, see Frontispiece No. 11).
a. Daisy inset in blue glass, petals in white paste.
b. Daisy inset in dark blue glass, petals in white paste, centre broken away.
c. Daisy inset in blue glass, petals and centre in white paste.
d. Square inset, broken, in greenish glass, with bird in black and white. The surface is much decayed. See restoration drawing, 3.
e. Part of a daisy inset in blue glass with petals in white.
f. Triangle in green glass, imperfect.

g. Fragment from daisy inset in blue glass, petals white.
h. Rod in green glass with red spot visible at centre. Ten of these were recorded, besides many small pieces of others. The glass was no doubt originally a brilliant red, see Appendix 2. Several other pieces of small rods were found in a green glass whitish in parts, these may have been originally all green.
i. Triangle in green glass.
j. Triangle in greenish glass, imperfect.
k, *l*. Eyes ? in brown paste, dark blue glass, and white paste centre.

3. Enlargement of No. 2, *d*.

4. Drawing of an inset in blue glass with volutes and lily inlaid in white. Portion preserved 5 mm. by 8 mm. Work very minute. Drawing 2 : 1.

5. Ivory disk with green glass centre.

6. Bunch of grapes in blue glass on a bronze stem. Another tiny bunch in purplish blue glass was found mounted on a longer bronze stem, a third in blue glass and some loose fragments of others.

7. Sun and moon inset of ivory surrounded by a thin gold ring. A blue glass inset fills the crescent, the circle is empty. Two smaller insets were found, whitish, inset in a bronze tray with a gold rim, crescent and circle inlaid in blue glass, pale and decayed, diam. 6 mm.

Discoveries at Dura Europos suggest that the moon and sun in this position forms the emblem of Hadad, the Syrian Thunder god.[1]

8. Drawing of square in green glass with square of white paste let in and blue glass centre. 8 mm. by 8 mm. by 2 mm. thick.

9. Drawing of rhomb in glass greenish on surface, bright red at break, no doubt originally red, inlaid white paste and blue glass centre. Much decayed. 1 cm. by 9 mm.

10. Drawing of a square blue glass frame with a circle in white paste and blue glass centre. Decayed and broken. Probable original size, 7 mm. by 7 mm.

11. Blue glass insets.

a *b* *c* *d* *e* *f* *g* *h* *i* *j* *k* *l* *m*

a. Curved piece, broken. Several curved pieces were found, no doubt from pattern details but not possible to identify.

[1] *Excavations at Dura Europos*, Third Season, xix, 1. For three examples from Italy (Bizenzio, Palestrina, and Vulci), see Flinders Petrie, *Decorative Patterns of the Ancient World*, pl. xxvii.

b, *c*. Long insets. The shape suggests that they came from wings, such as the wings of Isis and Nephthys on pl. iii, 1, or the wings of sphinxes. Three others were found besides several broken pieces. One of the only two fragments of inlay in lapis lazuli found by us was of this shape.

Similar blue insets are in position in the feathering of the bird headed griffins in the Layard medallion. One loose blue inset, also possibly a wing piece, from the Layard collection measures 7.5 cm. long.

d. Lock of hair? This and a few other fragments of somewhat similar insets may have come from plaques of the Infant Horus.

e. Curved inset. This and other thin threads of glass in various shapes were used probably to fill narrow troughs in the ivories, like the still finer glass threads inlaid in the lines between the hieroglyphs, pl. xiii, 1.

f. Rhomb or diamond, with shallow ribbing on the rounded surface. One similar, in blue glass, three in greenish to whitish glass, decayed.

g. Horn of a cow? One other similar.

(Insets h–m appear to come from ivories like those on pl. xiv.)

h. Part of a body; surface rounded.

i. Part of an arm or knee, surface rounded.

j. Part of an arm showing incised lines; surface rounded.

k. Piece showing incised lines; surface rounded.

l. Hair or decoration?

m. Leg of an animal; surface rounded.

Besides the pieces here described some were found so broken as to indicate no shape. Some of these were thin and flat, the largest measured 2.5 cm. by 1.5 cm.

12. Drawing of asp, crowned with disk and horns, in blue glass, much decayed. Thickness varies, about 5 mm. Height 4 cm. A fragment is broken away at the shoulder This. piece may have been an inset, or an amulet, but there is no trace of a hole for suspension.

PLATE XXV. LETTERS

1. ALEPH. Base of palm, brown; hole in tenon. Letter on back.

2. BETH. Fragment of plaque, yellowish. Letter on back.

3. GIMEL. Small plaque 2 mm. thick, white, discoloured. Letters in corner.

4. DALETH. Fragment of border from plaque. Letter on tenon above the moulding.

5. WAW. Fragment of plaque, white.

6. ZAYIN. Base of palm, white; hole pierced through tenon. Letter on back.

7. ZAYIN. Base of palm, large, black. Letter on back.

8. HETH. Small fragment of a plaque, very thin, black. From Qk.

9. TETH. Base of palm, white, hole pierced below. Letter on back.

10. YOD. Base of palm, black; trace of hole below. Letter on back.

11. NUN. Fragment of thin plaque, white.

12. SAMEKH. Narrow strip, blackish. Letter on back, partly broken away. From Qk.

13. PE. Small fragment, black.

14. RESH. Base of palm, black. Hole pierced through tenon. Letter on back.

15. TAW. Piece from plaque, much charred.

16. ALEPH, TAW. Fragment of a thin strip, black. Letters on the polished front, not the back, which is deeply scored. Probably from an inscription.

17. TETH. Narrow strip with pattern of daisies incised on front. Letter and mark on back.

18. WAW. Wing from a pierced plaque, brown. On the front this wing has remains of inlay in red. The letter and another letter or sign are on the back.

Other letters which are included in fig. 1 occurred on the following ivories:

HE. Under border of a fragment from a pierced plaque with remains of hoofs of cows. With part of another letter or sign. From Qn.

ZAYIN. Base of palm, black. Letters on back, partly broken away.

ZAYIN? See throned figure, pl. xi, 1. Letter cut deeply on tenon above. From Qk.

AYIN. Base of palm, black. Letter on back. From Qk.

AYIN. Small strip, white. From Qk.

TAW. On tenon from a plaque. From Qh.

TAW. On back of Lion and Bull plaque, see pl. x, 1.

The letter BETH occurs in a second form on pl. xx, 1.

4. CONCLUSIONS

Most of the ivories from Samaria have been desperately broken but the collection when supplemented by the contemporary carvings from Tell Nimrud and Arslan Tash illustrates the salient characteristics of the period. No other finds have told us so much about the art of the Israelite Monarchy. Our results may be briefly recapitulated before we touch on the circumstances which conditioned this art.

The collection of ivories is astonishingly uniform. All the plaques with one exception (pl. xi, 1) look as if they might have been carved in the same street of the bazaar: in whatever technique they worked, all the craftsmen handled ivory in the same way. Some may have specialized in one branch, some in another, and they were not all equally dexterous or careful, but all followed the same tradition: the volutes on the inlaid Horus plaque (pl. i, 1), for example, are outlined with raised ribbing in exactly the same way as the fronds of the palms which are in open work (pls. xviii–xx) and as the flowers and buds of the lotus chains which are in solid relief (pl. xxi): the grooving on the kilt of the sphinx (v, 1) is like the grooving on the daisies in the round (xxiii, 2). The most notable differences, those between the features of the figures on the polychrome plaques and the features, say, of the sphinxes, are due to differences in the models which were copied. In the Layard collection from Nimrud one meets the same differences and resemblances both in the ivories and in some at least of the bronze bowls.

It is significant that in our ivories there is no sign of Assyrian influence.[1] Not a trace of the long regimented processions of eunuchs and warriors, the hunting scenes and battles, the naïve illustrations of factual life which cover the walls of Assyrian palaces of the period. The contrast between Assyrian art and the art of the ivories is most telling when we compare treatments of similar subjects in the two countries. Compare for example their representations of winged genii: in Syria as in Egypt they are gracious beings, whether standing or squatting, their wings outstretched in front in an attitude of worship or protection, their limbs soft and rounded; in Assyria they are powerful daemons, heavily muscled, stalking forward on some errand, the wings hanging behind ready to spread in flight. Or the lions: the Syrian lions are tame creatures with little of the conventional lion except the mane; the Assyrian lion is the fierce king of beasts with a shaggy belly and a mane which runs the full length of the back. Tree and lotus patterns are equally different: in Assyria the sacred tree has a marvellous out-rigging of palmettes tied with ribbons all round the stem, the lotus petals are spiky and sharp; in Syria the trees are fantastic enough but they are self-contained, and the lotus petals are rather stumpy.

The influence of Egypt on the other hand is all-pervasive. Many of the subjects are

[1] See Watzinger, *Denkmäler Palästinas*, I, p. 114, "Sie warnen uns zugleich die assyrischen Einflüsse innerhalb der Architektur und Kunst des 10. und 9. Jahrh. zu überschätzen; es scheint vielmehr, dass diese sich erst im weiteren Verlauf des 8. und im 7. Jahrh. stärker durchgesetzt haben.

definitely copied from Egyptian models, though there is not one of the plaques which could be mistaken for an Egyptian original. The figures are tricked out with Egyptian accoutrements, wigs and double crowns, royal kilts and necklaces. The background is filled with strange growths of lotus and papyrus which may not be like anything that flourished in Egypt, but are certainly more exotic to Syria. The date palm which is the favourite motive of the ivory workers is as rare in Syria as it is common in Egypt. Many of the decorative patterns are copied from the decorations which Egyptians painted on the walls of their houses. An alphabetic script was in use for all practical purposes, but it pleased virtuosos to transliterate their names in hieroglyphics.

On the technical side the same influences were paramount. Fine cloisonné work had been executed in Egypt since the days of the Old Kingdom, and it was prized in Byblos more than a thousand years before the date of the ivories. The inlaying of whole figures delicately modelled in a composition of some sort was another favourite Egyptian craft. On those plaques which are most evidently based on Egyptian originals the representation of details like the texture of linen on the ivories follows Egyptian conventions exactly. Common Egyptian errors also, like the transposition of the hands so that the thumbs are on the wrong side of the fingers, reappear on the ivories, though they are, we think, unknown on the reliefs of North Syria.

The Arslan Tash ivories are rather different: the polychrome class, which is the class where the Egyptian elements are least diluted in the other collections, is entirely wanting at Arslan Tash, and the native, Syrian, elements make the stronger showing. The editors sum up in the following words: "Le répertoire où les ivoiriers ont puisé est en grande partie emprunté à l'Égypte. Mais l'influence égyptienne, pour être la plus apparente, n'est peut-être pas la plus profonde. Le style est foncièrement asiatique."[1]

The finds from Samaria support this judgment. As we have already seen, the features of some of the sphinxes and other figures which are not copied so closely from Egyptian models as the figures on the polychrome plaques, are definitely Syrian in cast: the limbs too are plumper, less svelte, than those which were most admired in Egypt. Some of the head-dresses are definitely Syrian and most of the garments also are cut in the old Syrian fashion and decorated with Syrian borders.[2] A few patterns are also non-Egyptian. And if there were any doubt about their land of origin, the letters on the backs of the ivories might be regarded as decisive: the fact that the carvers used letters from the Phoenician alphabet suggests strongly that they were natives of Syria and that the alphabet was familiar both to carvers and to joiners. Where they worked is another matter. The find at Samaria of some unworked ivory and some half-finished pieces may indicate that ivory workers were domiciled there for some time at least. Ahab was in alliance with Hama, Damascus and the cities of Phoenicia: the ivory workers may have come from any of these. All that we can say for certain is that they came from a region which was exposed to strong Egyptian influences.

Waves of Egyptian influence broke over Syria at various times. At first glance one might be disposed to connect this wave with the story of Wenamon: "Amon equips all lands, said Zakarbaal king of Byblos to Wenamon, he equips them, having first equipped the land of Egypt whence thou camest. For craftsmanship came forth from it to reach my place of abode; and teaching came forth from it to reach my place of abode."[3] The double reference to craftsmanship and teaching, the latter being interpreted as subject-matter,

[1] *A.T.*, p. 140.
[2] See pls. iv, 1; x, 3, 4; xi, 1; xii, 1, 9, 10, 14, 16, 17; xiv, 1.
[3] See Breasted, *A history of Egypt*, p. 513 f. and in *Studies presented to F.Ll. Griffith*, p. 267.

seems apposite to the ivories. But in point of fact these words were spoken two hundred years before the time of Ahab, and if Zakarbaal really used them, he was probably talking politely with his tongue in his cheek, as an Indian politician might talk about Western civilization. About 1100 when they are supposed to have been uttered there was very little truth in them: Egyptian influence was at its nadir. Two collections of ivories which date from the thirteenth or twelfth century have come to light recently and so far as we can judge from the selections that have been published[1] there are the barest hints, mere survivals, of Egyptian influence in either. The Egyptian influence on the ivories of Samaria and Nimrud marks the rise of a new wave.

This wave started apparently some time after the middle of the tenth century with the rise of the 22nd dynasty—Sheshonk I, the founder of this dynasty, reigned from about 945 to 924—and much of its strength was probably spent before the middle of the next century, say about 850 B.C. It runs, that is, from the more or less legendary days of Solomon to the end of the reign of Ahab. All this time Israel was in close contact both with Tyre and Egypt. Solomon recruited his skilled artificers from Phoenicia: he married a daughter of Pharaoh and received the city of Gezer as her dowry: he built a house for the daughter of Pharaoh in Jerusalem. In the next reign Jeroboam I took refuge for a time in Egypt and also married an Egyptian princess. Ahab too made a political marriage, wedding Jezebel the Phoenician princess, and Egypt sent a contingent to the great anti-Assyrian confederation of which Ahab was one of the most powerful members. More evidence about the relations between Egypt and Syria during this period has been discovered in recent years. A cartouche of Sheshonk I, the Shishak of the Bible, has been found on the fragment of a stele at Megiddo,[2] and a statue of him was offered to the goddess of Byblos by a king of Byblos named Abibaal.[3] Large buildings which have been discovered at two places in the south of Palestine, Tell Jemmeh and Tell Fari'a, may perhaps be attributed to him, though the evidence is solely stratigraphic.[4] Fragments of at least one statue which was dedicated to his successor, Osorkon I (reigned about 924–895), have been found at Byblos, with an inscription with the name of king Elibaal.[5] The cartouche of Osorkon II (reigned about 874–853) was found at Samaria carved on the piece of alabaster which has been already mentioned. These random finds suggest that the 22nd dynasty counted for much more in Syria than may have been once thought, and that the long list of conquered towns carved by Sheshonk on the walls of Karnak represents a real revival of Egyptian power. Breasted's remarks about Solomon's father-in-law are significant— "The Pharaoh with whom Solomon had to deal, a Pharaoh who captured and burned strong cities in Palestine like Gezer, cannot have been one of the degenerate kings at the close of the twenty-first Dynasty, but an aggressive ruler who resumed Egypt's control in Palestine; and we know of no other king at this time who answers this description save Sheshonk I."[6]

[1] One comes from Megiddo: the finest pieces have been published by the discoverer, Gordon Loud, in *I.L.N.*, October 23, 1937. The other from an unknown site in N. Syria, acquired by the Pratt family, is mostly in the Metropolitan Museum, New York: selections are published by M. S. Dimand in the *Bulletin of the Museum*, vol. 31, p. 221; vol. 32, p. 88; vol. 33, p. 42.

[2] *O.I.C.* No. 4, 1929, p. 13.

[3] See Dussaud in *Syria*, V, p. 145, and Montet, p. 54, where there are references to the previous literature.

[4] See Petrie, *Gerar*, p. 6; idem, *Beth-pelet I*, p. 20.

[5] See Dussaud, *Syria*, VI, p. 101, and Montet, p. 49.

[6] *History of Egypt*, p. 529.

The art which was put across by the Sheshonks and Osorkons was the newer art which began with the 21st Egyptian dynasty (1090–945 B.C.). The closest analogies we have found to the carvings on the ivories come from walls in the Khons temple at Karnak which were decorated in the time of that dynasty. It is this art and not the older art of Egypt and Crete and Mesopotamia which is reflected in the ivories. Egypt had suffered less than other Mediterranean countries from the invasions of the barbarians, and the comparatively second-rate art of the 21st and 22nd dynasties appealed to the Syrians as something much greater than it was. The movement may be compared from this standpoint with the wave of classicism which swept over Western Europe in the 17th and 18th centuries, but the ivory workers were miniaturists and their works may remind some critics more of illuminated manuscripts, eastern and western: gold and jewel-like colouring and microscopic detail are common to both.

The subject-matter is almost purely religious or decorative. The religious subjects in all three collections belong to the some narrow circle—the child Horus on the lotus flower, the winged creatures (cherubim) both in human and in sphinx form, the sacred tree of life, the woman at the window, a few sacred animals, lions, oxen, deer, and battles perhaps of different elemental powers. We are not certain that there were any genre scenes from daily life, or narratives of men hunting or fighting together, though they were popular enough in later Phoenician art.[1] And we note also that the greater national gods of Egypt, Amun of Thebes, Re of Heliopolis, Ptah of Memphis, did not appeal to the ivory workers, nor did the local Egyptian animal figures with the exception of one or two falcon-headed gods and the ibis-headed Thoth.

The small circle of deities represented shows that the figures in question were not adopted because the Syrians were converted to the cults they represented in Egypt, where in point of fact the cults were not quite of the first rank, but because the Syrians recognized the figures as adequate embodiments of their own religious ideas. The Egyptian trappings meant no more than the pseudo-classical draperies once thrown over Gospel characters in the West or the Greek paraphernalia which the Etruscans took over: they were a "superficial dressing". The double crown, for example, was not worn because it was the crown of Upper and Lower Egypt, but because owing to Egyptian prestige it had become for the moment the generic insignia of royalty in this area. The habits of the ruling class and the representational art which they made fashionable were Egyptianized: the stonemasons, the potters, the script and the religion, remained Syrian.

Mr. Barnett, from whom I have borrowed some phrases in the preceding paragraph,[2] has made some valuable additions to the short list of identifications which have been proposed by earlier scholars—the most important of these were the equation of the child Horus with Adonis-Mut-Eshmun and that of the Woman at the Window with Ashtart—but he has left the Israelites in the cold. Yet Solomon's temple was decorated in the same brilliant style as the ivories with " gold fitted on the graven work": the capitals, though it is impossible to reconstruct them from the descriptions in the book of Kings, appear to have been elaborations of the type of capital which has been discussed above: the walls were covered in the same repetitious manner with figures from the same repertory—colossal cherubim in the inner shrine of the temple, cherubim, palm trees and open

[1] Compare for example the " Tale of two cities" on the bowl from Amathus to quote the happy name given it by J. L. Myres (*J.H.S.*, 1933, 29) or the "Hunter's day" on another Cyprus bowl first interpreted by Clermont-Ganneau.

[2] See *Iraq*, l.c.s., p. 200–210.

flowers, on the doors and walls of the house within and without, oxen under the "sea", lions, oxen and cherubim on the bases of the lavers. These, of course, were made by Phoenicians, but they were made for the house of the Lord to the order of a king of Israel and Judah. The ivories at Samaria were carved similarly to the order of a king of Israel. Some of the figures on the latter were like those which were carved on the house of the Lord in Jerusalem:[1] others were like those on the other shrines which Solomon is said to have built. Jewish tradition represents Solomon and Ahab as backsliders but similar breaches of the "Mosaic" law were committed by those who decorated the ark and by the priestly Ezekiel.[2] At this time Jahwism was not hostile to representational art.

This art is admittedly derivative, but it is none the less genuine. It is the work of the people to whom we owe our alphabet and many of our religious conceptions. It cannot be dismissed like later Phoenician art as an *aegyptisch-assyrische Mischstil* nor its creators as "dupeurs habiles qui ont mystifié la science de la XIXme. siècle". We might as well condemn Umayyad art because it owed some features to Hellenistic traditions and shared others with contemporary work in Egypt. Like so much classicist art, the Hebrew-Phoenician art of this period was fluent and sophisticated, but it was unexpectedly full of life and staying power. It contributed some motives to the nascent archaic art of the Greek islands: other motives, such as the palmette tree and the winged guardian angel, lasted on into the Christian era.

[1] The difference in scale is negligible for in these countries small objects were regularly decorated with the same subjects as the walls of temples and gateways: the figure of Pharaoh, for example, on pl. xiv, 1, occurs in colossal size on many Egyptian façades, and the borders of the robes and the quivers of Assyrian kings are ornamented with winged bulls like those at the palace gates (Layard, pls. 5, 8, 9, 43, ff.): the fragmentary ivory capital on pl. xxi, 1, is a faithful copy of the stone capitals found on the site.

[2] See references on pp. 18, 34. And was Amos also a backslider? "It is curious to note", writes Glover, "that he is silent about the 'calves' worshipped, or at least symbolizing the god, at Samaria, which the historians of a later date constantly denounced" (*The Ancient World*, p. 207.)

APPENDIX I. THE ORIGIN OF THE IVORY

The origin of the ivory which has been found at Samaria and elsewhere must be left in suspense. Elephants were fairly numerous in Syria during the second millennium B.C. and ivory was plentiful for some time later, but it does not follow that all or most of it was of local origin: according to the book of Kings (I, x, 22) the navy of Tarshish came once in three years, and much ivory may have been brought from overseas.

Evidence about "The elephant in Syria and Palestine" has been collected by Mr. Alan Rowe in a short note which he contributed to a Jerusalem periodical called *Lines of Communication*. He has kindly permitted us to reprint the following extracts from this paper.

"Elephants are frequently referred to in the old Egyptian records, on which we have mainly to rely for evidence as to their presence in early historical times in our own part of the Near East. Thus Tuthmosis II of the Eighteenth Dynasty lists the animal among certain gifts made to him from Upper Retenu, as northern Syria was then known, while an official of Tuthmosis III (1501–1447 B.C.) named Amenemhab mentions that his royal master went to Niy, a district on the western side of the Upper Euphrates, where he slaughtered many elephants. The official says: "I beheld an excellent deed which the King did in Niy. He hunted one hundred and twenty elephants for the sake of their tusks. I engaged the largest which was among them, which fought against his majesty; I cut off his trunk (actually referred to in the text as his 'hand') while he was alive, in the presence of his majesty, while I stood in the water between two rocks. Then my lord rewarded me with gold and changes of clothing" (after Breasted, *Ancient Records*, II § 588). A North Syrian elephant is actually depicted in the tomb of Rekhmire, a vizier of Tuthmosis III; while near the animal is shown a bearded Syrian carrying two large tusks from an elephant killed in the hunt. In the Canaanite temple of Amenophis III (1411–1375 B.C.) at Beisan, the Biblical Beth-shan, the excavators of The University Museum, Philadelphia, found early in 1928 a cylindrical cult-object surmounted by the head of an elephant. This object, now in the Palestine Museum, is one of the most remarkable of all the sacred Canaanite relics unearthed at Beisan; it may just possibly have been connected with the cult of the god Seth or Sutekh, who had associated with him other animals, such as the hippopotamus, ass, pig, and so on. The eyes and trunk of the elephant are very realistically indicated (see *The Museum Journal*, June, 1928, p. 155). A Hittite seal from the same temple shows the figures of two gods, an elephant and an ass, and is quite unique. Elephants were also known in the Upper Euphrates in the time of the Assyrian king Tiglath-Pileser I (c. 1115 B.C.); while the figure of an elephant is represented on the obelisk of Shalmaneser III, the Assyrian monarch who defeated Jehu the Israelite, in the course of his expedition against Hazael of Damascus, in 842 B.C. The elephants used by the Ptolemies in their various wars were from Africa; the Syrian elephant (perhaps allied to the Indian species) had become extinct many centuries before the Ptolemaic period.

Biblical references. Although the elephant itself is not named in the Old Testament, its ivory is surely that referred to in the following passages: 1 Kings x, 18, 22, and xxii, 39; 2 Chron. ix, 17, 21; Ps. xiv, 8; Song v, 14, and vii, 4; Ezek. xxvii, 15; Amos iii, 15, and vi, 4. Couches of ivory, such as are mentioned in the last reference, together with seats of the same material, tusks and hides of elephants, were, according to a cuneiform inscription in the British Museum, included in the tribute paid by Hezekiah of Judah to Sennacherib of Assyria, in 701 B.C. Finally, in Rev. xviii, 12, we read of vessels of ivory (*elephantinos*)"[1].

How abundant ivory was we learn partly from the sites which have been excavated, partly from the records, Assyrian and other: here are a few references taken from Olmstead's *History of Assyria.*[2]

In 885 the prince of Anat on the Euphrates thought it wise to meet Tukultu Urta "with gifts of precious metals, bricks of gold, a throne of ivory, tables of the same" (p. 79).

Ashurnasirpal (885–860) took "couches of ivory overlaid with gold" from Amadi on the western Tigris (p. 91). Ahuni of Adini gave the same king "elephant tusks and ivory thrones overlaid with gold and silver" (p. 94): Carchemish gave " beds, thrones, tables of ebony, which must have been imported clear from the Sudan. They were inlaid with ivory . . ." (p. 94). "All Phoenicia" sent gifts including "box, ebony and ivory and elephants" (p. 95).

Shalmaneser III (860–824) received a "tray filled with ivories from Dakkuru" (p. 123) and a "heavy tribute of metals and ivory" from Hattina (p. 144).

Adadnarari's loot from Damascus has been mentioned above: Tiglathpileser III received among other things elephant hides and ivory from various places including Damascus and Tyre (p. 183). Sargon II (722–705) took "sceptres of ivory" in his campaign against Haldia in 714 and from the temple of the goddess Bagbartu "her ivory bed ornamented with gold and precious stones, ivory wands, poignards of ebony and tables of box" (p. 240). The tribute paid by Hezekiah to Sennacherib has been already described by Mr. Rowe.

We submitted some good specimens of plain ivory from Samaria to Professor Richard Garbe, A.R.A., Professor of Sculpture in the Royal College of Art and an artist who has worked in ivory a great deal. He is positive that, so far as he could tell, the ivory was African, and his opinion was endorsed by an ivory merchant of great experience. Both based their view upon the grain of the ivory which, they said, was very different from the grain of Indian ivory. If they are right, we shall have to conclude that the ivory used at Samaria was imported by Phoenician merchants from the Sudan, unless the Syrian ivory was more like African ivory than Indian. We must have more evidence about the nature of Syrian ivory before we can settle the question.

[1] From *Lines of Communication*, August, 1932.

[2] The hunting expedition of Tiglathpileser I, mentioned on p. 1, is described by Olmstead, *op. cit.*, p. 64.

APPENDIX II. THE CHARACTER OF THE INSETS

Apart from two pieces of lapis lazuli, most of the insets appeared to be of glass. Both the insets and the pastes, which were also used, varied greatly in colour. Blues predominated: some, those on Frontispiece 2 for example, were deep ultramarine[1]: others were paler and duller: others were so deep that they ought perhaps to be called black: some of the pastes were turquoise. Greens too were common, but some of them when broken showed a brilliant red at the heart: one of the best preserved, for instance, the leg on the Frontispiece, had only a thin film of green over a red body. Some of the pastes were a brown red, some a chalky white, yellows were rarer.

Specimens of the insets were submitted to Mr. Horace Beck and of the pastes to Dr. Plenderleith as long ago as 1932. More recently, as the blues appeared to be of peculiar interest, partly from their resemblance to the insets in the Nimrud ivories, partly from the suspicion that the colouring matter came from cobalt, some other specimens have been examined by Dr. P. D. Ritchie, late of the Courtauld Institute, and by Dr. Plenderleith of the British Museum. The results of all these examinations follow.

1. REPORT ON PIECES OF INLAY FROM SAMARIA, by Horace C. Beck.[2]

There are several different materials used.

Number 726 is a piece of lapis lazuli.

Among the blue specimens were several pieces of black now separated into another bottle, number 729. They have a specific gravity between 2.45 and 2.5. I do not know what this material is. In some ways it suggests bitumen, but it does not polarize so much as specimens of bitumen from Mesopotamia, nor does it dissolve at all in boiling benzine. It is not appreciably affected by hydrochloric acid. When the acid in which it has been boiled in evaporated, it deposits a few small crystals, but these are probably a salt from the sand it has been buried in. As it does not polarize it may be vitreous material which is partly broken down.

Another fragment (number 729) is highly iridescent and has a somewhat blue appearance. This is a glass which has almost corroded away. A microscopic examination shows that the corroded part although colourless over the greater part, has certain very opaque black portions very suggestive of the previous specimen.

The remaining pieces of blue (number 731) both rod and other fragments are very similar in appearance to glass from the palace of Amenhotep III.

I do not know what the colouring matter is. In both cases the colour is held as small separate particles of reasonable size, but whilst the Egyptian particles polarize extensively those from Samaria scarcely polarize at all. The specific gravity of these specimens is approximately 2.5.

[1] The nearest shade on the Unesma Scale appears to be *Ultramarine blue 13 pg.*

[2] Published *P.E.F.Q.S.* Jan., 1933, pp. 24, 25.

The green glass is of two totally different varieties. One (number 724) is an oblong cylinder with concentric lines round the cross section. This has a specific gravity of 2.7. The colour of this glass is due to corrosion. Originally it was a brilliant red glass coloured with cuprous oxide. This material has a tendency to change to green in the course of time. Specimens in which there is a coating of green round the red of a thickness of from one to two millimetres are not uncommon in the Mediterranean and are dated from the ninth to seventh centuries B.C. Comparatively large pieces in which the change has gone right through the specimen are found in a fragmentary condition at Ur, but they are not accurately dated.

The fragment in the shape of a truncated triangle (number 725) was also examined. I am not certain about this specimen, but I think it is of the same type as the last. The specific gravity is 2.45.

Another fragment (number 730) appears to be part of a curved rod, possibly a ring. The specific gravity is decidedly under 2.37. This is a quite different type of glass from the last. The remaining uncorroded green portion of this specimen is quite isotropic, whilst the corroded part appears to be very highly crystalline and polarizes brilliantly. The original colour of this specimen was probably green.

The low specific gravity of all these glasses shows that they were a simple form of glass made without lead.

The differences between the glasses made at different periods is so slight that it is not possible to date by them, but there is nothing about these glasses that is inconsistent with a date of 850 B.C. which you have assigned to the ivories.

In a later note Mr. Beck adds:

The asphalt you have sent is not the same as the black pieces of material among the pieces of inlay.

The black amongst the inlay did not dissolve in boiling benzine and had a specific gravity of 2.45–2.5.

The asphalt you have sent dissolves readily in benzine and has a specific gravity of 1.14. At the same time there is some resemblance between them when examined under the microscope and the inlay may have some infiltration of asphalt in it.

The term bitumen is applied in Mesopotamia to widely different materials. For instance, the inner backing of the lion heads from El Obeid which very much resembles your asphalt has a specific gravity of 1.12. This I take to be practically pure. On the other hand the "bitumen" petals of the decorative flowers of the same date and provenance are almost all quartz grained with an infiltration of bitumen filling the small crevices between. These have a specific gravity of 2.46.

2. COLOURED PASTE.

Specimens of blue and red paste from the troughs of the wing shown on Plate vii, 1, were examined by Dr. Plenderleith. The blue inlay was found to be "Egyptian blue", i.e. powdered frit; the red was found to be iron, an ochre pigment. The preparation of the former is discussed by Laurie in *Proc. Royal Soc.* 1914.89.418, and in Campbell Thompson's *Chemistry of the Ancient Assyrians* (1925).

3. BLUE GLASS. DAISY INSET. EXAMINED BY MR. BECK.

It will be noted that in his report above Mr. Beck gives no opinion as to what the colouring matter of the blue glass may have been. At a later date, he examined some eye-

beads from Samaria, and together with them a daisy inset from the ivory area, white inlay on blue glass. In a report on these made in November, 1934, Mr. Beck described this blue glass as a "cobalt glass". The presence of cobalt was deduced by observing with a small direct-vision spectroscope a cobalt absorption band in the red, a method suggested, Mr. Beck tells us, by Sir Herbert Jackson.

4. BLUE GLASS.

SPECTROGRAPHIC ANALYSIS OF NIMRUD AND SAMARIA GLASSES, BY DR. RITCHIE AND DR. PLENDERLEITH.

Note. The table embodies the work of both Dr. Ritchie and Dr. Plenderleith, but the results printed in italics in Nos. 1–8 *could not be determined by Dr. Ritchie certainly with the means now at his disposal: Nos.* 9 *and* 10 *were examined at the Courtauld Institute by Dr. Ritchie only.*

	No.	Specific Gravity	Na	K	Li	Ca	Ba	Sr	Pb	Sn	Ag	Bi	Au	Cu	Hg	Cd	Zn	Mg	Al	Si	V	Ti	B	P	As	Sb	Ni	Co	Fe	Cr	Mn
NIMRUD	1	2.4	M	T	T	T/M	O	*T*	T	T	T	*O*	*O*	M	O	O	O	T/M	O?	L	T	*O*	T	T	O	T	*O*	*O*	T	T?	T
	2	2.5	M	T	T	T/M	O	*T*	T	T	T	*O*	*T*	M	O	T	O	T/M	O?	L	T	*O*	T	T	O	O	*O*	*O*	T	T?	T
	3	2.6	M	T	T	T/M	O	*T*	T	T	T	*O*	*O*	T/M	O	O	T	T/M	T	L	T	*O*	T	T	O	T/M	*O*	*O*	T	T	T
	4	2.5	M	T	T	M	O	*T*	T/M	T	T	*O*	*T*	T/M	O	T	T	T/M	T/M	L	T	*O*	T	T	O	T/M	*T*	*T*	T/M	T	T
SAMARIA	5	2.3	M	T	T	M	T	*T*	T/M	T	T	*O*	*O*	T	O	O	T	T/M	T	L	T	*O*	T	T	O	T/M	*T*	*O*	T	T	T
	6	2.5	M	T	T	M	O	*O*	M/L	T	T	*O*	*O*	T	O	T	T	T/M	T	L	T	*O*	T	T	T?	T/M	*T*	*O*	T	T	T
	7	2.6	M	T	T	M	O	*O*	M/L	T	T	*O*	*O*	T	O	T	T	T/M	T/M	L	T	*O*	T	T	T?	T/M	*T*	*T*	T	T	T
	8	2.5	M	T	T	T/M	T	*O*	T/M	T	T	*O*	*O*	T	O	T	T	T/M	T	L	T	*O*	T	T	O	T/M	*O*	*O*	T	T	T
	9	—	M	T?	T	T/M	O	O	M	T	T/M	O		T	O		T	T/M	T	L	T	O	T	O	T	T	T	T	T	T	T
	10	—	M	T	T	T/M	O	O	T	T	T	O		T	O		T	T/M	T	L	T	O	T	O	O	T	T	T	T	T	T

The examinations were made by the spectrographic method, and as this method has only very recently been used in archaeological work, Dr. Ritchie has kindly given a brief account of it and of the way in which he has used it for samples of glass and pottery. His account is printed at the end of this Appendix.

The samples of blue glass examined were:

Nimrud. 1. Thick green blue glass, nearly clear.
2. " " " " " "
3. Part of a flat ring, pale blue, slightly violet, opaque.
4. Inset shaped like the "feather" of a wing, N. 123808. Ultramarine blue, only slightly opaque.

Samaria. 5. Fragment, ultramarine blue, pale, opaque.
6. Daisy inset, ultramarine, but on the indigo side.
7. Rod, ultramarine, very dark.
8. Small inset, ultramarine, pale, opaque.
9. (R.1) A roughly hexagonal rod, ultramarine blue.
10. (R.2) A flat sheet, ultramarine blue, paler than 9.

Of these samples it should be noted that Nimrud 1 and 2 are different from the rest in quality and colour, and that Samaria 9 and 10, the first specimens to be examined by Dr. Ritchie, were specially selected from the P.E.F. collection as being typical of the best quality of blue glass insets found.

CONCLUSIONS.

It appears that all the glasses in the above table should be classed as *soda lime* glasses.

Most of the Ancient Egyptian glass which has been studied falls into the category of *soda lime* glass, and recent spectrographic work on the blue glass of the 18th dynasty, which has been carried out by Dr. Ritchie,[1] enables this to be compared with our samples. After studying the whole table Dr. Ritchie now writes: "Summarizing them, I should now say that these glasses are differentiated from the general run of the Egyptian glass I have examined by:

(a) the traces of cadmium in Nos. 2, 4, 6, 7 and 8. I do not think I ever detected cadmium in any other ancient glass.

(b) the relatively large amount of lead in Nos. 6 and 7 (the antimony seems to me to be roughly the same amount in both groups)."

The results of these examinations tally with the conclusions as to their Syrian origin which we have drawn from studying the ivories. The glass of the insets from Samaria and Nimrud (1 and 2 Nimrud are not insets) is of the same general character, but between this glass and the much greater quantity of glass examined by Dr. Ritchie from Egypt there is a great difference. The incidence of cobalt is interesting. In the Egyptian blue glass examined, two groups of indigo to violet glass were held to owe their colour to cobalt and copper modified by manganese: two groups of greenish blue glass contained copper and manganese but no cobalt. In our samples, 4 (Nimrud) and 7, 9, 10 (Samaria) show cobalt as well as copper and manganese and their fine ultramarine colour is due to this combination; 1 and 2 (Nimrud) contain copper and manganese, the copper being in a higher proportion than in any other of the samples, and this no doubt gives them their green blue shade. Nimrud 3 and Samaria 5, 6, 8 also show copper and manganese, but are not at all green in tone; the Samaria samples are a paler shade of the ultramarine, and the Nimrud piece a pale greyish blue inclining to violet. It is possible that the manganese pink or purple has here cancelled out the greenish cast of the copper, as this is said to occur when the copper and manganese are in the right proportion,[2] but in these samples there is only a trace of manganese.

Dr. Plenderleith tells us that the cobalt in Nimrud 4 and Samaria 7 is the merest trace, but it should be remembered that cobalt is extremely powerful and even so small a dose as 0.08 p.c. will show, while a high cobalt content results in an almost black glass. One is tempted to suggest that the nearly black insets, which were not available for examination, may have owed their deep shade to an overdose of cobalt.

The question of cobalt in Ancient Egyptian glass, now proved to exist by this spectrographic examination, has always roused interest, since, as Lucas said, its presence "would be extraordinary" because it would either mean "a direct connection between the Egyptian glass makers of the 18th Dynasty and those of Western Asia, or that the specimens analysed were imported".[3]

In the case of the Syrian glass, on the other hand, the connection with Western Asia —whichever country Mr. Lucas is referring to—presents no difficulties.

[1] See Farnsworth and Ritchie, Spectrographic Studies. Egyptian glass mainly of the Eighteenth dynasty, with special reference to its cobalt content, in *Technical Studies*, VI, 3, Jan. 1938.

[2] Farnsworth and Ritchie, *op. cit.*, p. 164. Note.

[3] Lucas, *Ancient Egyptian Materials and Industries*, p. 124, 1934.

NOTES ON THE SPECTROGRAPHIC EXAMINATION OF GLASS AND POTTERY

BY P. D. RITCHIE

These notes comprise (i) a very brief and elementary outline of the principles of spectrum analysis, which it is hoped will enable the non-scientist to appreciate the method by which analyses quoted elsewhere in this book were carried out; and (ii) a brief account of the actual experimental details, for the guidance of any spectrographer who may desire to carry out similar analyses on a comparable basis.

(i) White light, such as sun-light, is composed of a range of differently coloured lights, whose mixture produces in the eye the sensation which we call "white". A beam of light may be visualized as a series of minute waves or ripples travelling through space at a very high velocity; and each wave-length—that is, the distance between the crests of two successive waves—corresponds to one specific colour. Red light has a relatively large wave-length: orange is shorter, yellow shorter still, and so on through the familiar rainbow sequence—green, blue, and violet.

If we pass white light through a narrow vertical slit, and allow the resulting thin plane of light to pass through a prism of glass, it is deflected from its original course. Further, the beam which emerges on the far side of the prism is no longer a vertical *plane* of white light, but is spread out fan-wise into a sequence of rainbow colours. The shortest wave-lengths (i.e., violet light) are the most widely deflected, the longest (i.e., red light) the least deflected, and the other wave-lengths arranged in order between these limits. If we allow this "fan" to fall on a screen, or directly upon the eye, we see what is known as the *spectrum* of white light: and the special optical instrument for carrying out this prismatic splitting-up is known as a *spectroscope*. If, instead of merely viewing the spectrum, we place a photographic plate in the path of the beam, we will obtain a photograph of a continuous band, rendered in black instead of in colour. An instrument for photographing a spectrum thus is called a *spectrograph*. If, now, we start with a beam of, say, yellow light, all the light-ripples being in some way confined to one wave-length, the spectrum will obviously consist not of a *band* of various colours, but of an image of the slit through which the light is originally passed—in fact, of a single yellow *line* somewhere about the middle of the fan-shaped sector produced by white light.

Such a phenomenon is easily brought about; for all sources of light do not show the continuous spectrum of white light, which may be considered as a range of slit-images of various colours so closely crowded together as to give a continuous band. Many emit only certain selected colours or wave-lengths out of the total visible range: they may emit a large or small number of single, pure colours, each giving in the resulting spectrum a single line, an image of the slit, spaced out according to wave-length. For example, if we produce an electric arc between two carbon rods, and place a little common *salt* on one of these, the arc emits an intense golden-yellow light: and we find that in its spectrum a great part of the emitted light is concentrated into two wave-lengths, very close together, giving a double line in the yellow region of the spectrum. If we pass the arc between *copper* rods, a brilliant greenish light is emitted, and the spectrum is found to con-

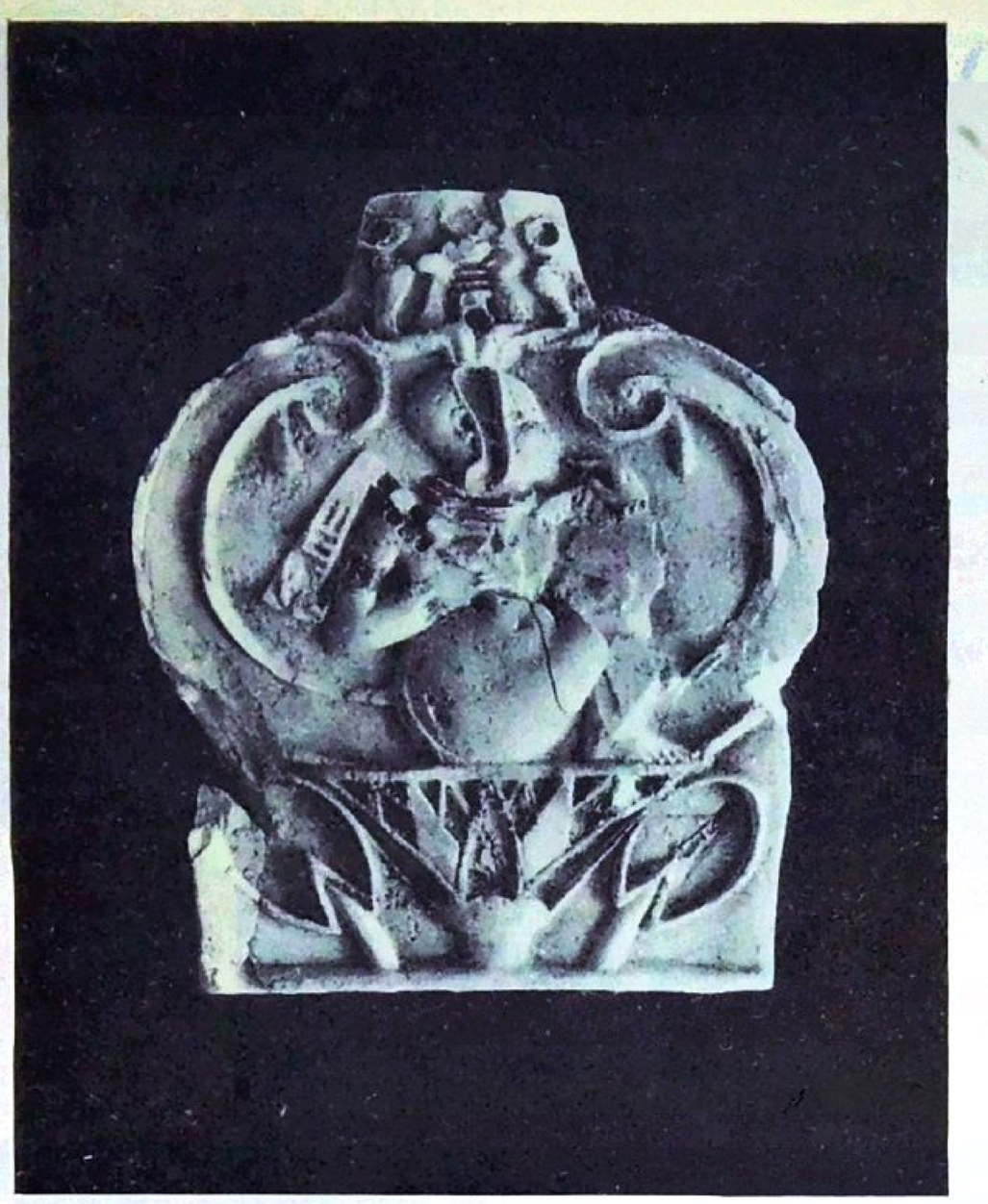
tain, amongst a mass of lines corresponding to different wave-lengths, a group of very strong wave-lengths in the green region.
Every chemical element, in the same way, emits a specific and typical group of wave-lengths when placed in an electric arc, or a similar intense source of energy, and can be accurately identified by measuring the position of the lines in the resulting spectrum. This applies to single elements, mixtures, and compounds: and the method can be carried out by placing even an exceedingly minute trace of the material in question in the electric arc. This fact, obviously, renders the above method of great ulility in examining objects of antiquity, where considerations of value render it necessary to remove only insignificant traces for analysis.

(ii) A Hilger "Medium" Quartz Spectrograph was employed. The source of light was a 200 volts D.C. arc between rods of Hilger's purified Acheson graphite, and a current of 8 amps. was maintained, the gap being 4 mm. The source of light was approximately 40 cm. from the slit: and a quartz sphero-cylindrical condensing lens was placed approximately 20 cm. from the slit, whereby a sharp image of the arc was focused on the latter. The slit was set by closing it completely, and then turning back the controlling drum $1\frac{1}{2}$–2 divisions: and the smallest of the three diaphragms was employed. Ilford "Rapid Process" Panchromatic plates were used, with an exposure of 8–10 seconds, development being carried out by a standard metol-hydroquinone developer.
The sample was prepared (in the case of hard glass or pottery) by scratching with a diamond, until about 5–10 mgm. of dust had been collected. For corroded and crumbling specimens, a small chip could readily be removed by a sharp instrument such as a dental probe or chisel. The sample was then placed on the lower (positive) pole of the arc gap. The upper pole was sharpened, by means of a rotatory pencil sharpener, to a flat tip 2 mm. in diameter; the lower was brought in the same way to a diameter of 4 mm., and a small cavity was bored in the surface of this pole by means of a clean pen-knife, to a depth of about $1\frac{1}{2}$–2 mm. and a diameter of 2 mm. The sample was placed in this cavity, and the arc struck by drawing a clean graphite rod momentarily across the gap, in contact with both poles. In the case of finely powdered samples, it was found that the striking of the arc sometimes blew away most of the particles before they could be volatilized. In these cases, three successive ten second exposures were made, one-third of the sample being tightly pressed down into the cavity before each exposure. For these longer exposures the condensing lens was dispensed with. The lines were identified by photographing, in exact contact with the unknown spectrum (by means of a Hartmann diaphragm), the spectrum of about 5–10 mgm. of Hilger's "R.U." powder, the current being reduced to 5 amps. for this purpose. A 2 gm. tube of this powder sufficed for some 200–300 comparison spectra. The lines were then identified by inspection with a 5x lens. This procedure was found to be more certain than mere comparison of the unknown spectrum with a single standard R.U. spectrum on another plate, as it eliminated the slight apparent differences in dispersion which sometimes occur between two plates taken at different atmospheric temperatures, or dried under different conditions of atmospheric humidity. In addition to the accurate qualitative results obtained in this way, it was found possible to make a satisfactory semi-quantitative estimate of the various components, by *visual* comparison of the line-

intensity with a series of standard plates, prepared under identical composition from a series of some 150 glasses of known and different compositions. No great accuracy is claimed for these results. Nevertheless, in cases where a gravimetric analysis was later available for comparison, it was almost always found that the element had been correctly allocated to one of the following groups:

L (large)—of the order of 30 per cent. or over.
M (moderate)—of the order of 1–10 per cent.
T (trace)—of the order of 1 per cent. or less.
O (absent).

For the best results to be obtained, it is recommended that the experimental procedure should be rigorously standardized on the lines described above, and and that all operations should be carried out by one person, to whom the standard plates will soon become extremely familiar and easily read for comparison.



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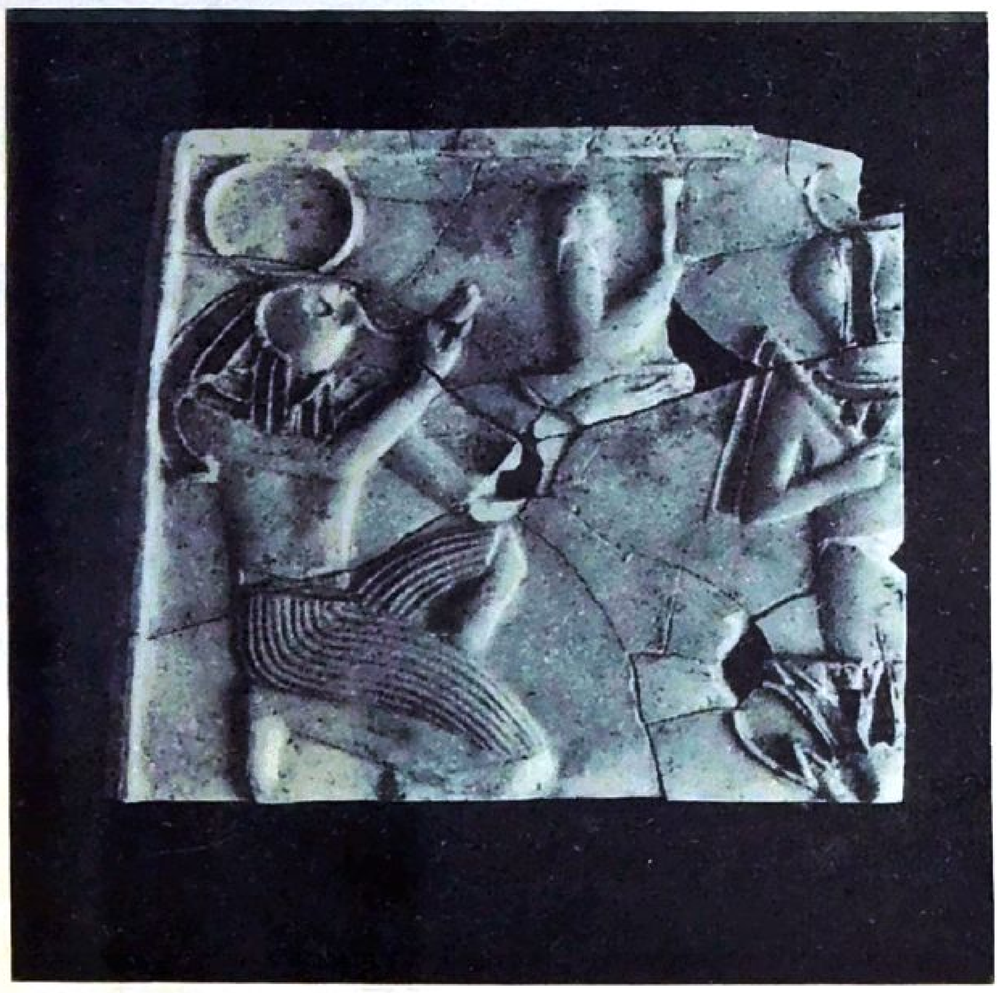

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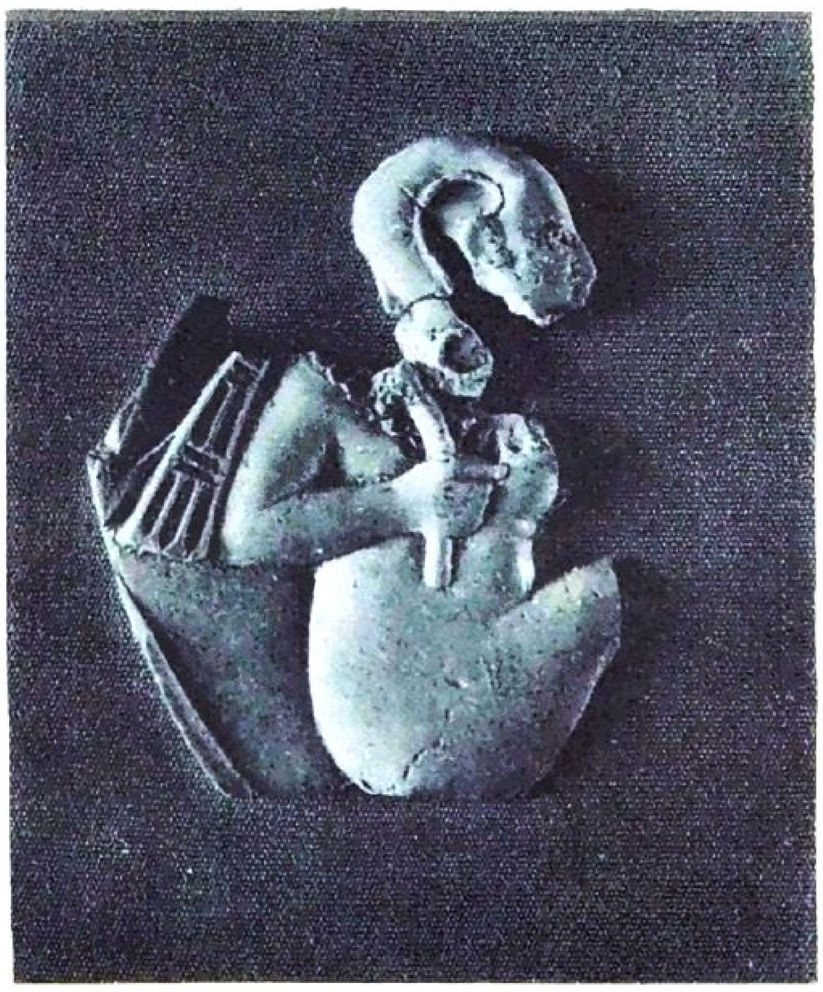


3

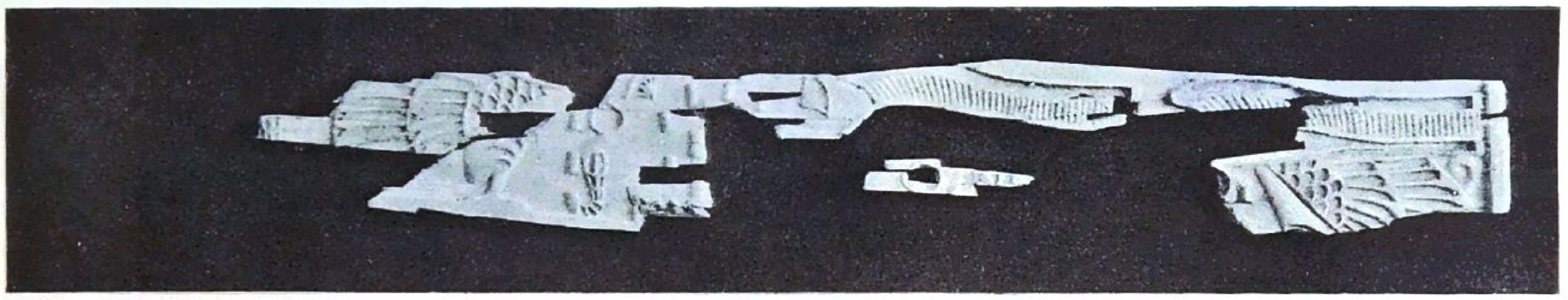
THE CHILD HORUS

I

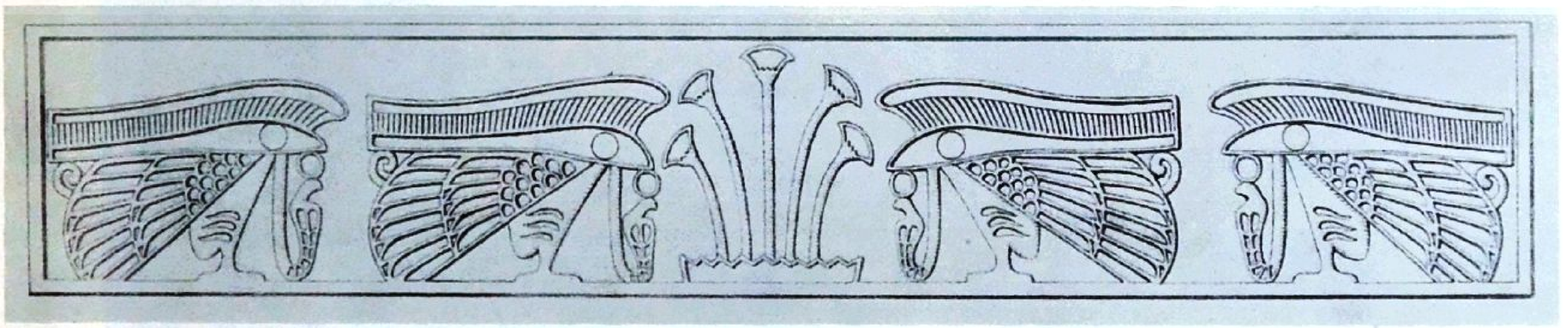
2

A ROBED FIGURE (OSIRIS?): HAH FIGURES

I

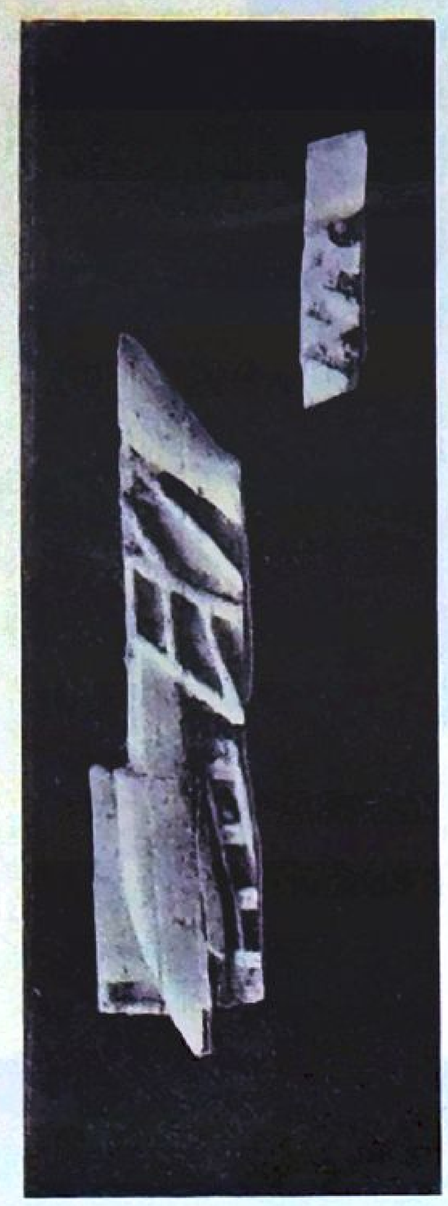


2a



2b

ISIS AND NEPHTHYS: THE EYES OF HORUS



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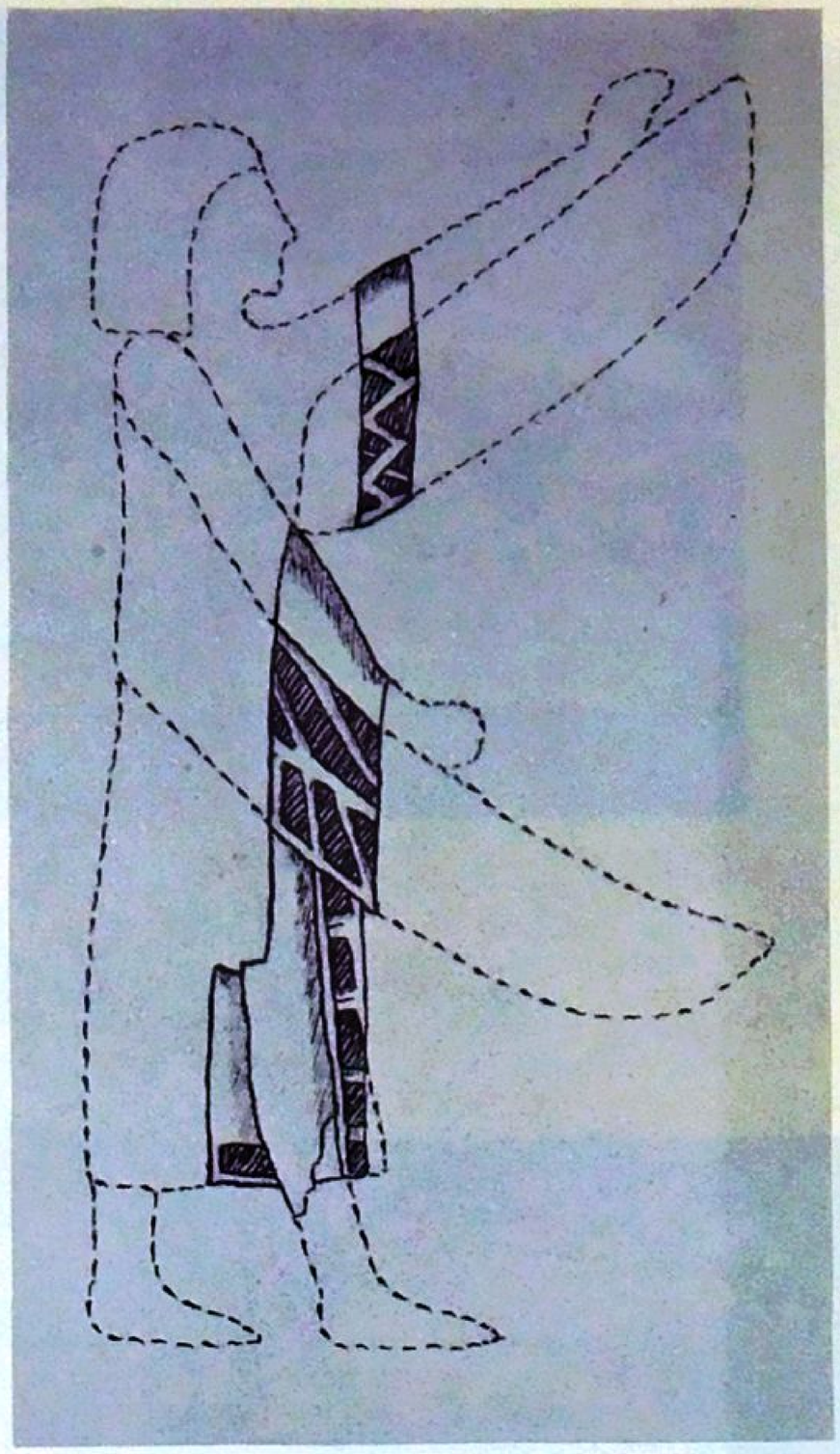

1*a*

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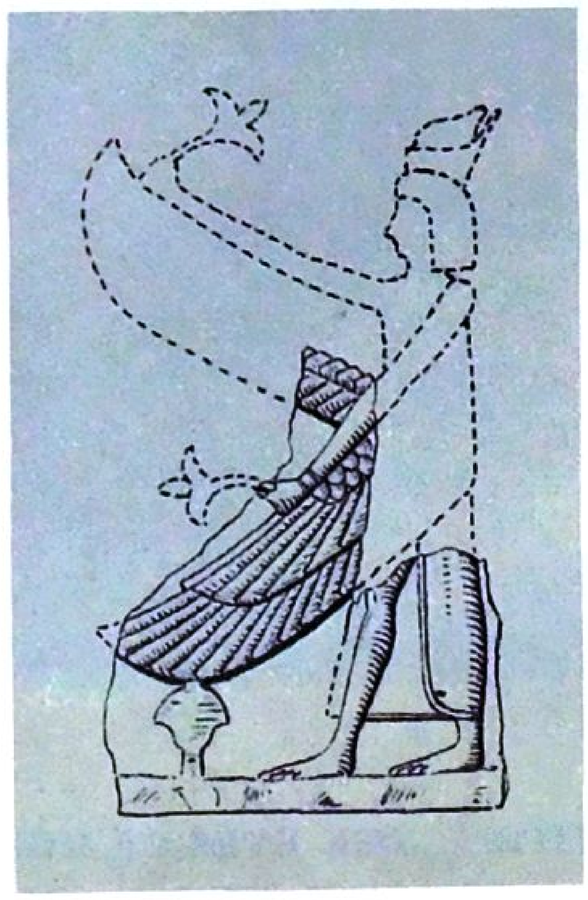
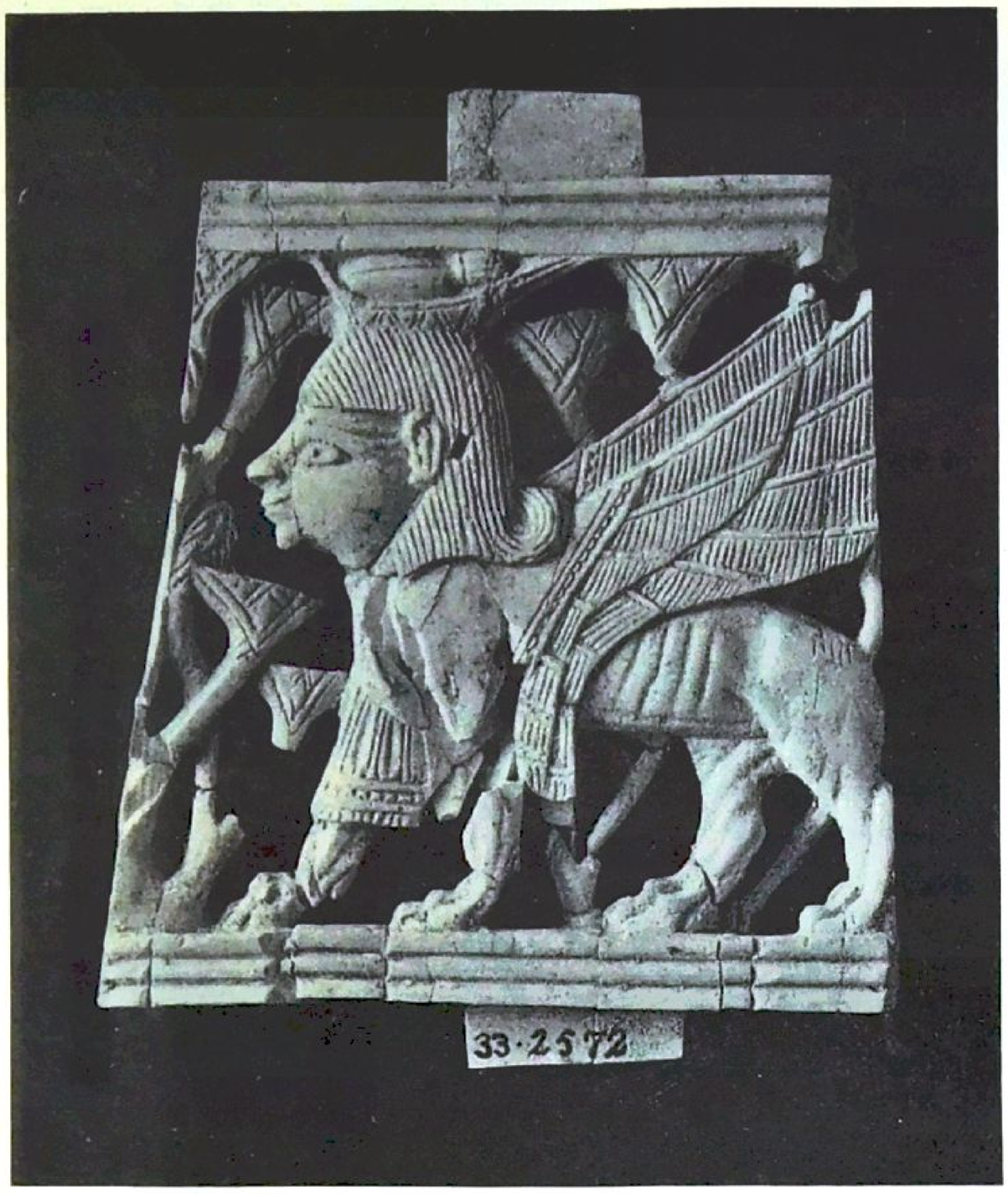


3*a*

5

WINGED FIGURES IN HUMAN FORM



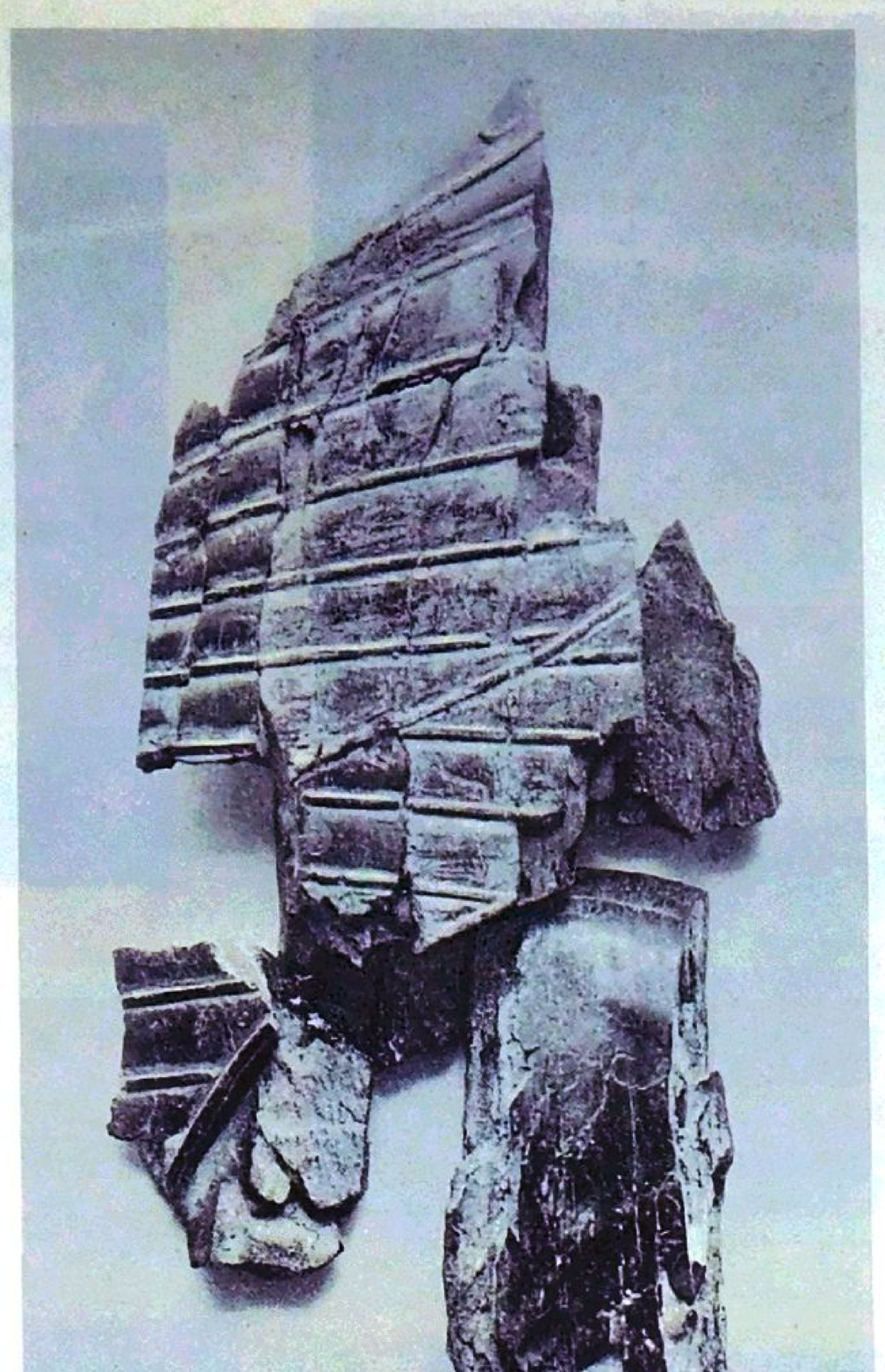
1

2

3

3*a*

WINGED SPHINXES WITH HUMAN HEAD



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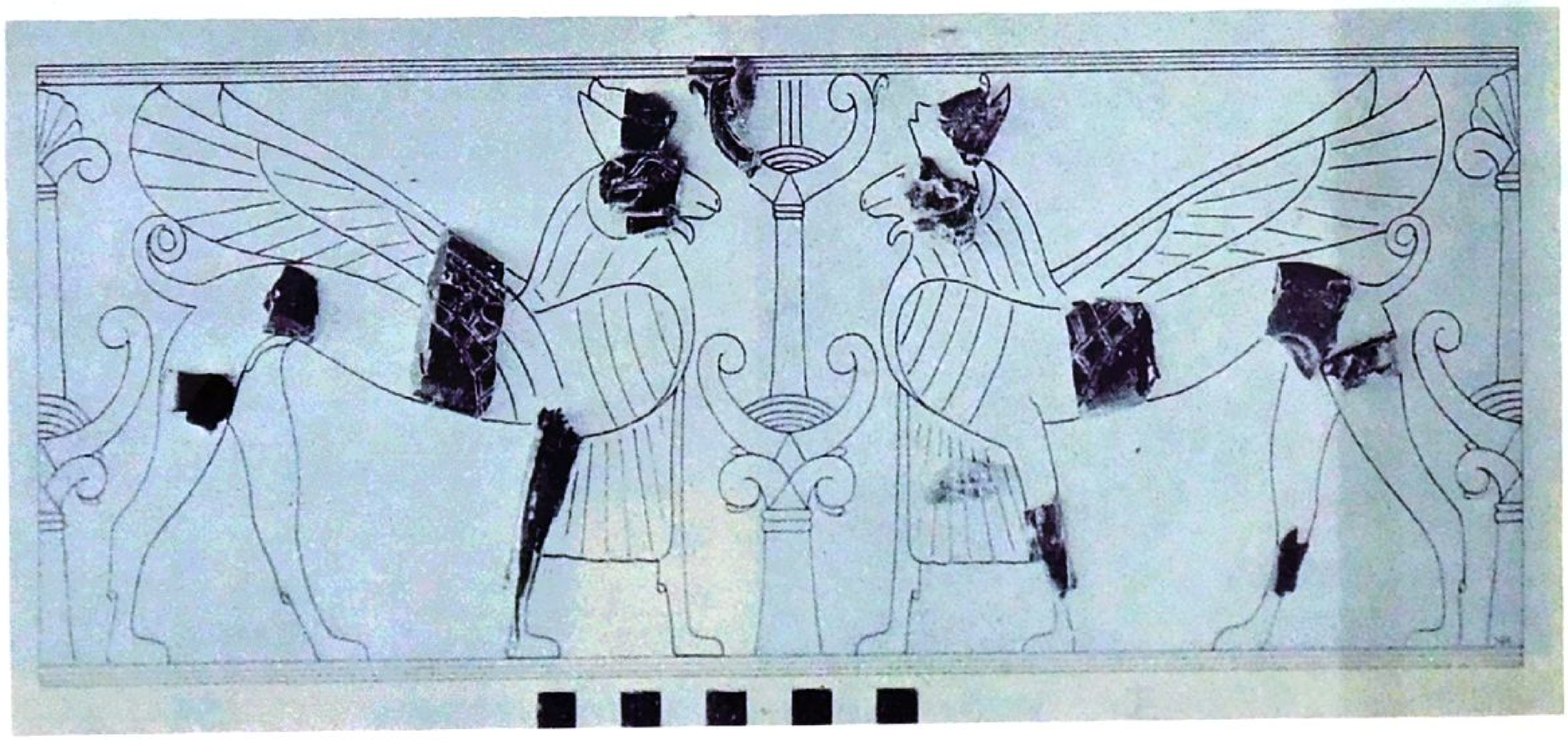

2

SPHINX FRAGMENTS I.

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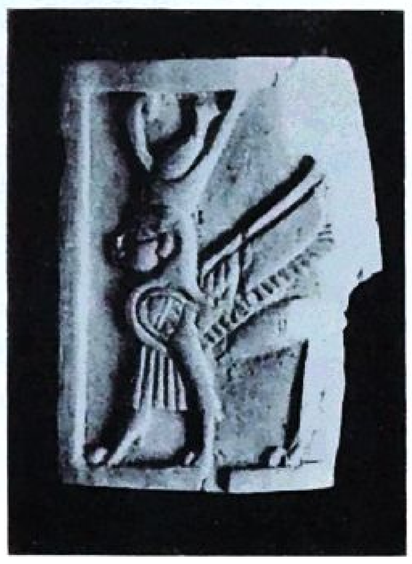

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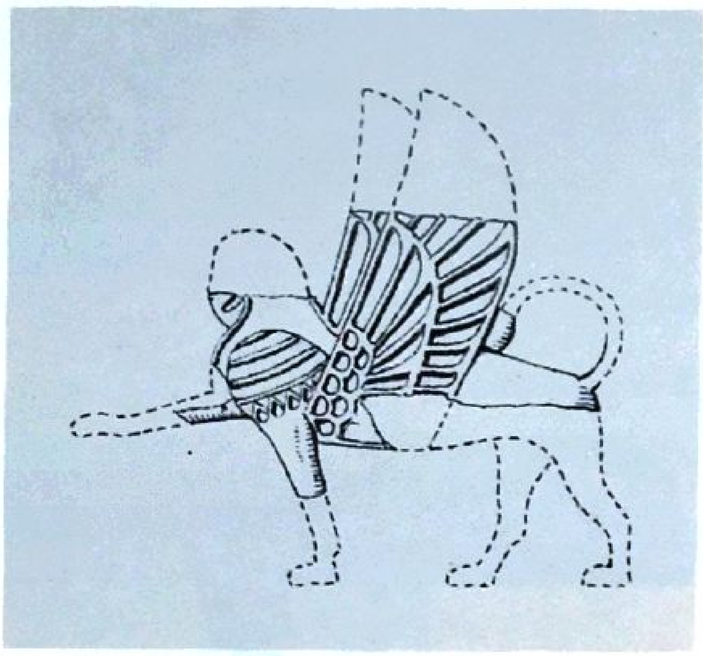

8a

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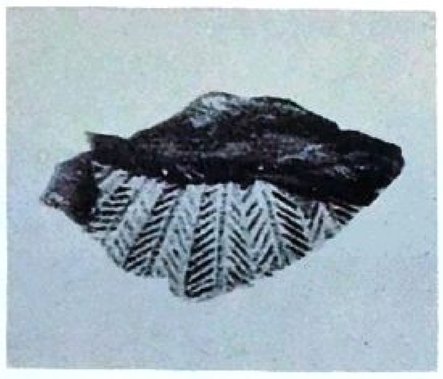

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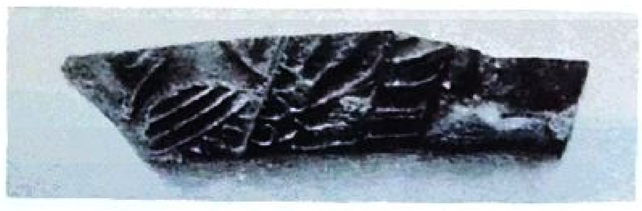

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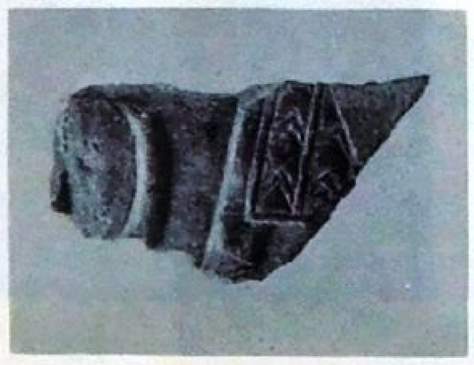

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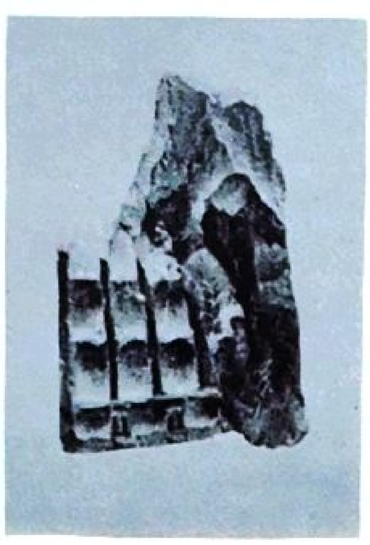
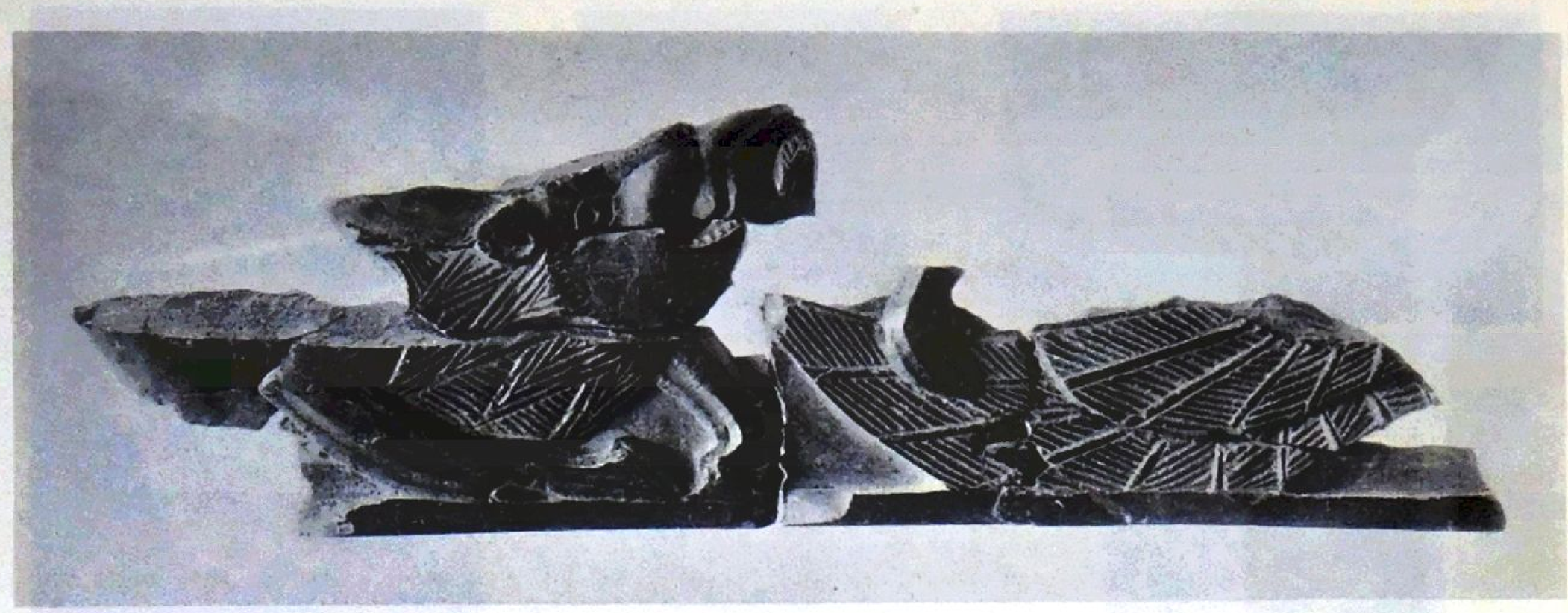


14

SPHINX FRAGMENTS 2.

PLATE VIII



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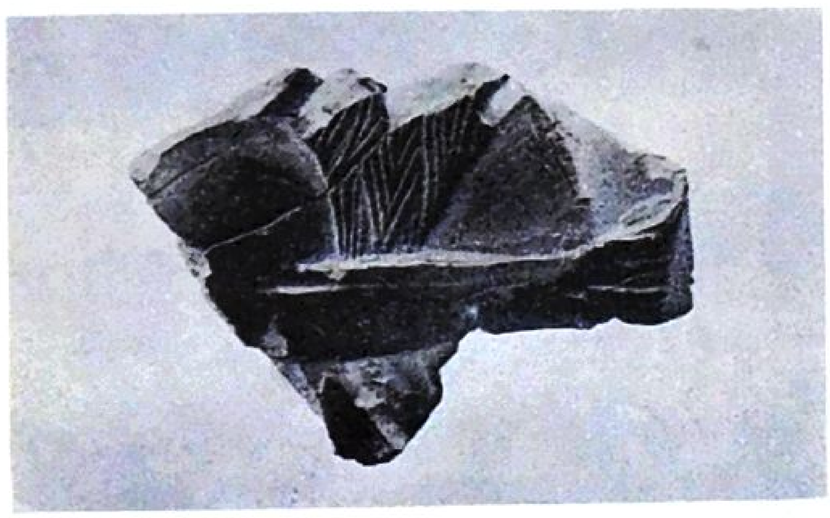

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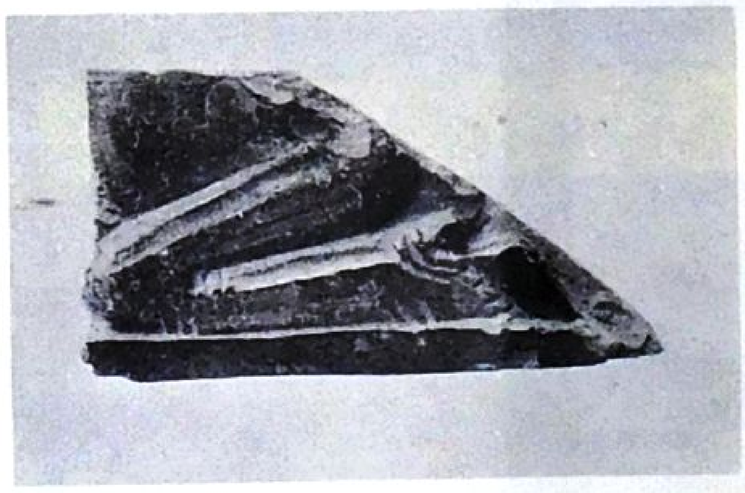

5

BATTLING ANIMALS

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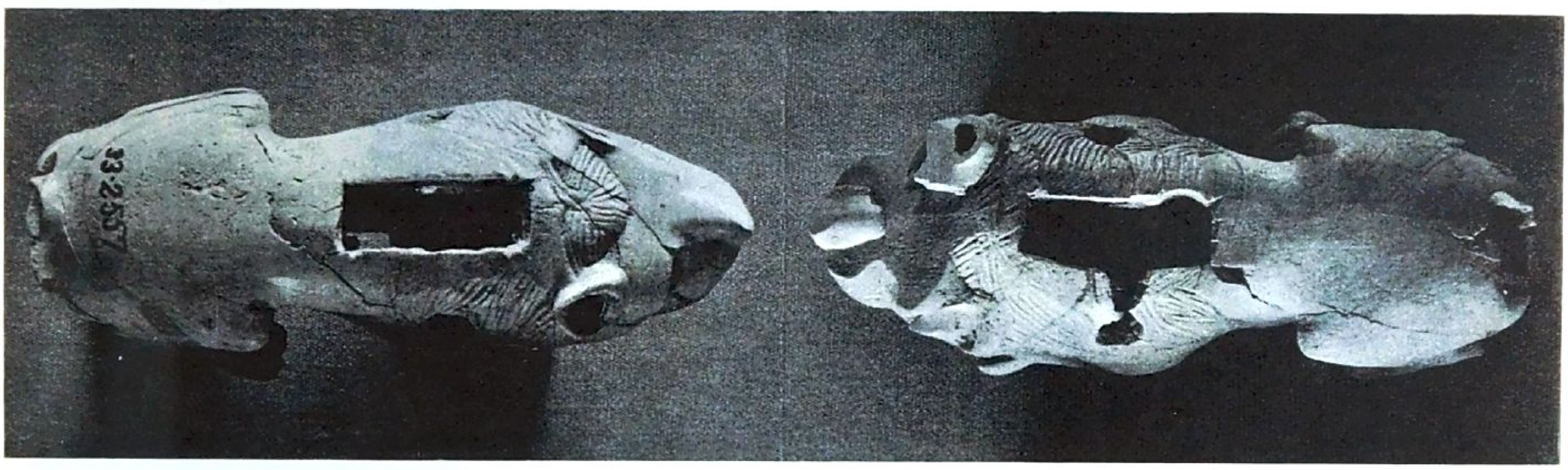
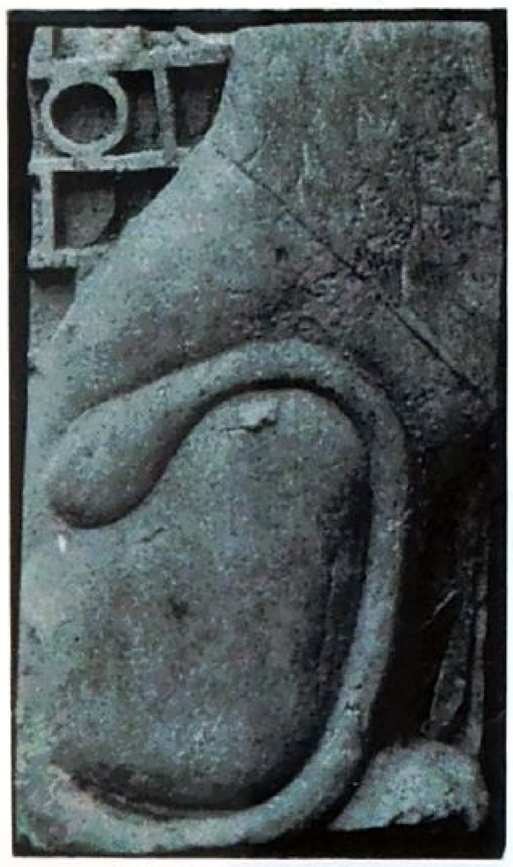


I *a*

I *b*



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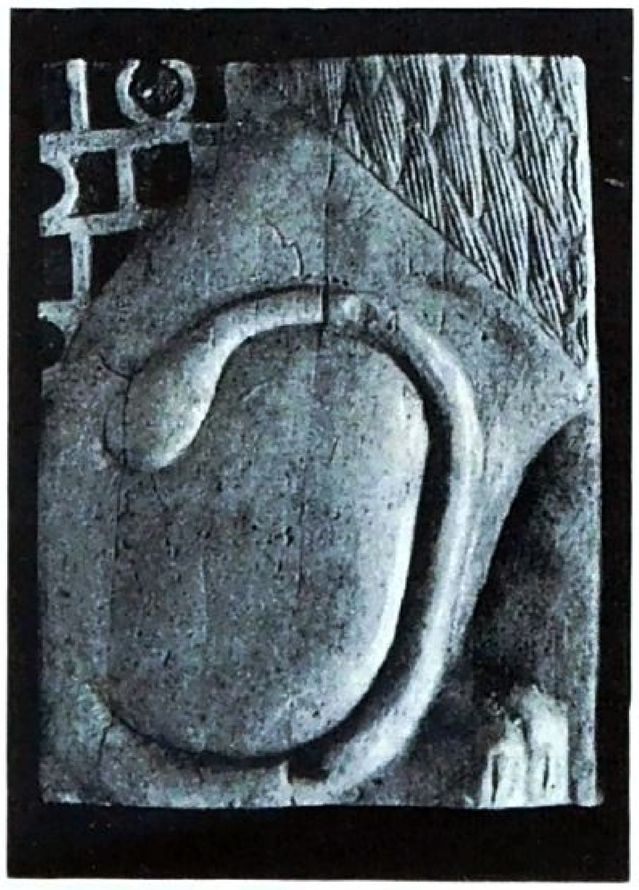

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LIONS

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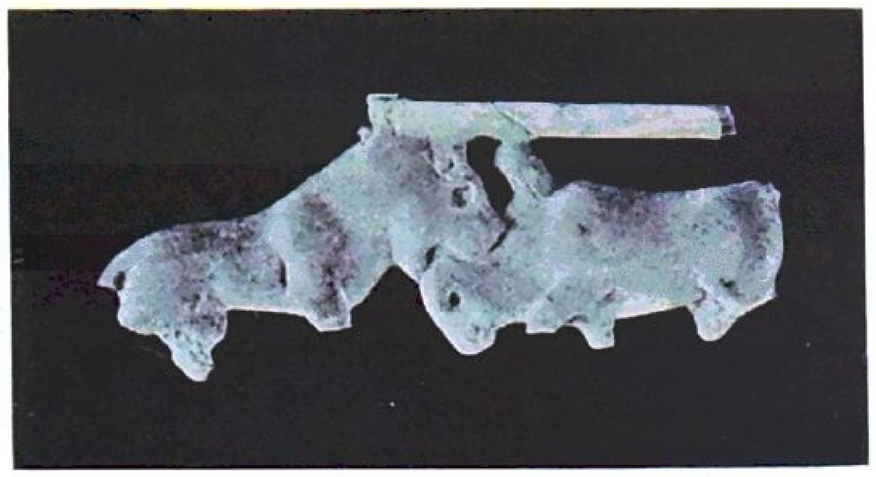

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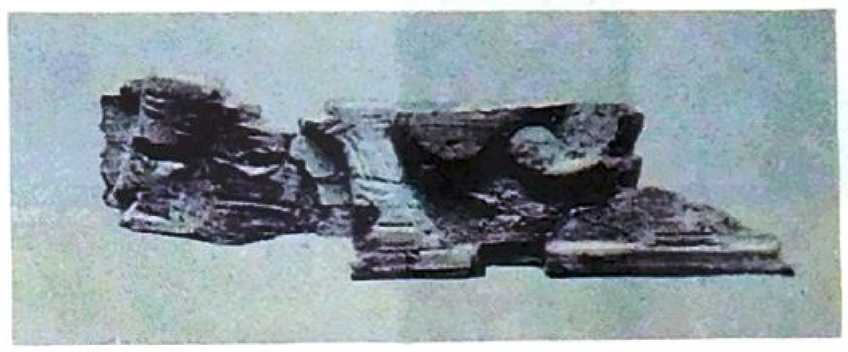

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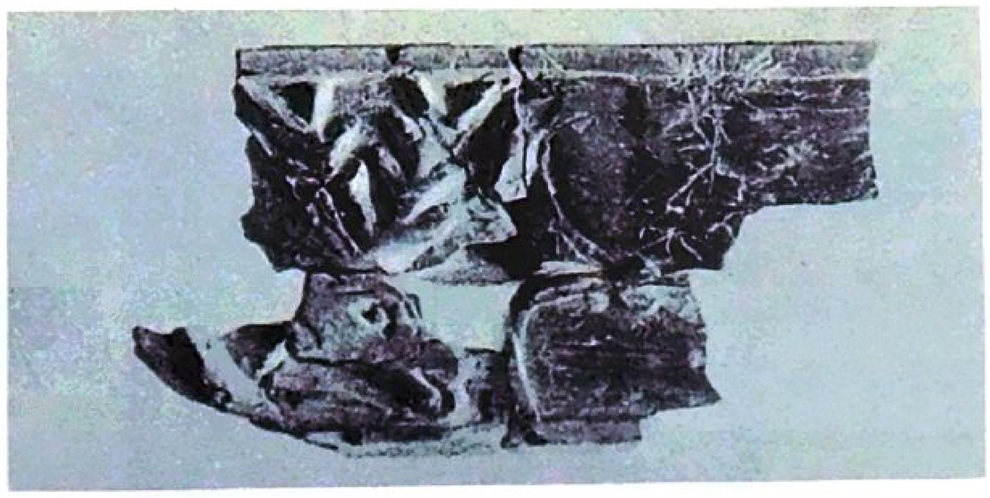

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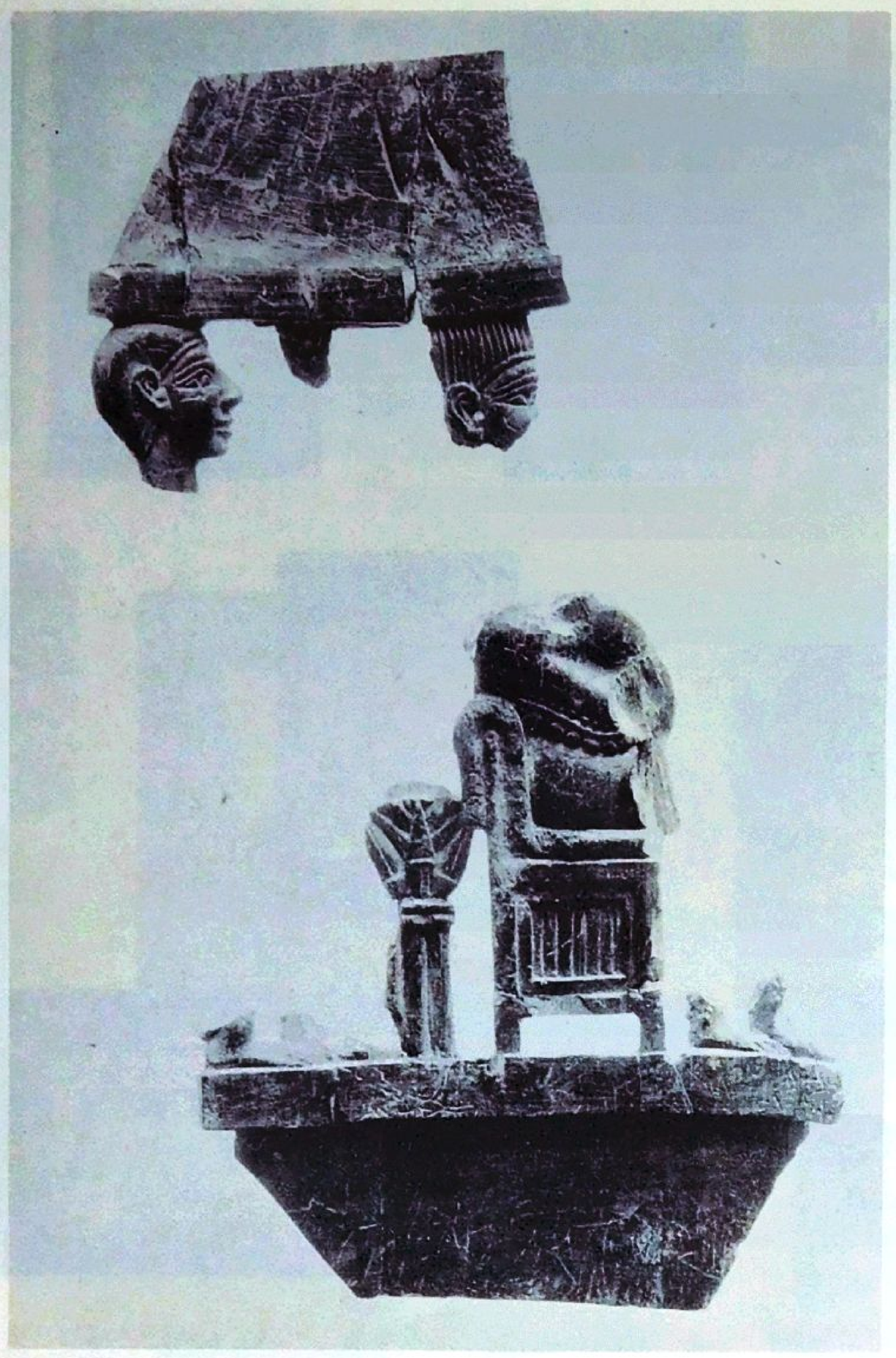
8a

LIONS, BULLS AND DEER



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6

A THRONED FIGURE : FIVE HEADS

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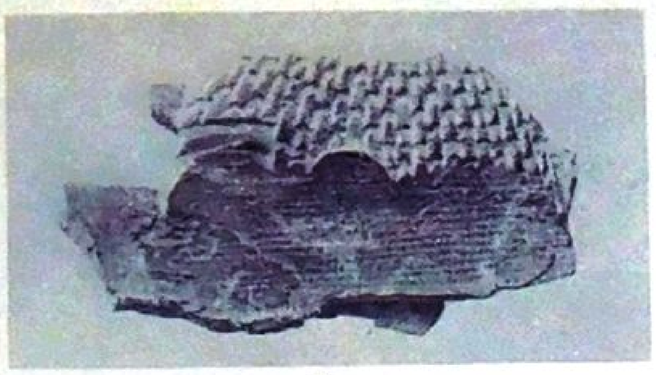

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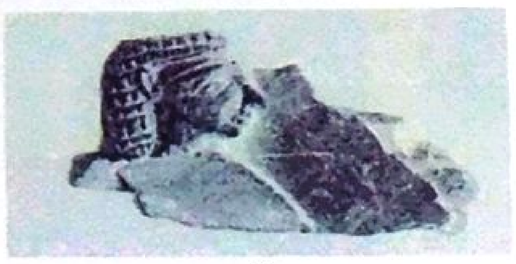

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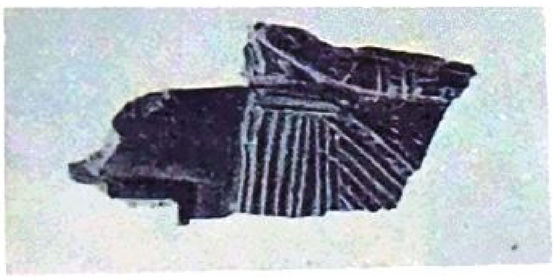

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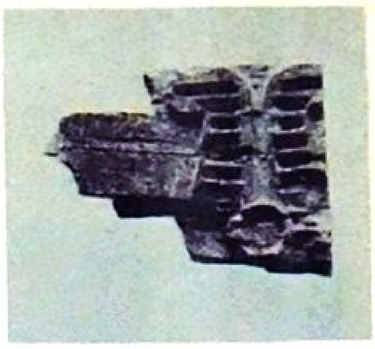

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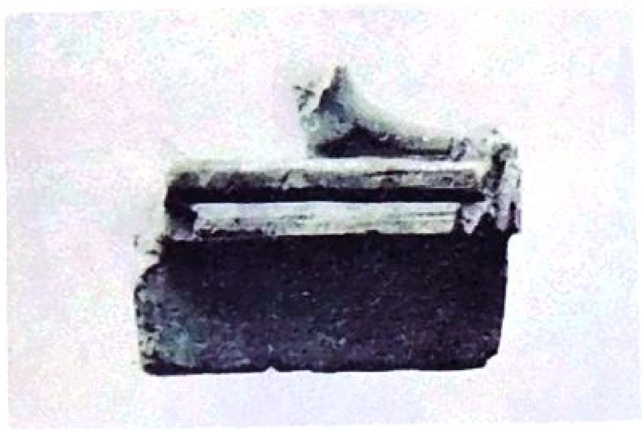

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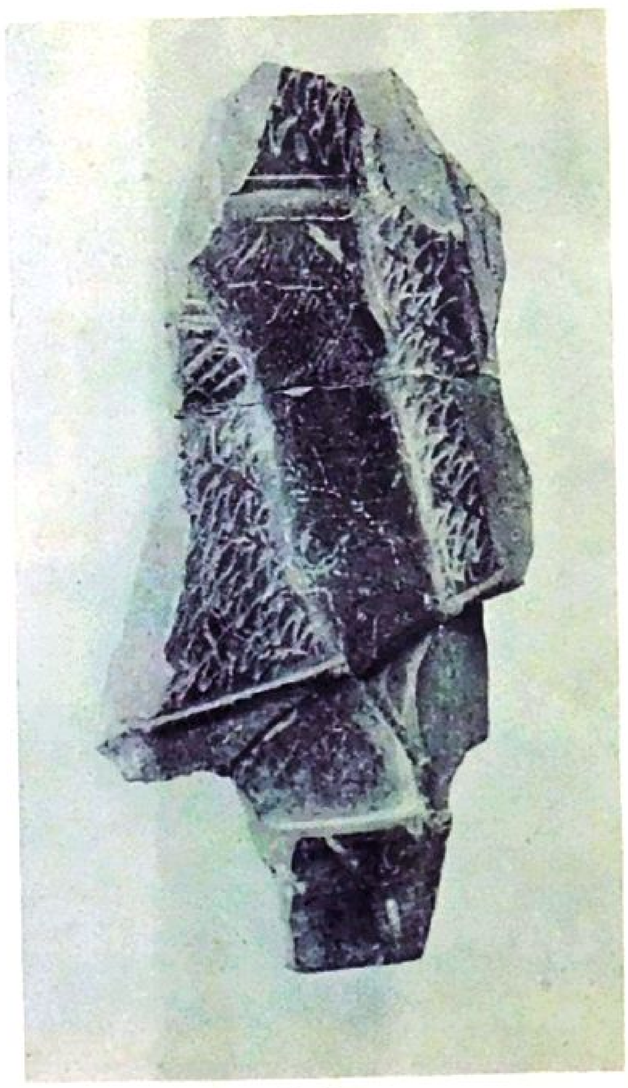
15



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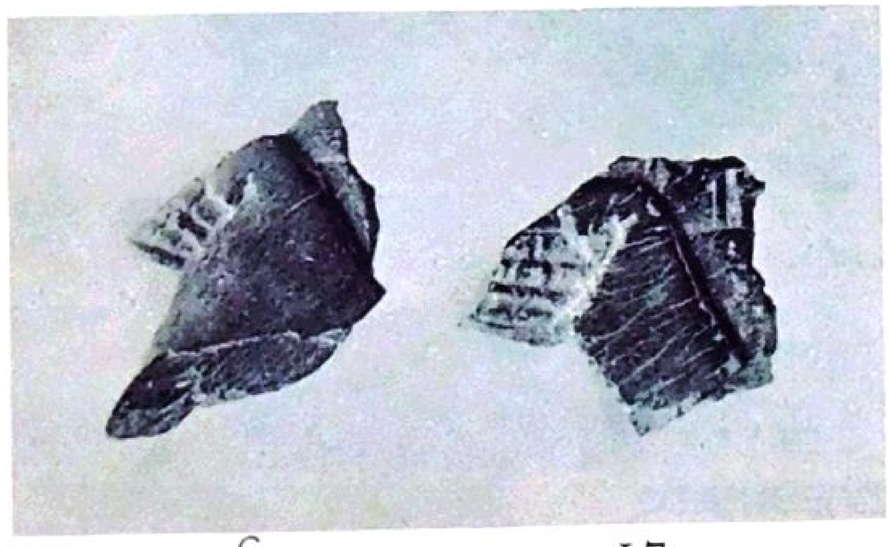

16 17

18

FRAGMENTS OF HUMAN FIGURES

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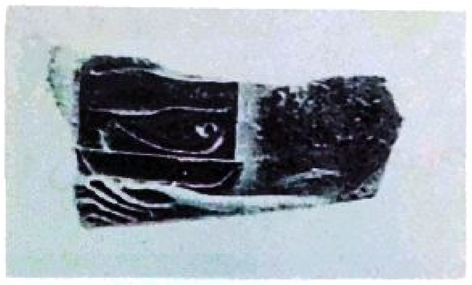
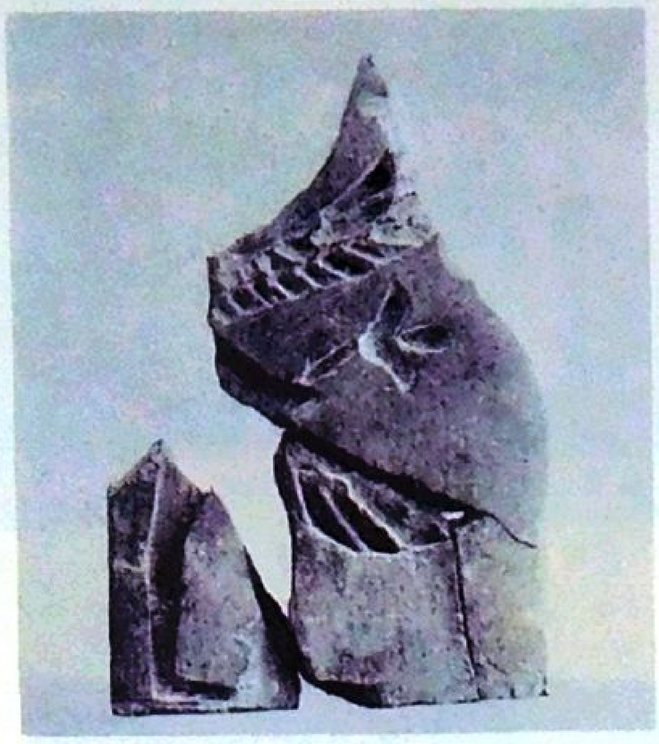


13

HIEROGLYPHS : FRAGMENTS MOSTLY MYTHOLOGICAL

1



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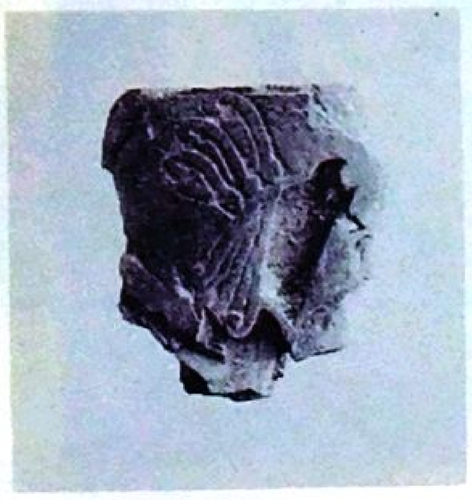

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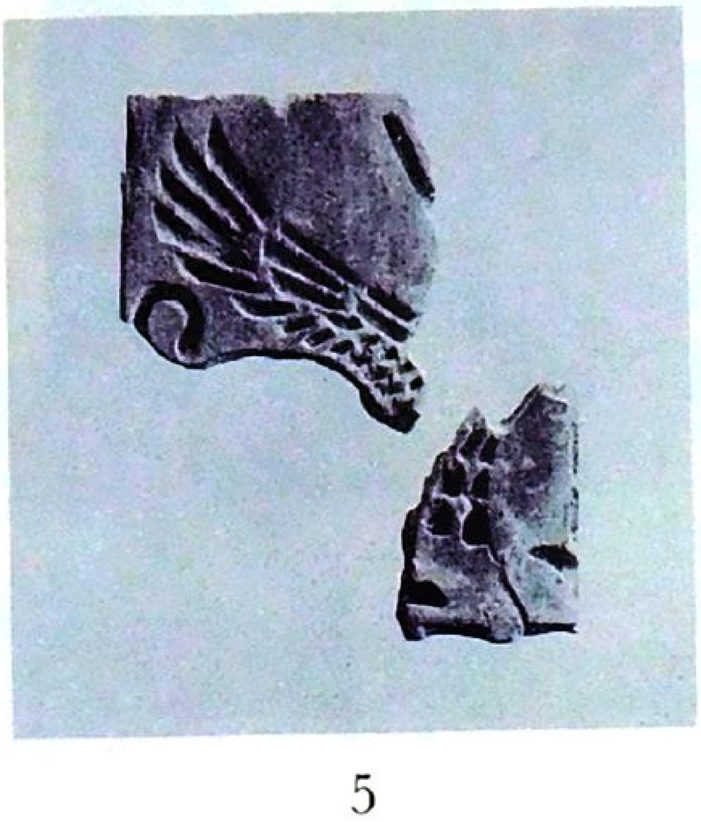

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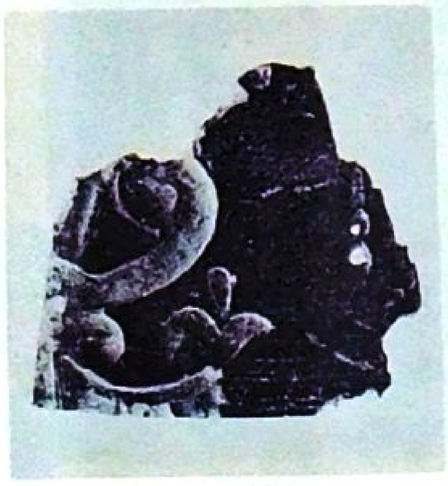

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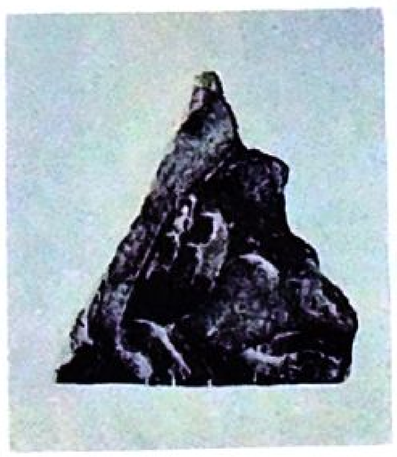

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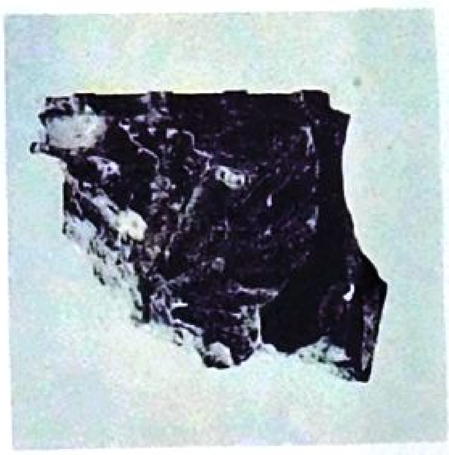

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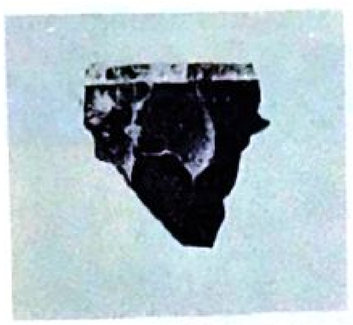

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11

INLAID FIGURES

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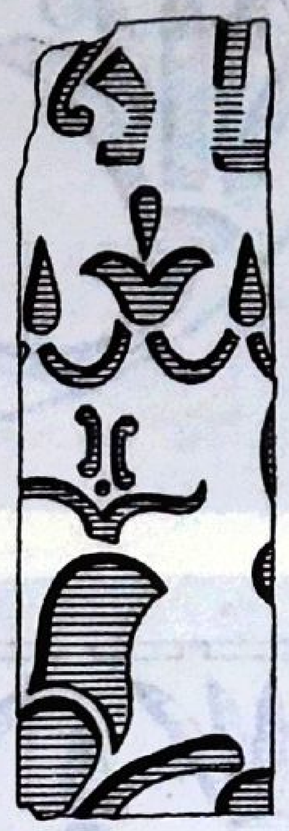

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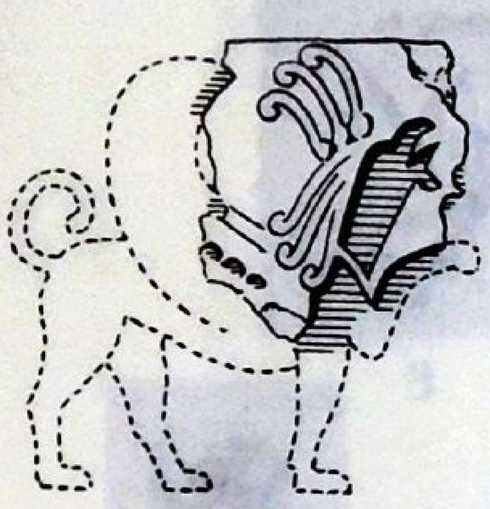

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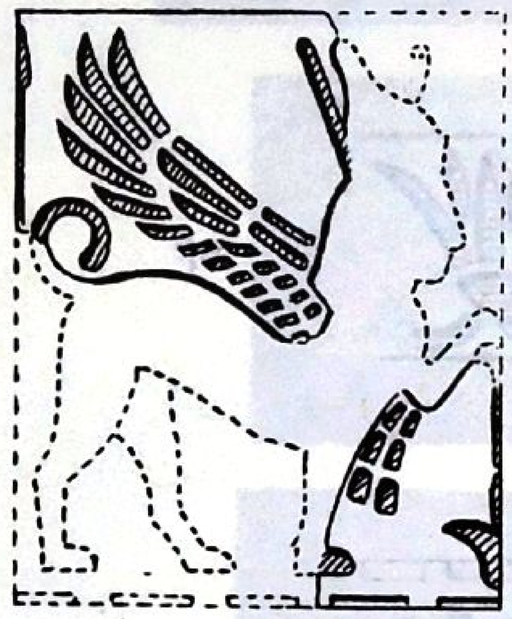

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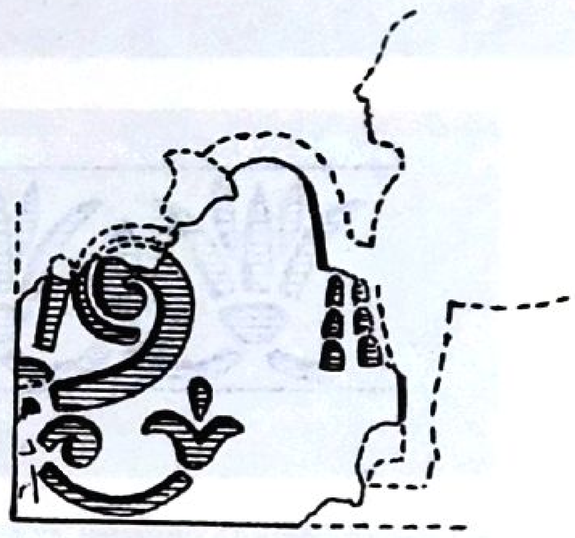

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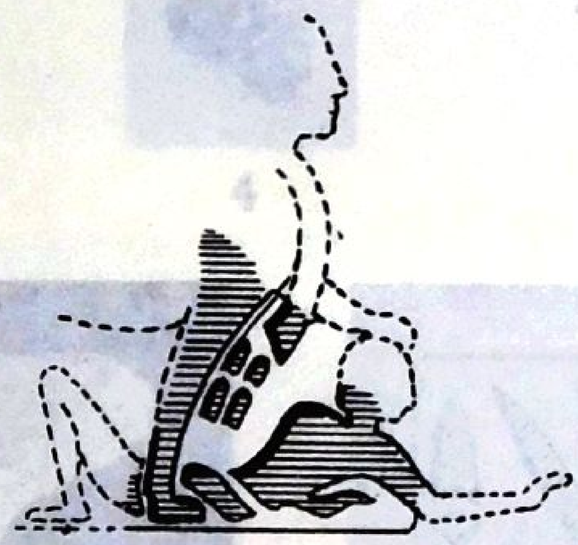

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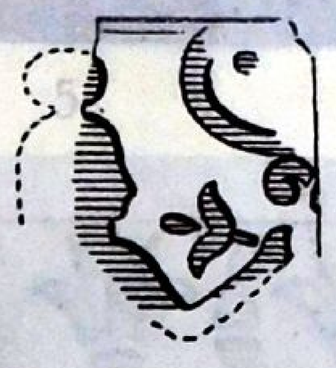

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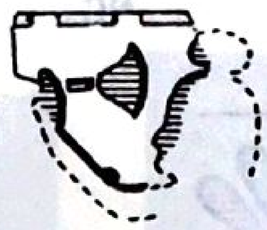

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11

RECONSTRUCTIONS

INLAID PATTERNS

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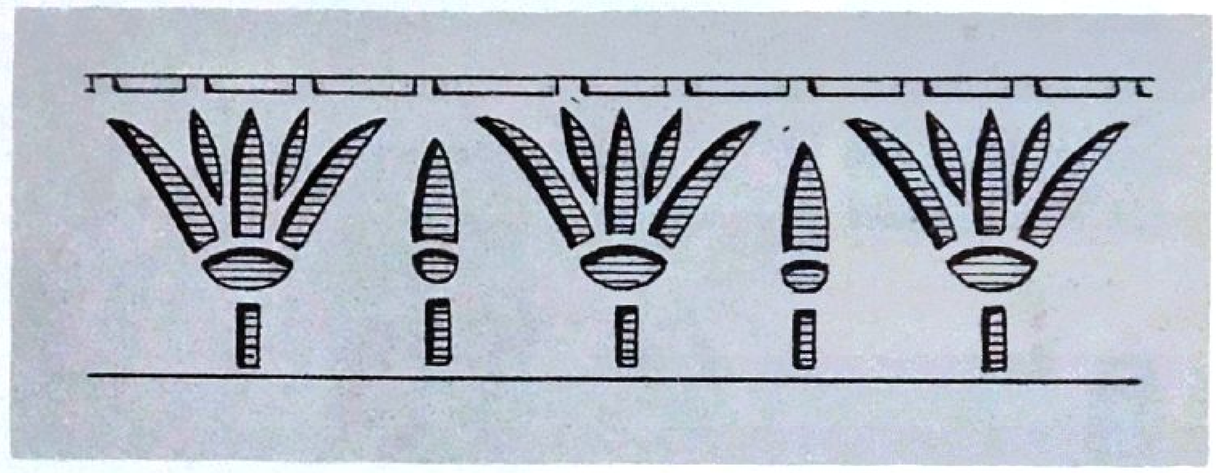

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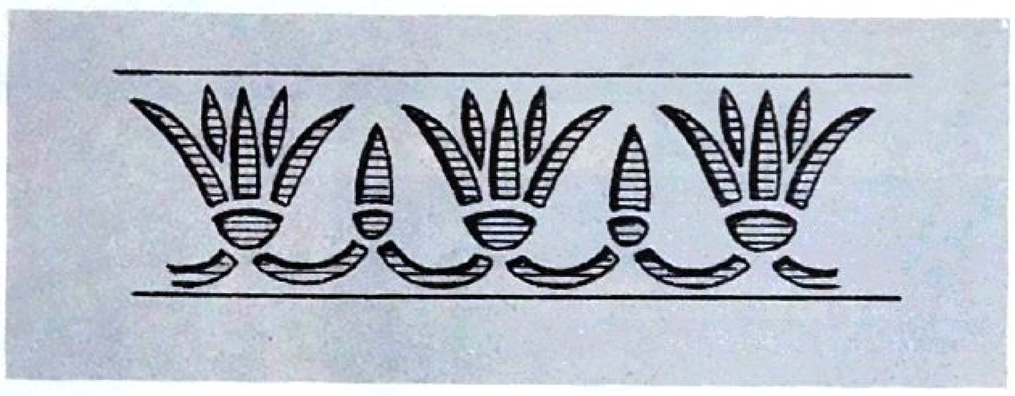

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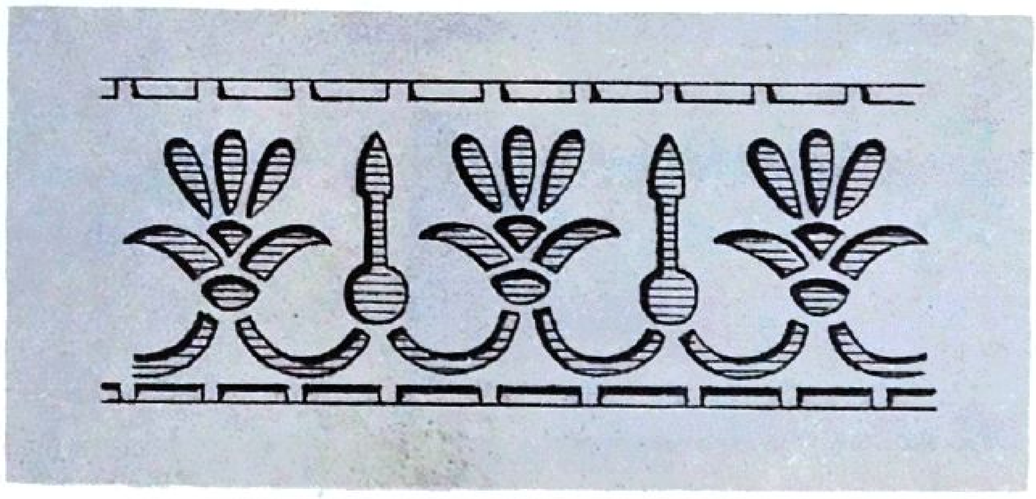

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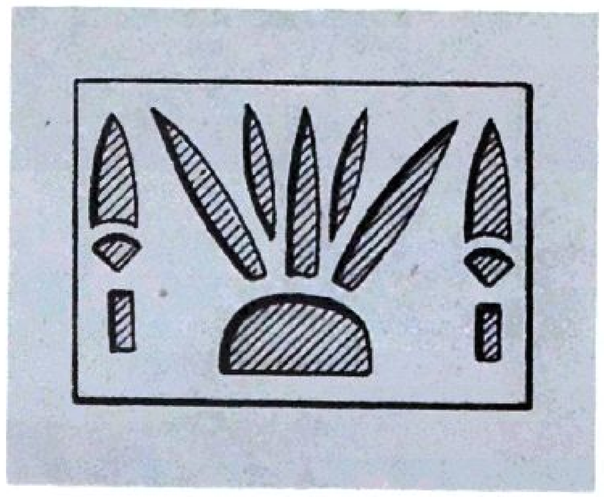

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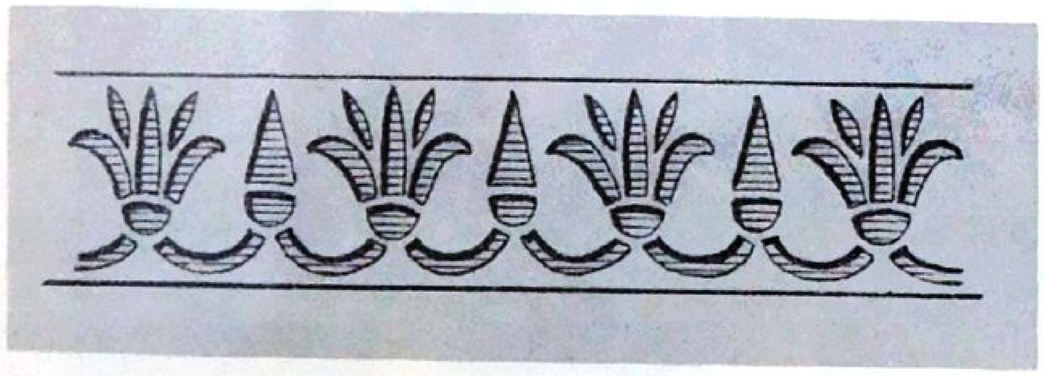

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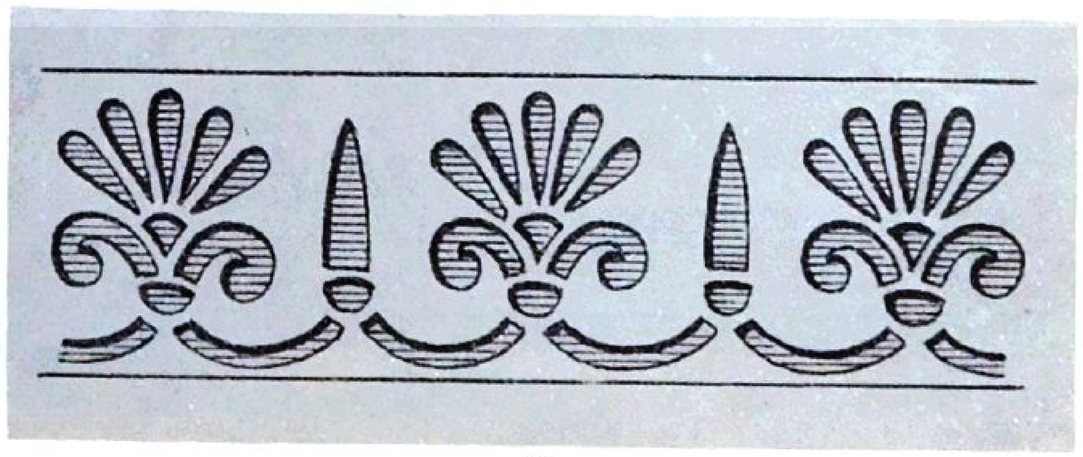

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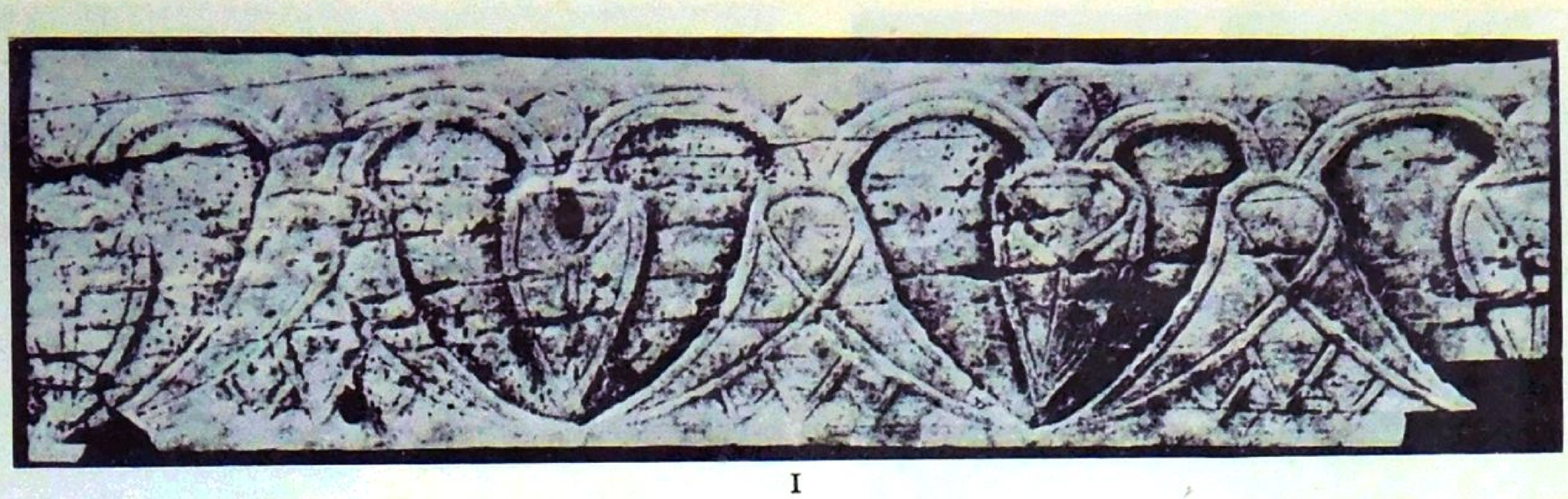
PLATE XVI



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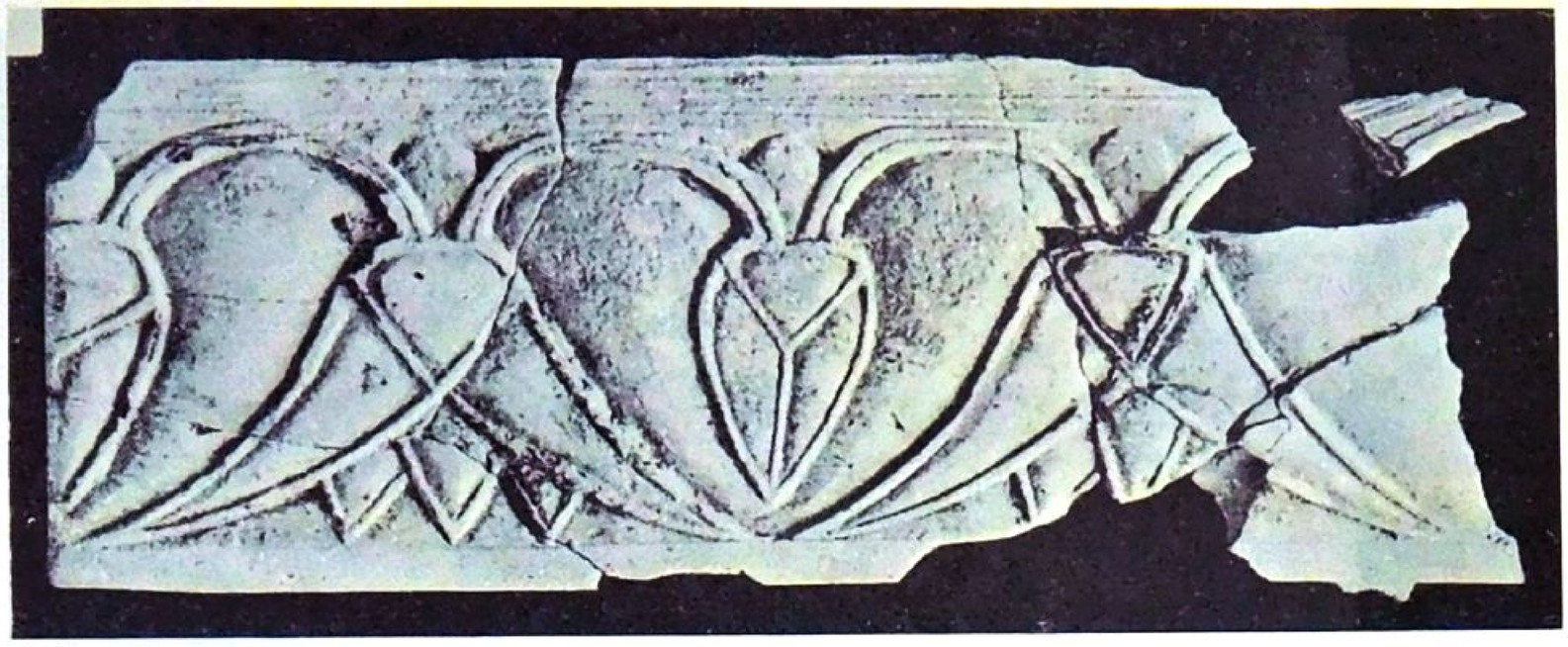

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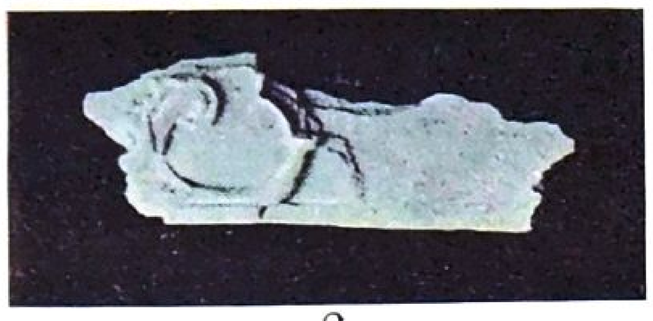

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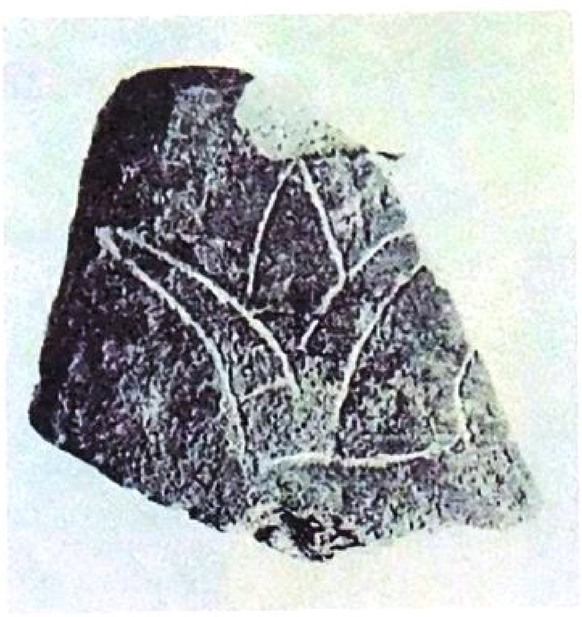

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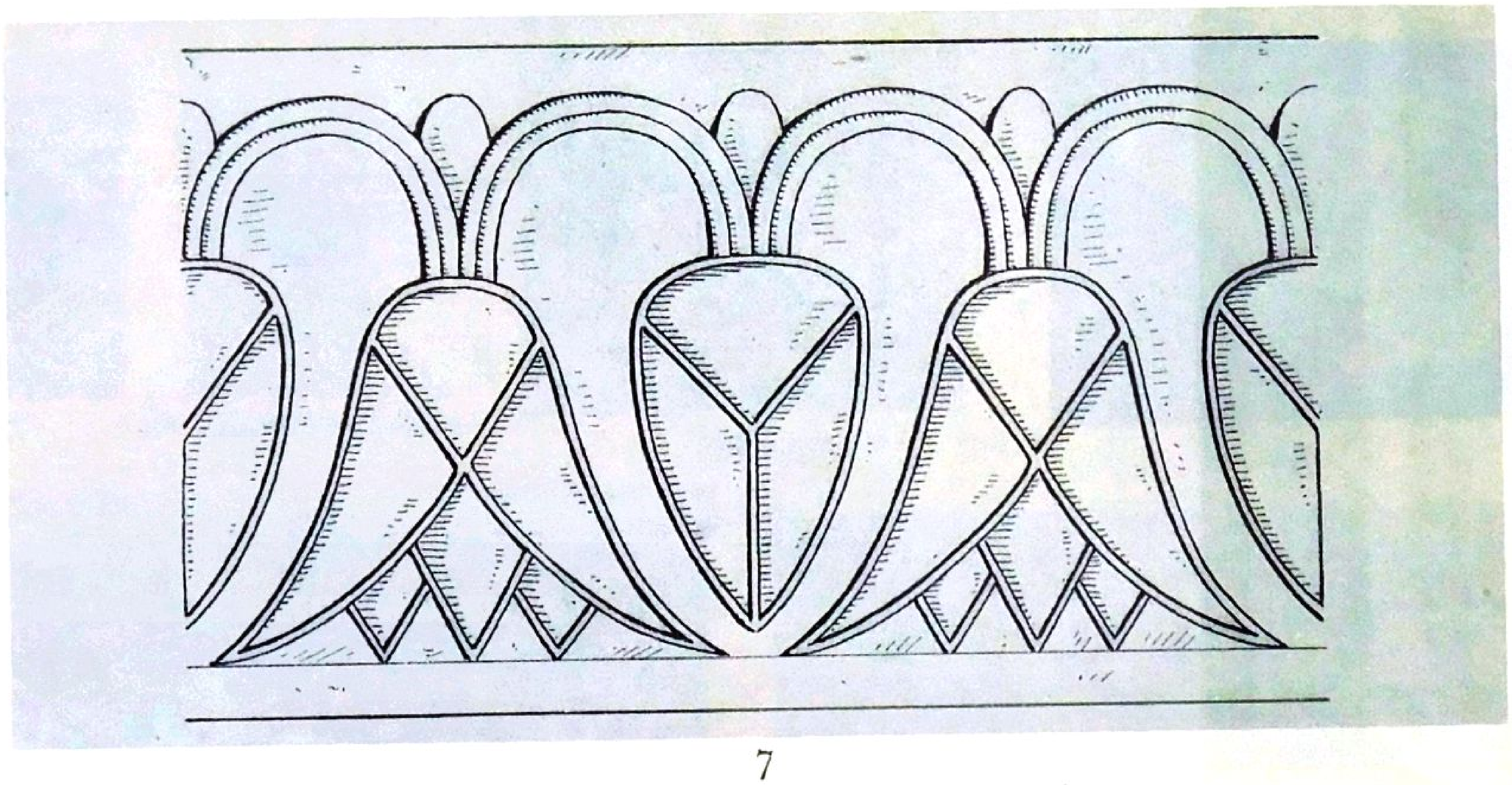

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LOTUS CHAINS

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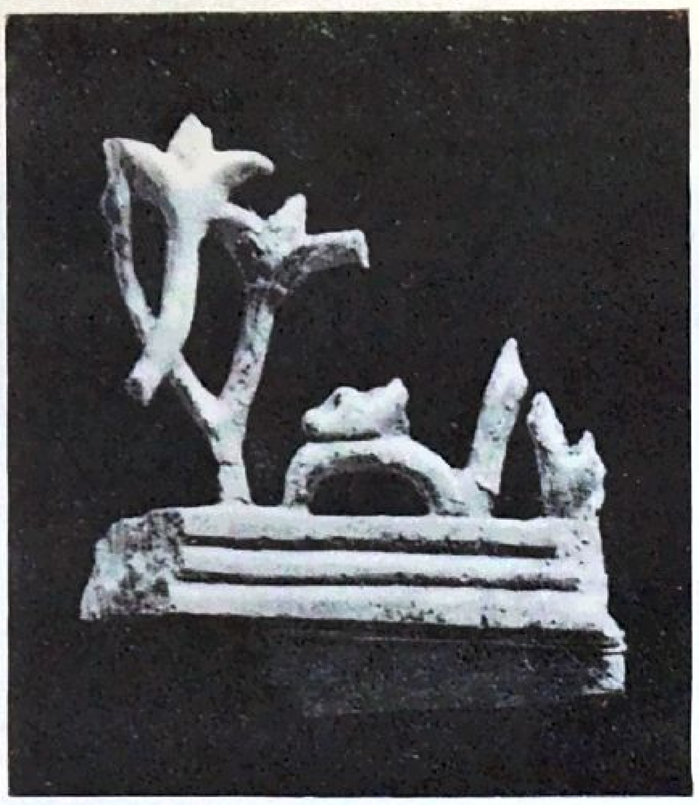

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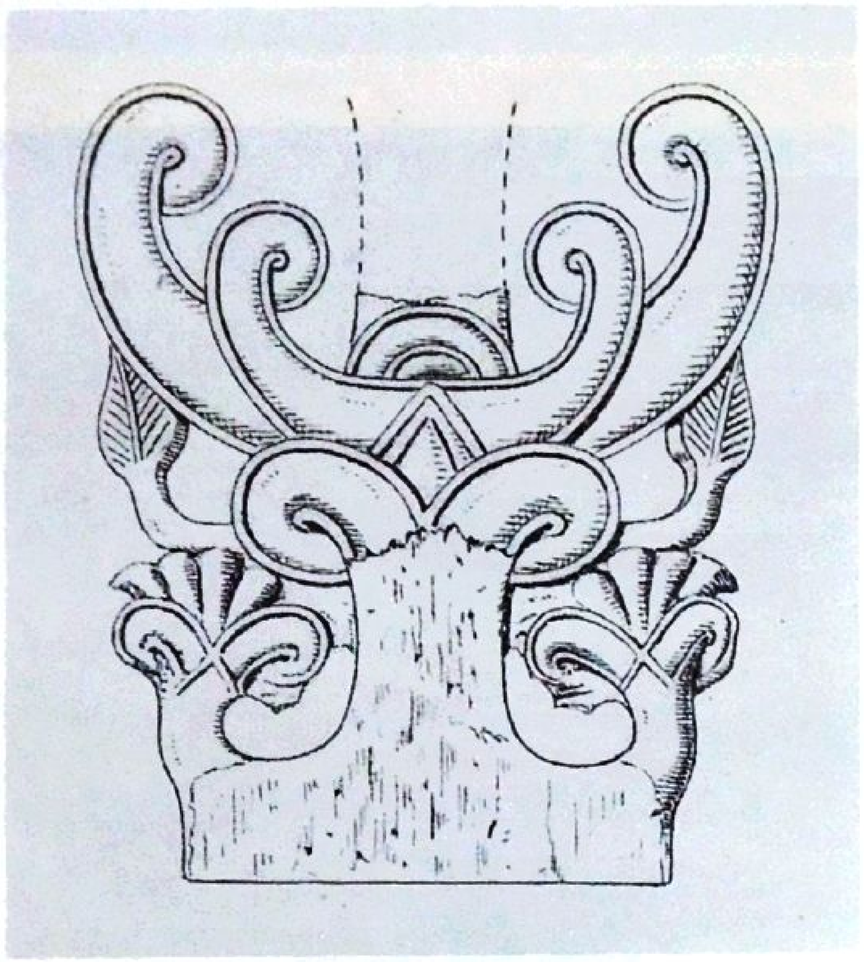

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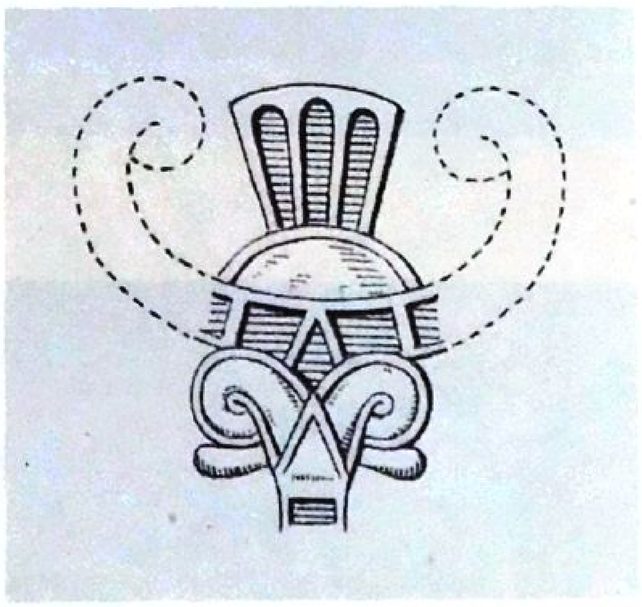

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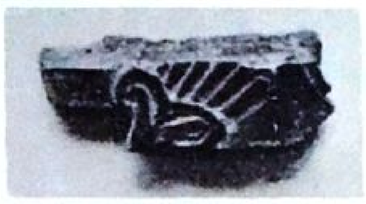

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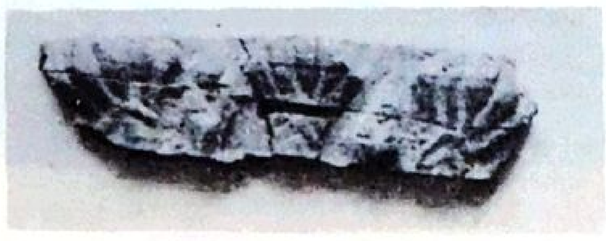

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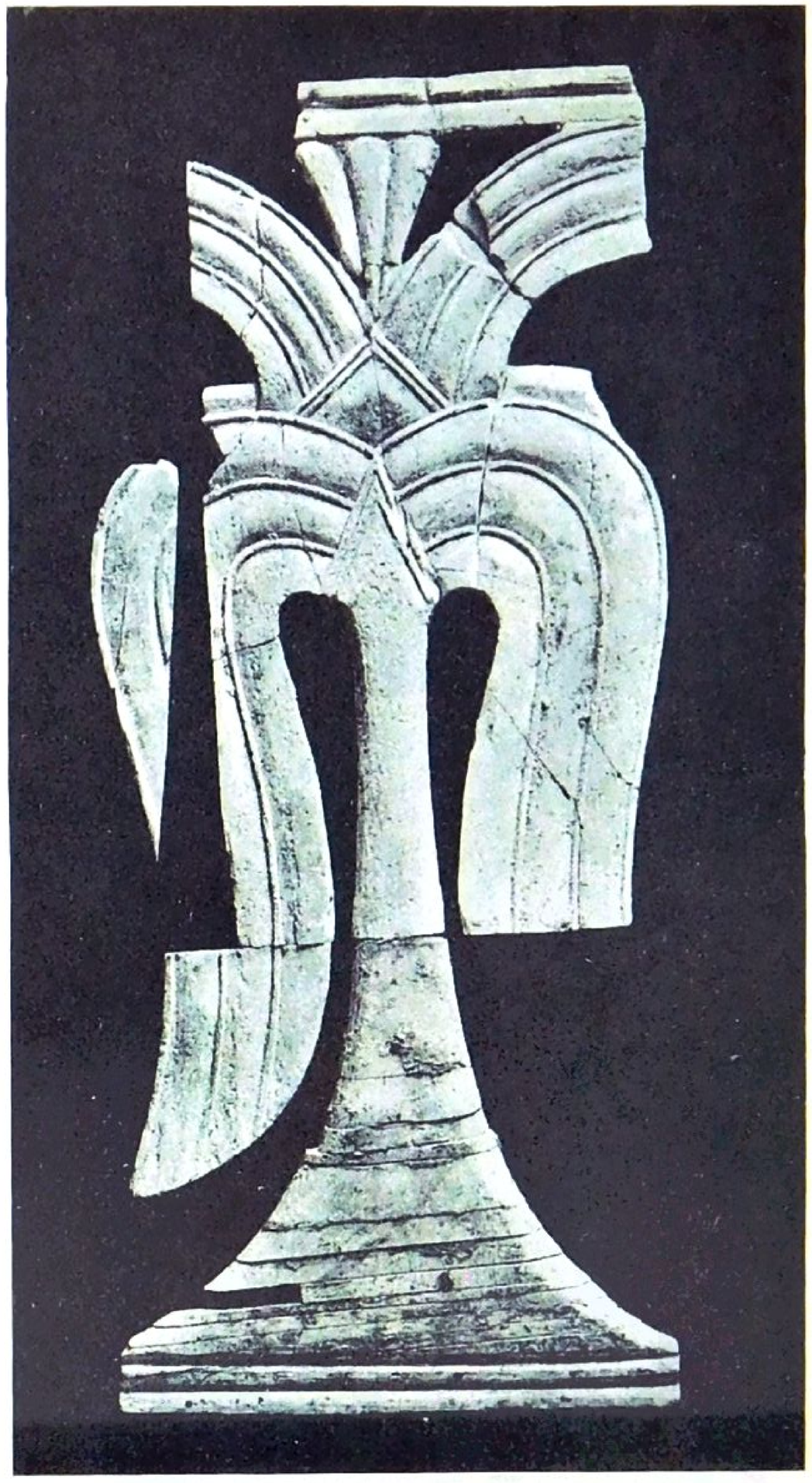

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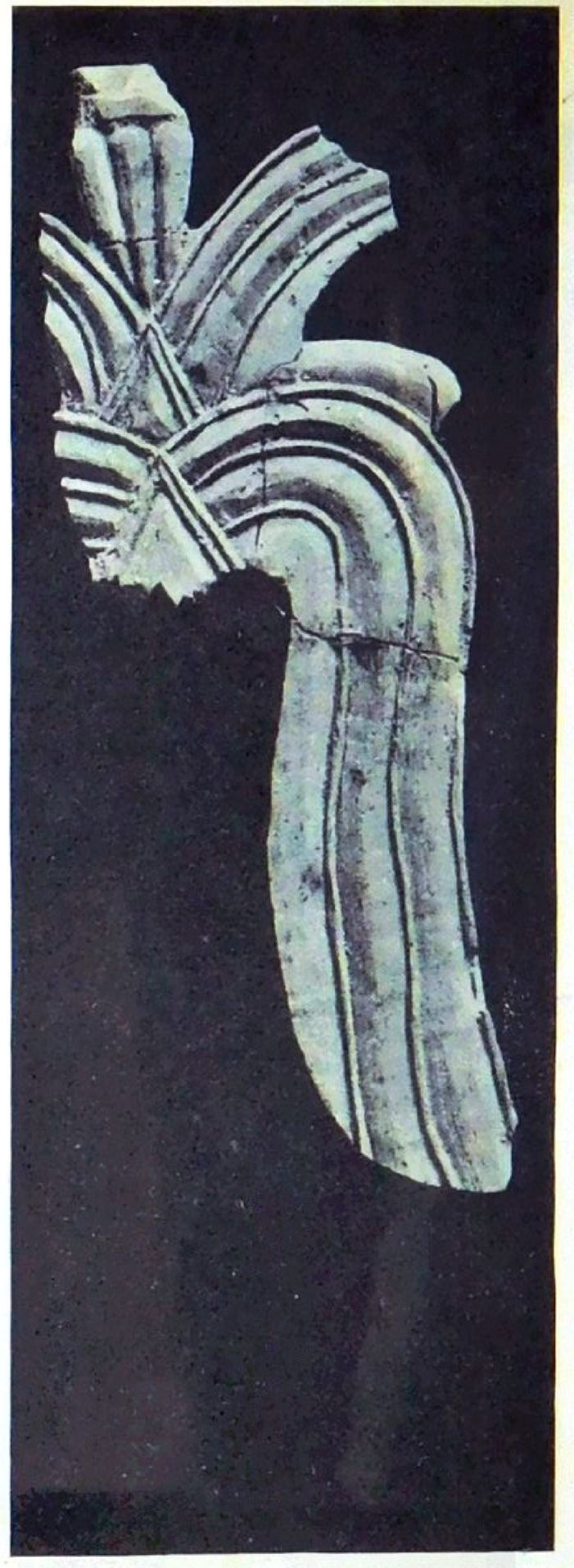

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PALMS WITH DROOPING FRONDS I.

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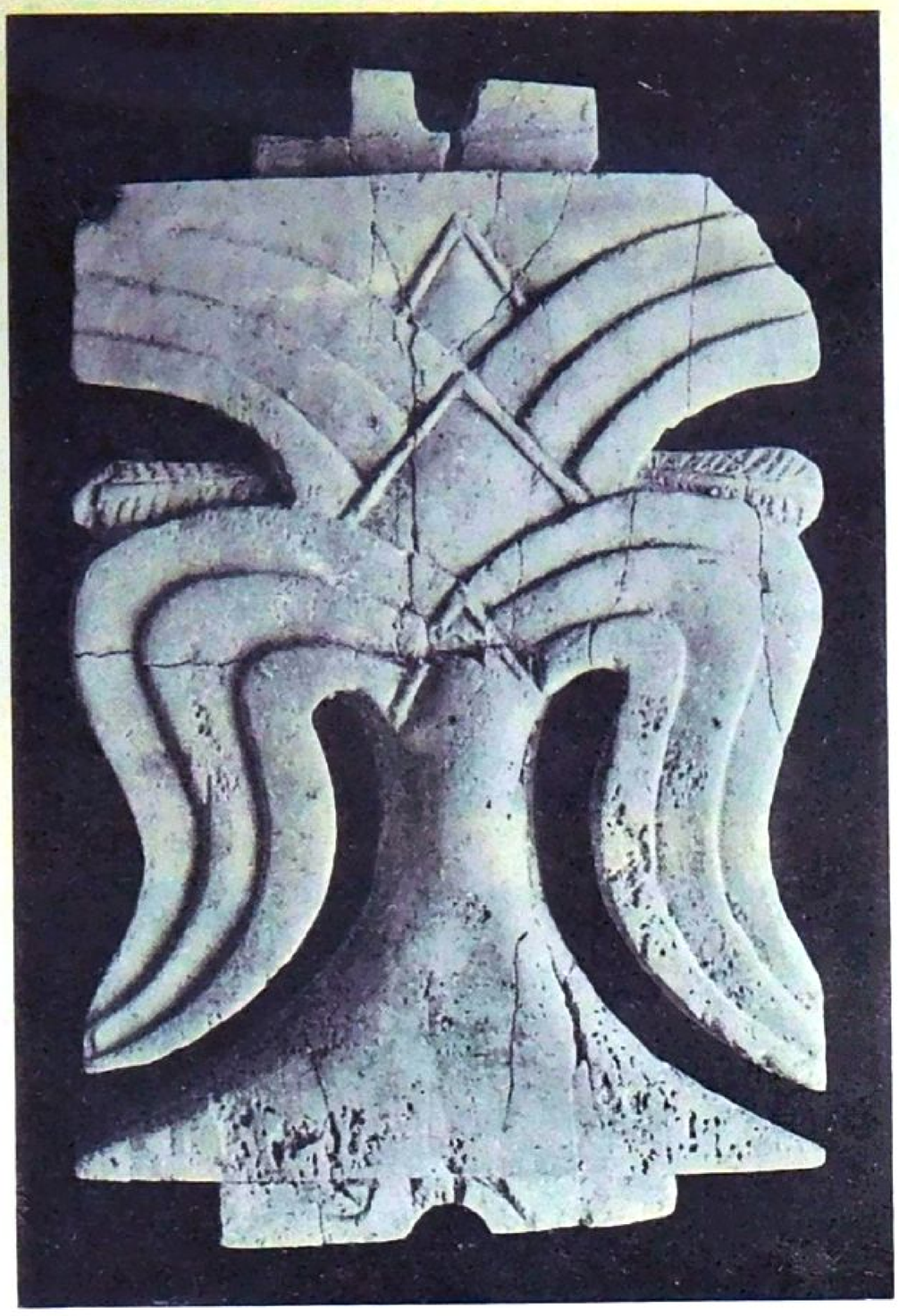
2

3

PALMS WITH DROOPING FRONDS 2.



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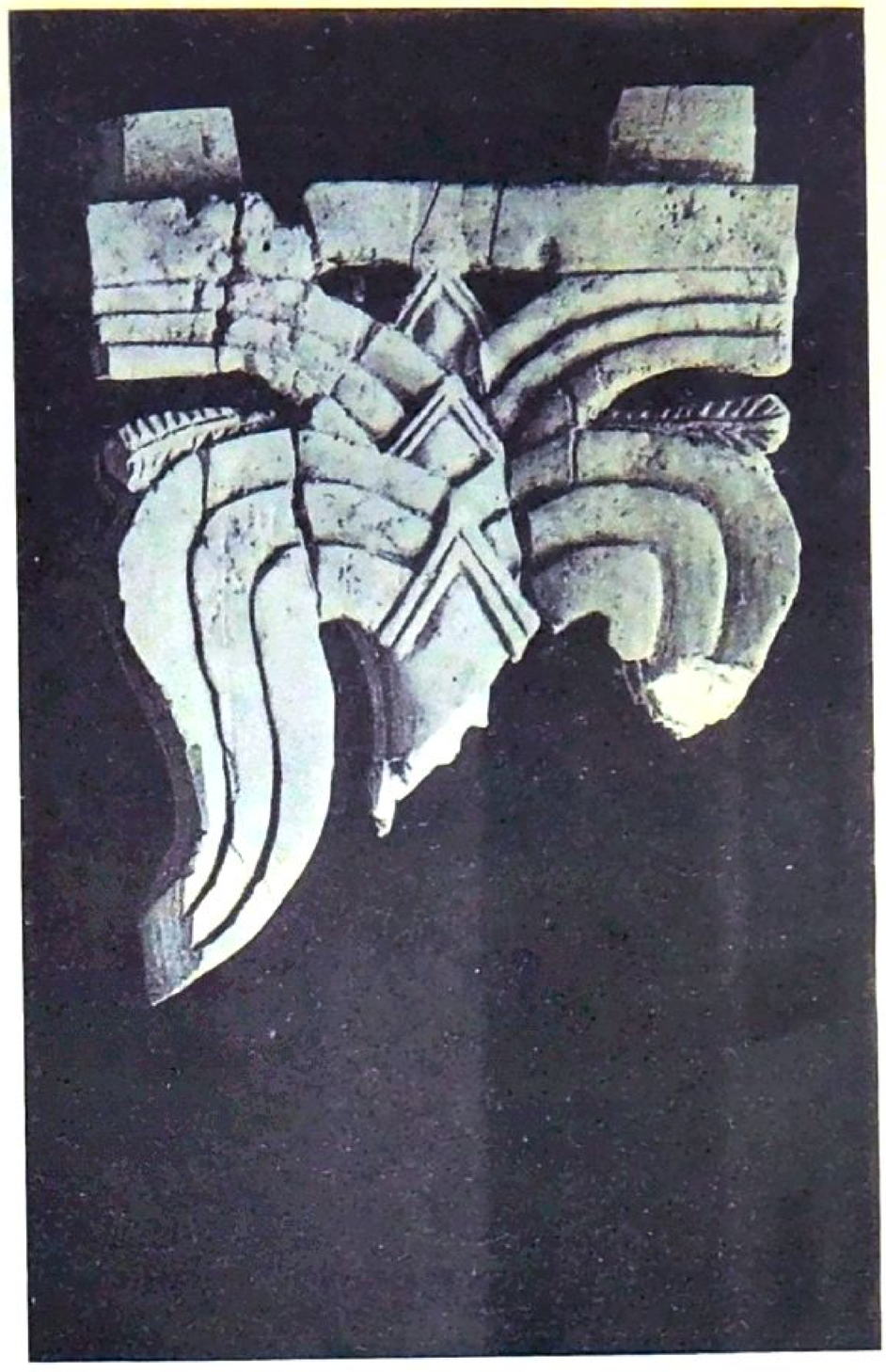

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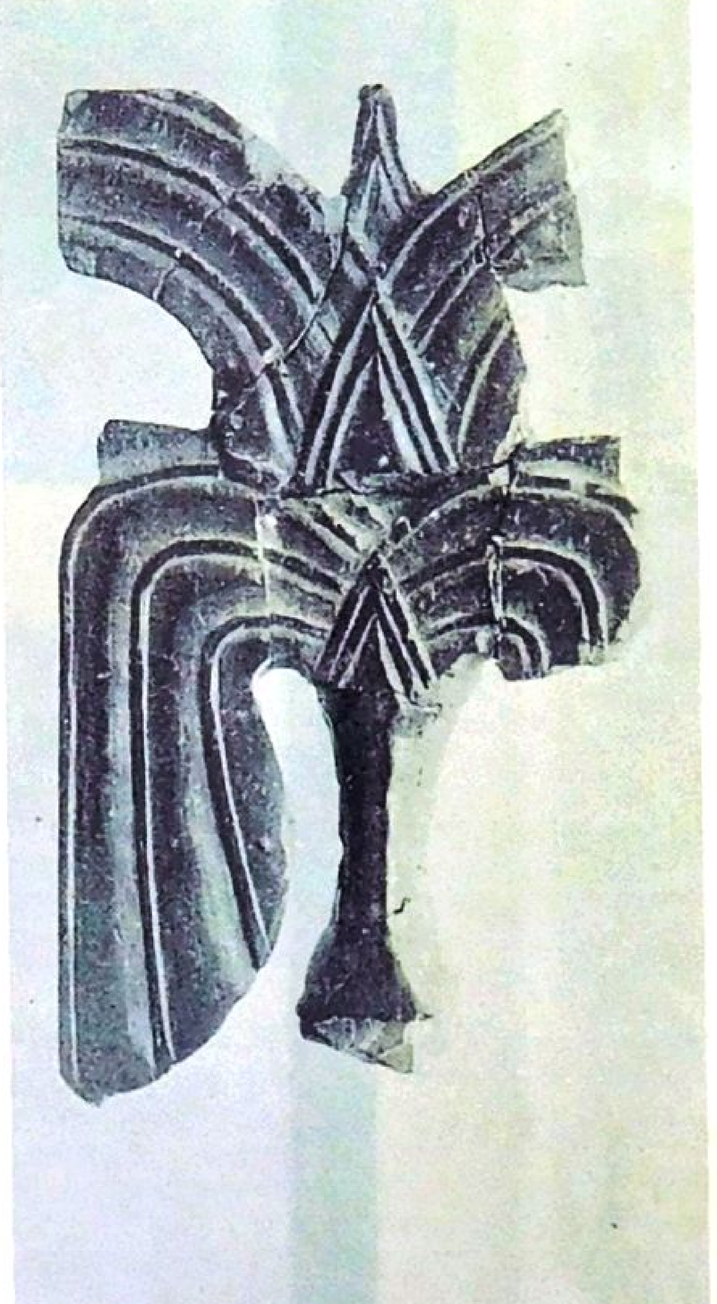

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PALMS WITH DROOPING FRONDS 3.

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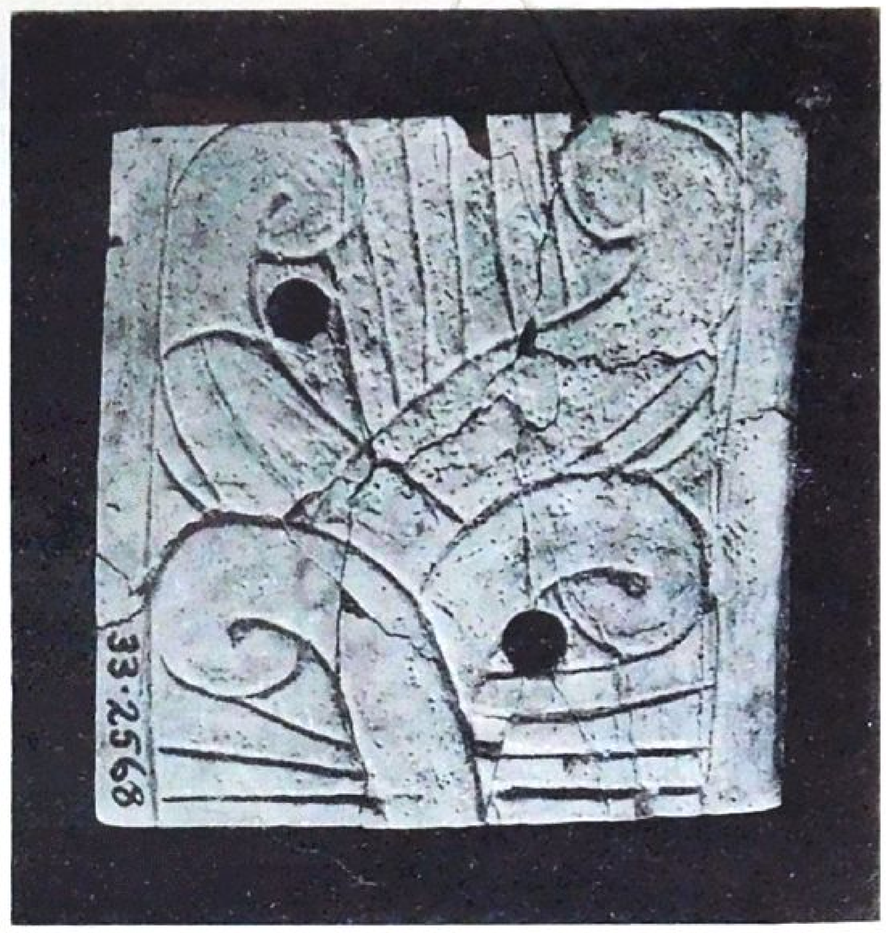

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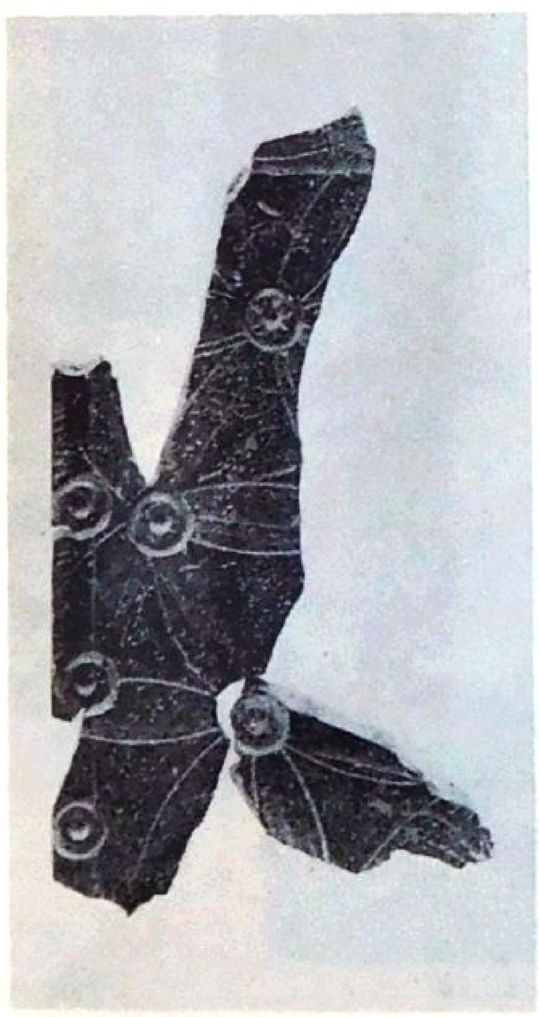

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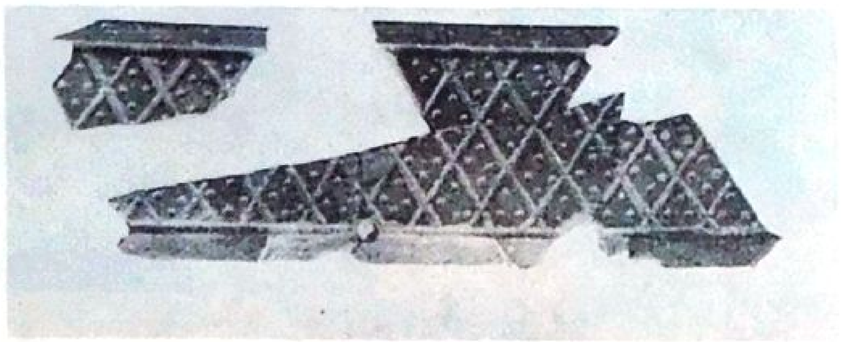

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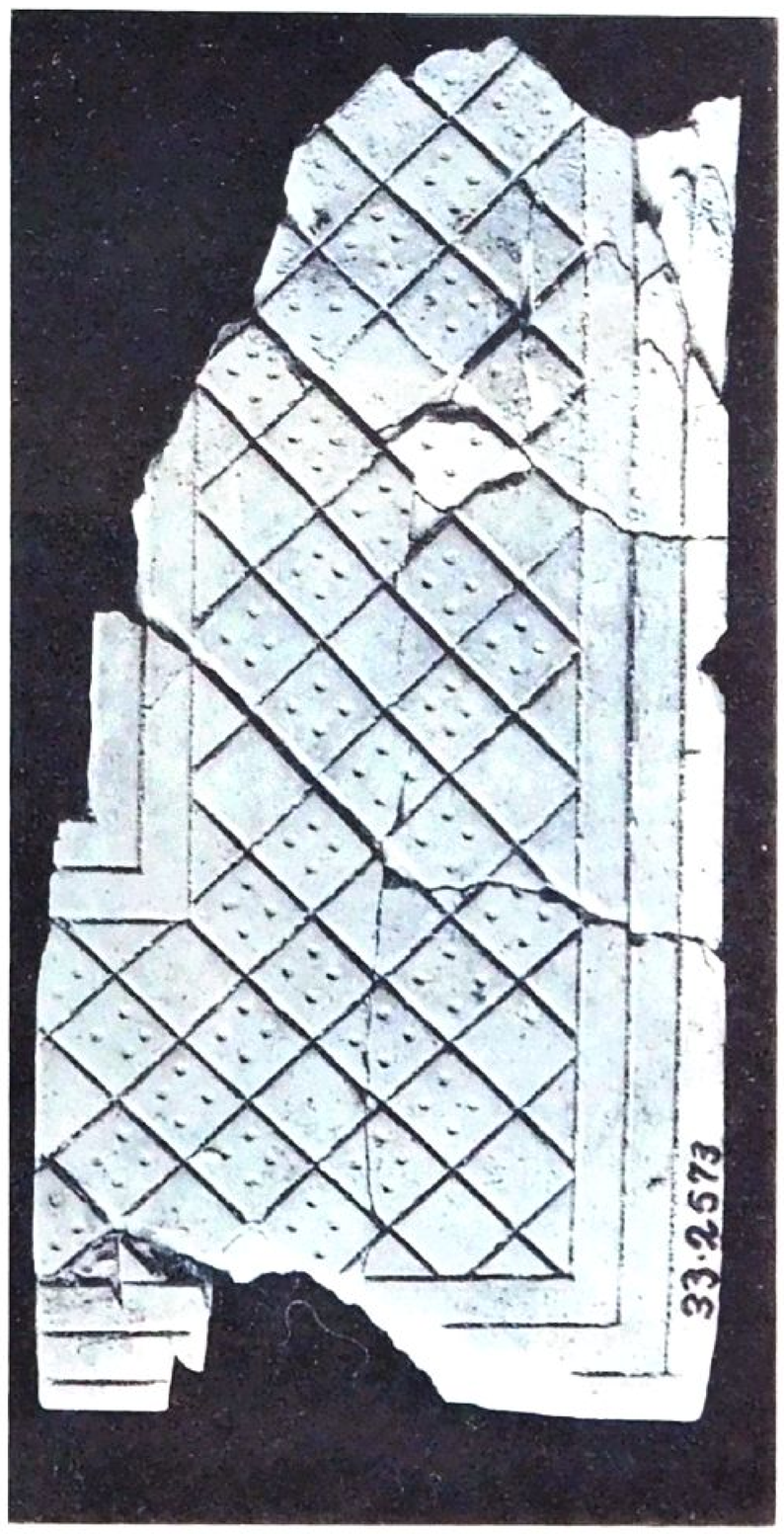

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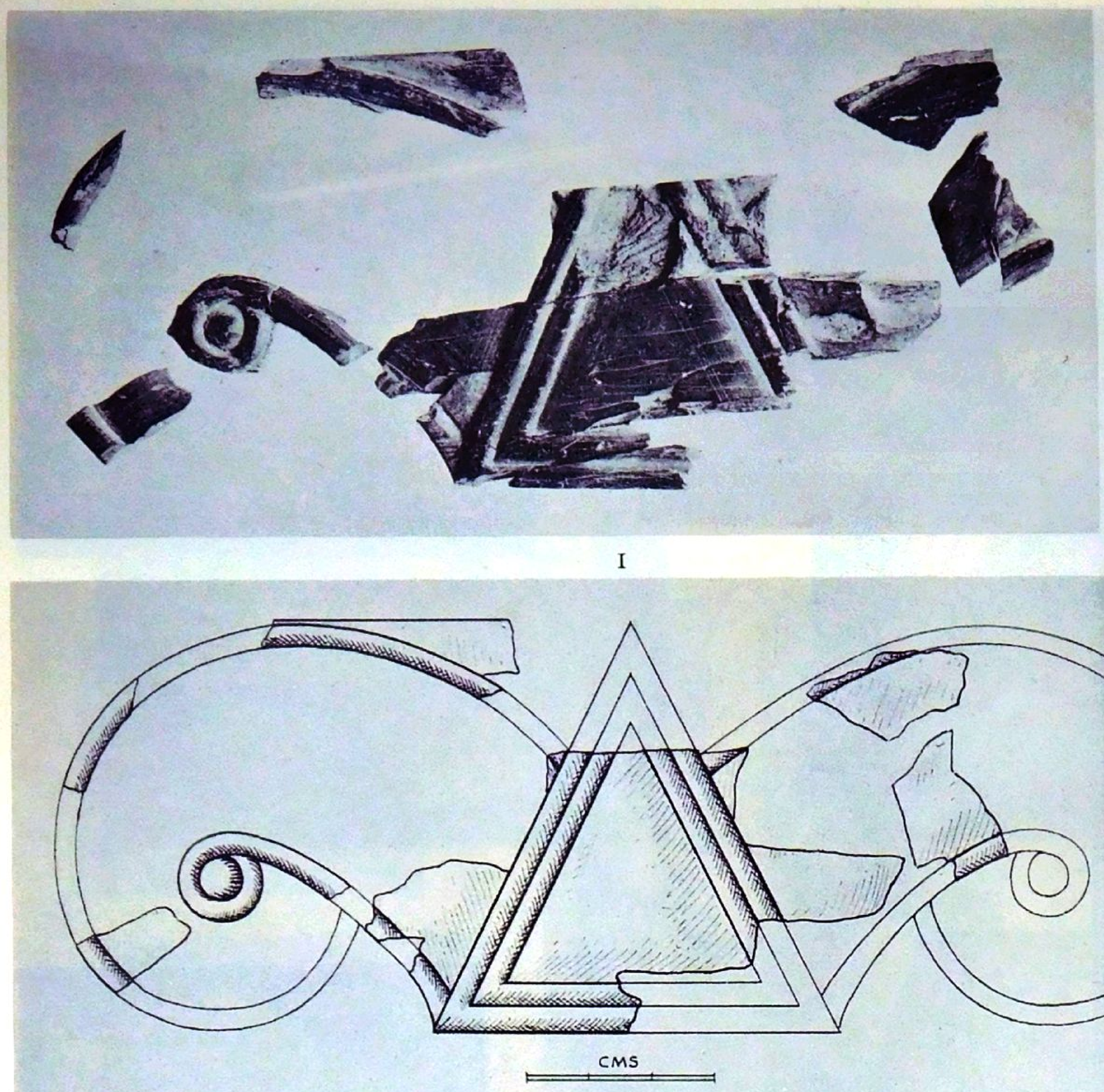
BORDERS



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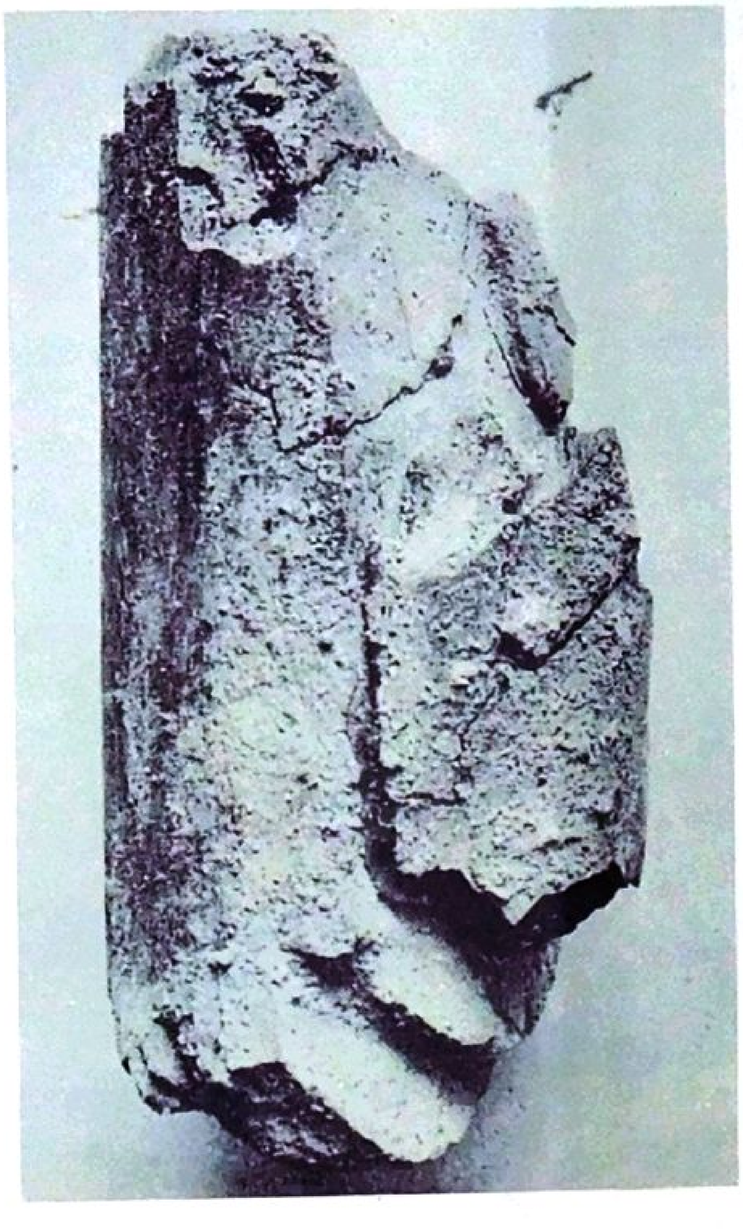

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A CAPITAL : URAEI : A TUSK FRAGMENT

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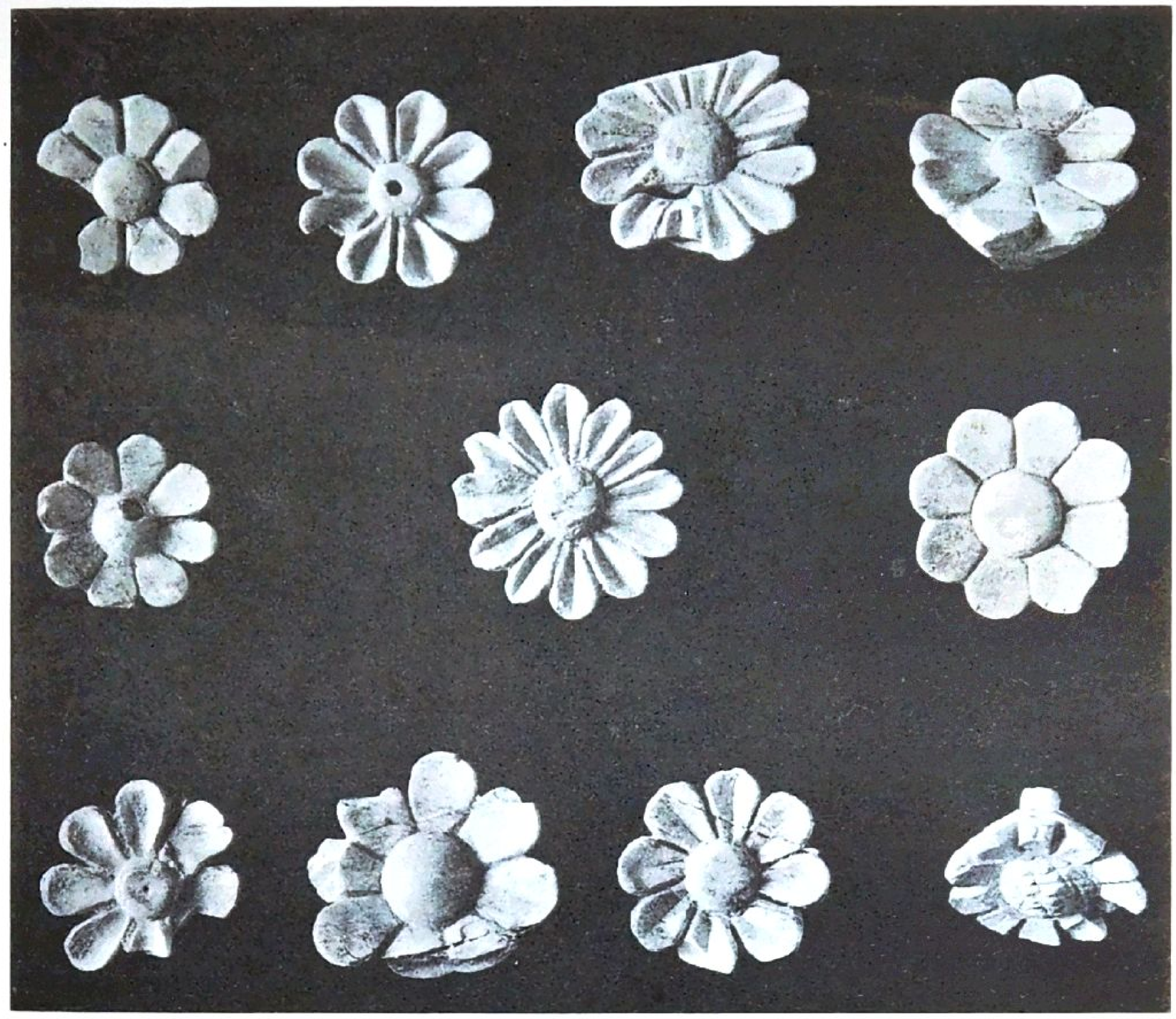

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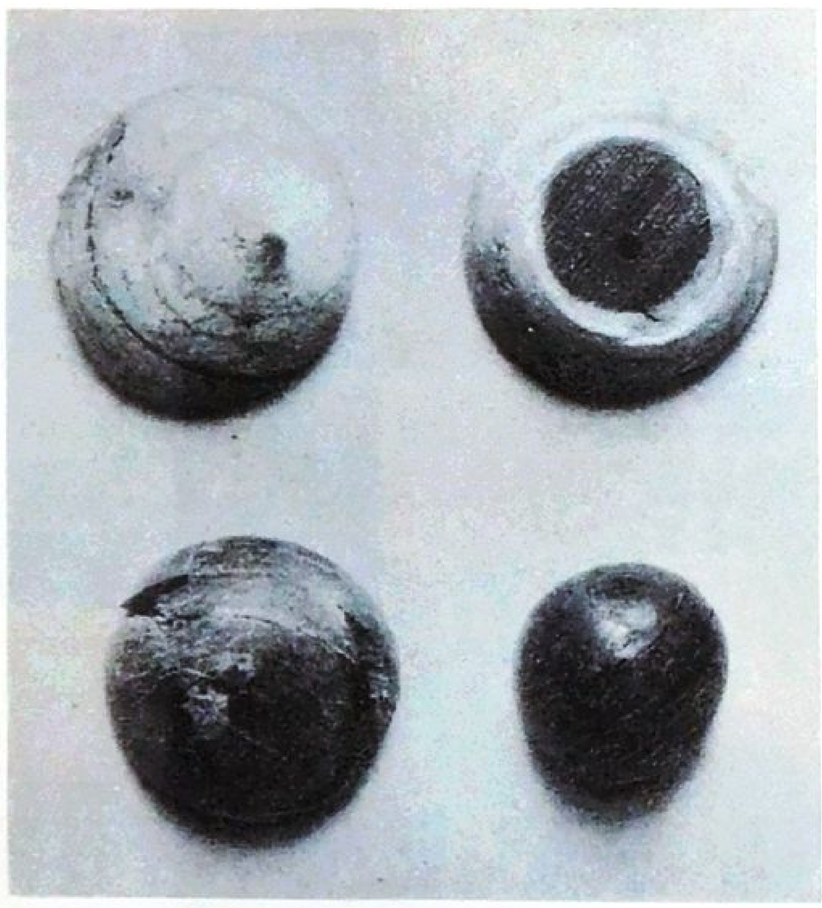

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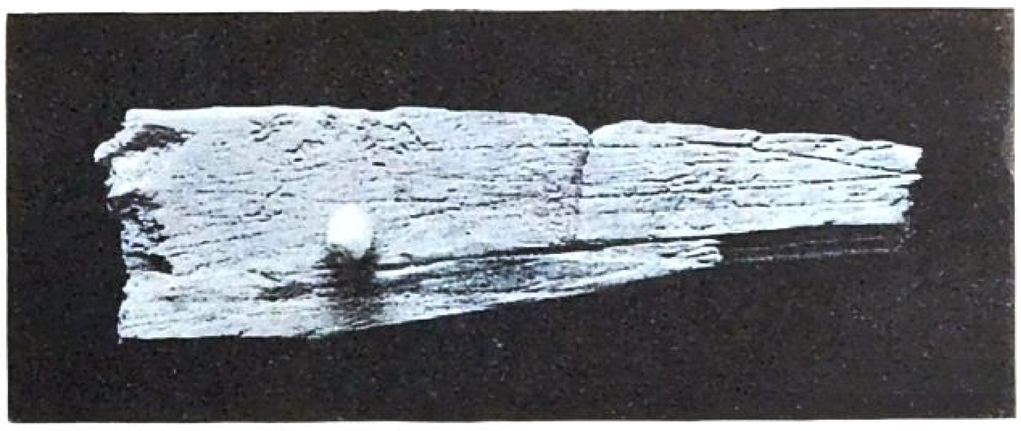

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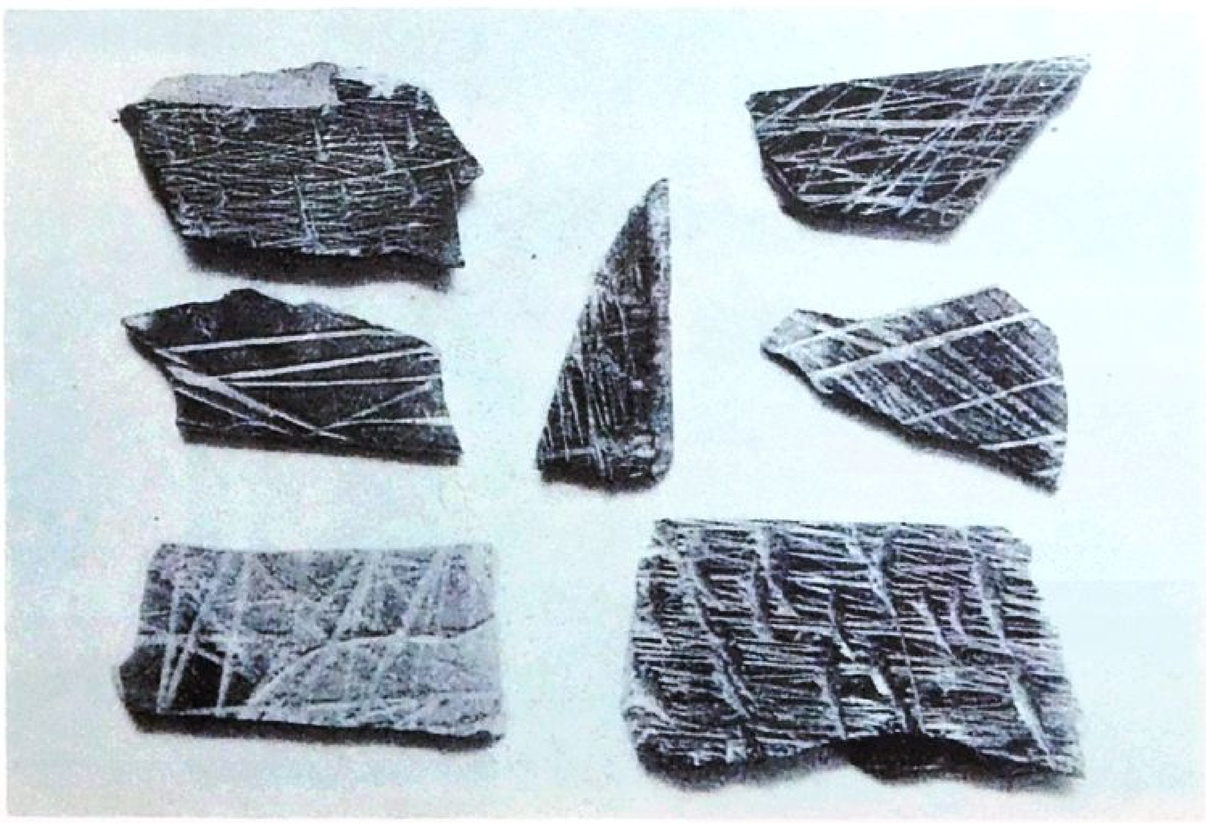

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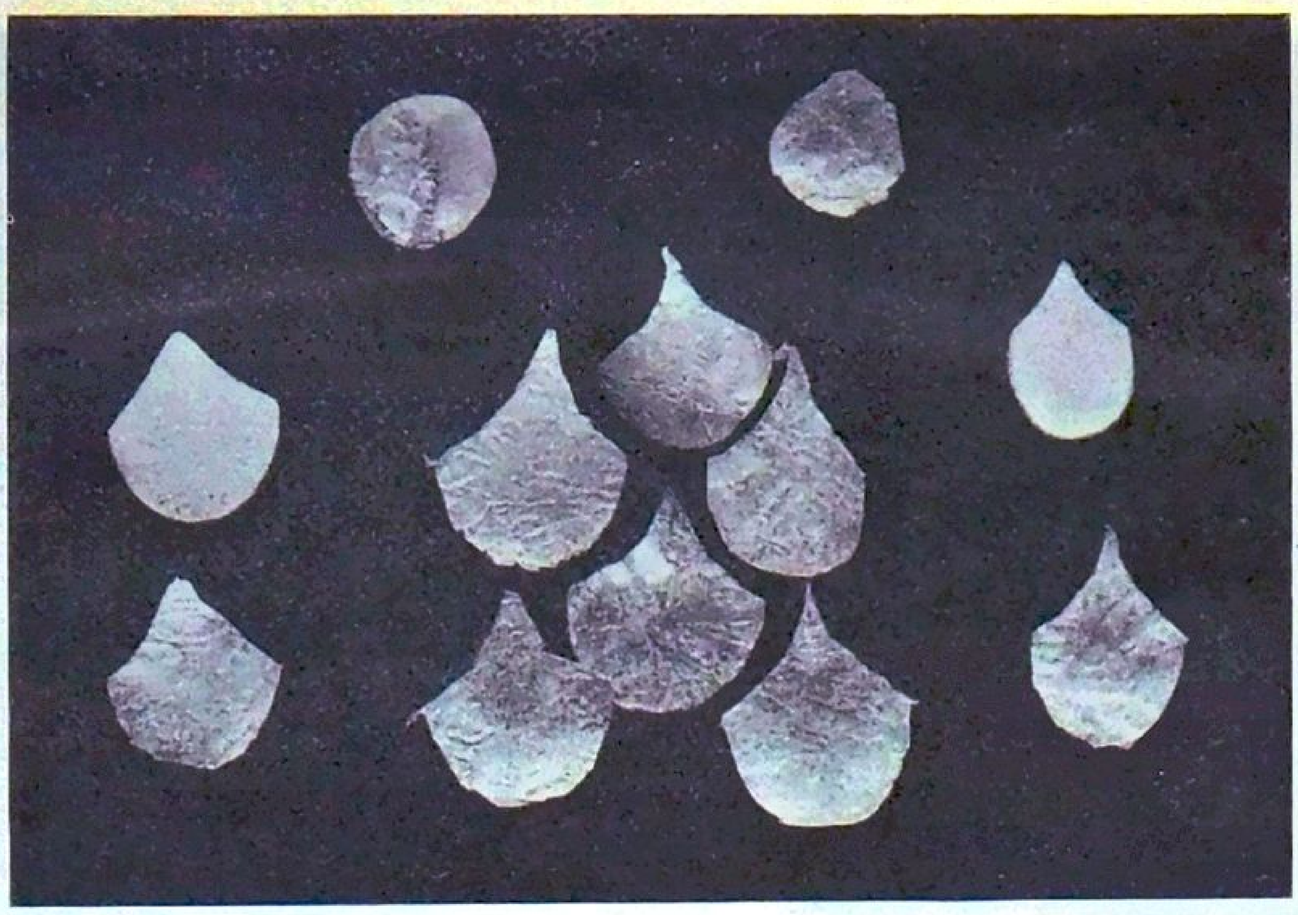
DAISIES, WHORLS, KNOPS AND CONSTRUCTIONAL FRAGMENTS



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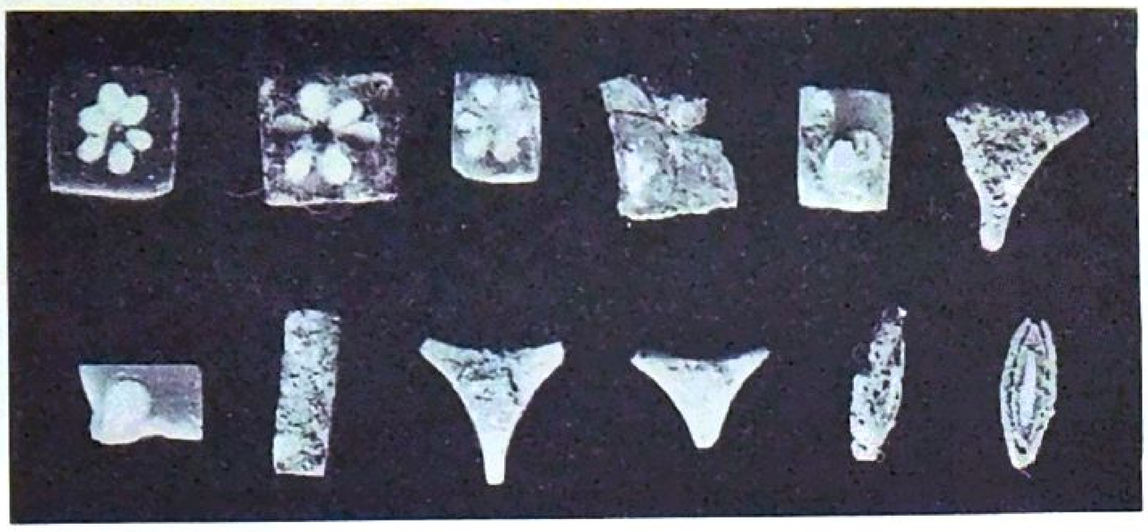

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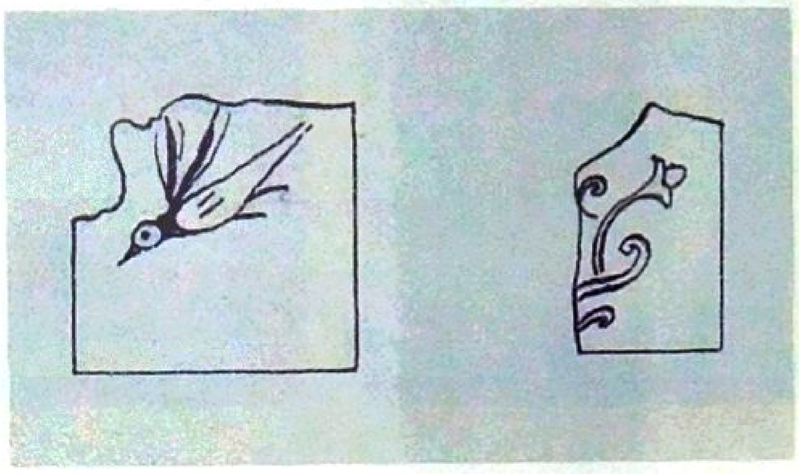

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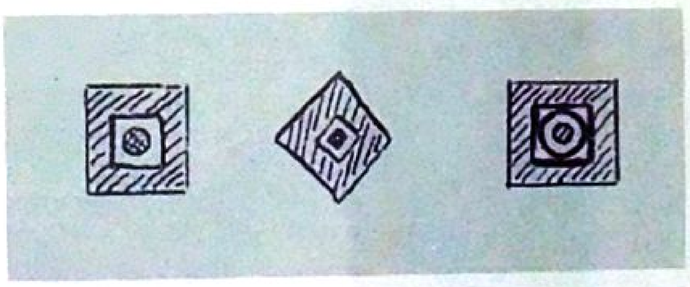

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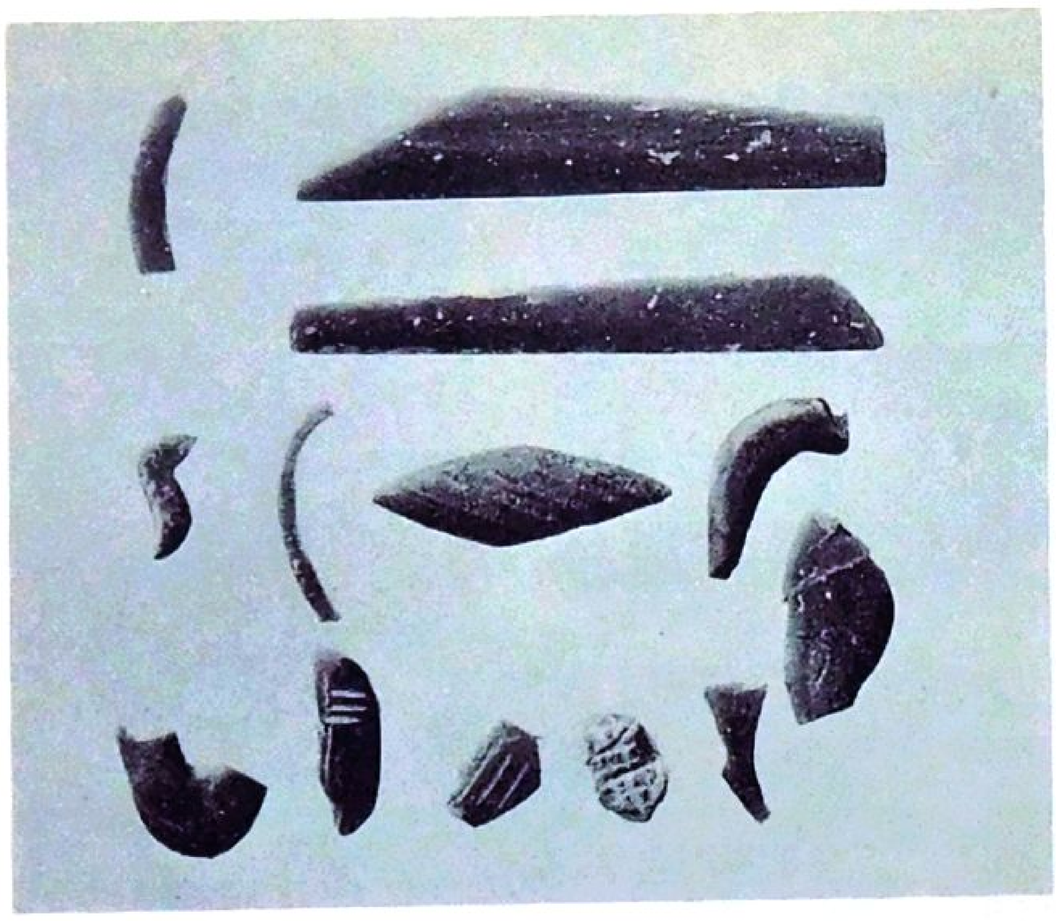

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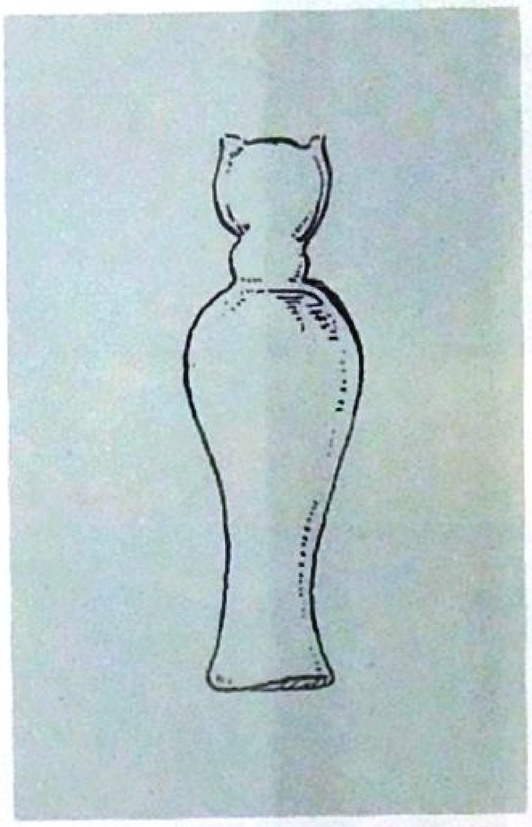

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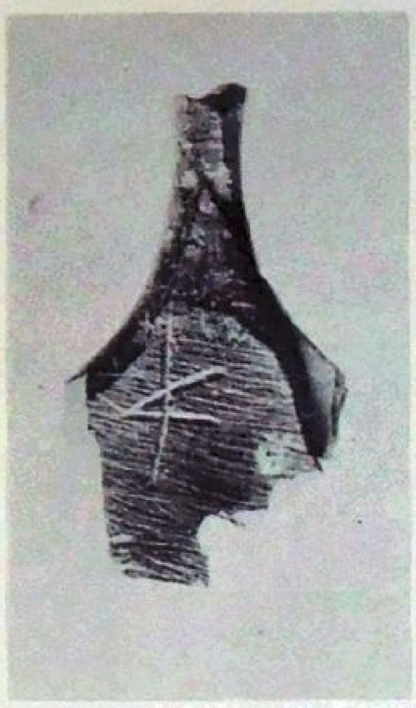
GOLD FOIL AND INSETS



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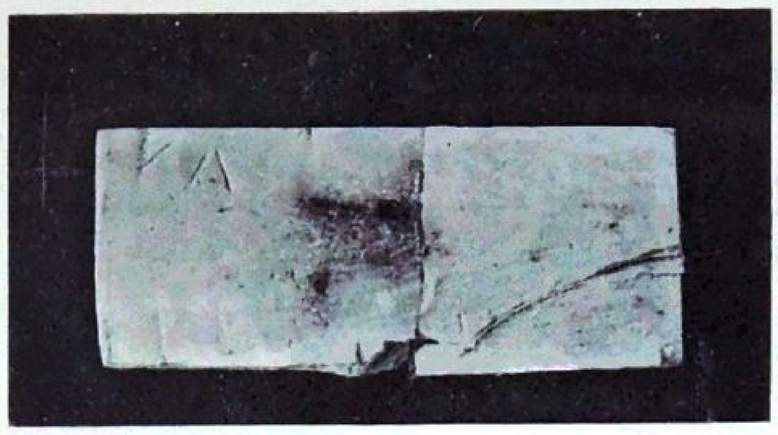

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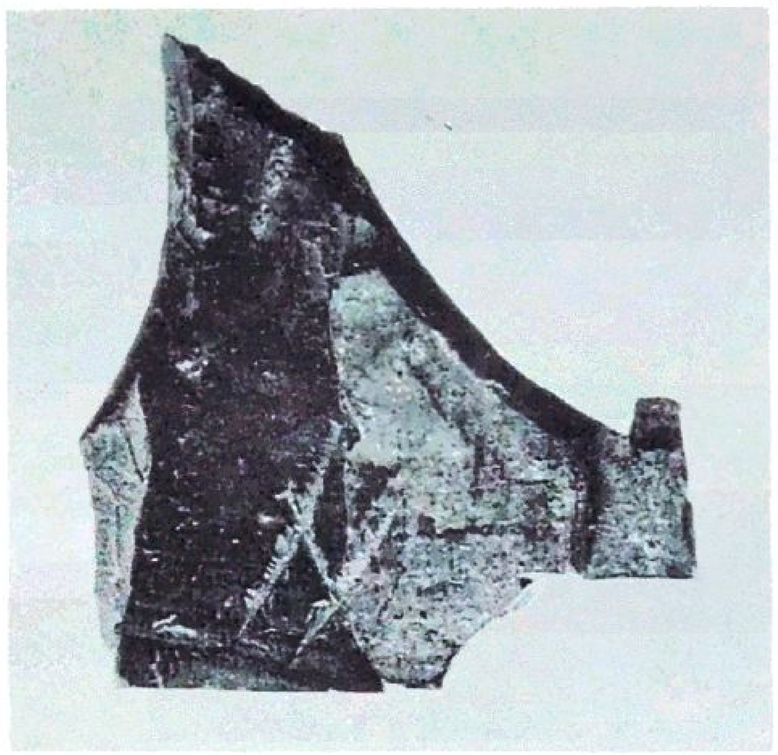

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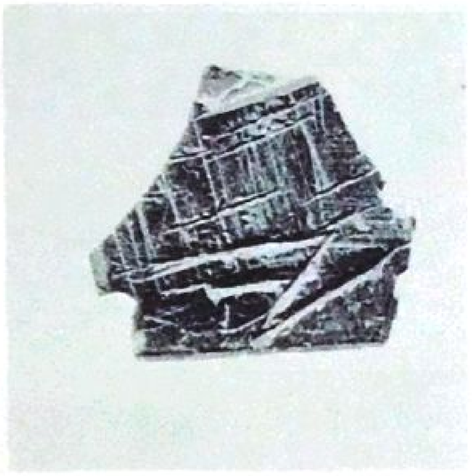

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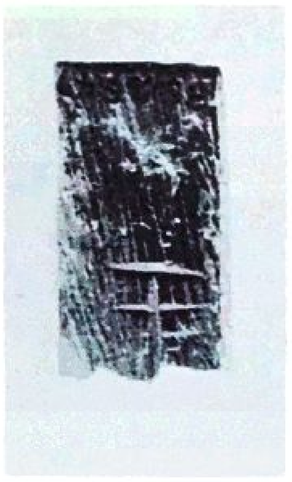

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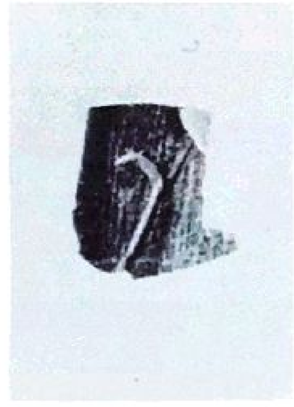

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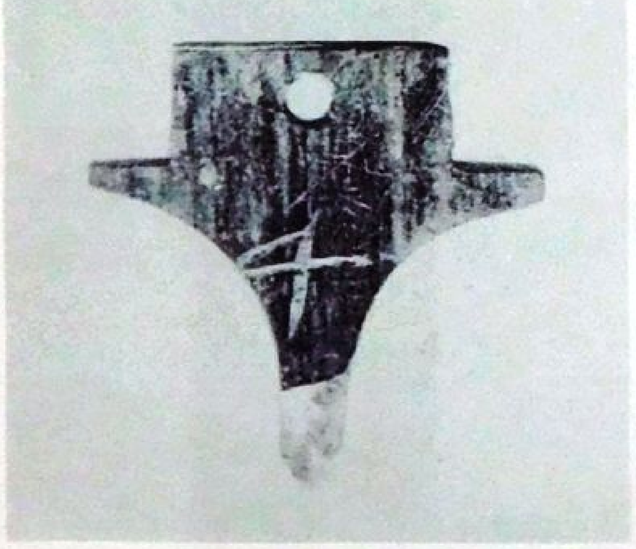

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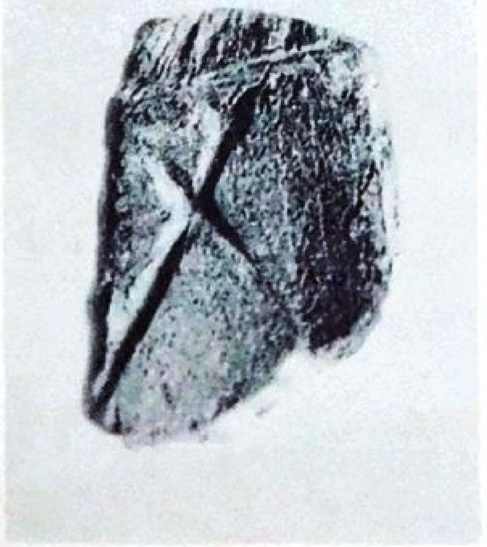

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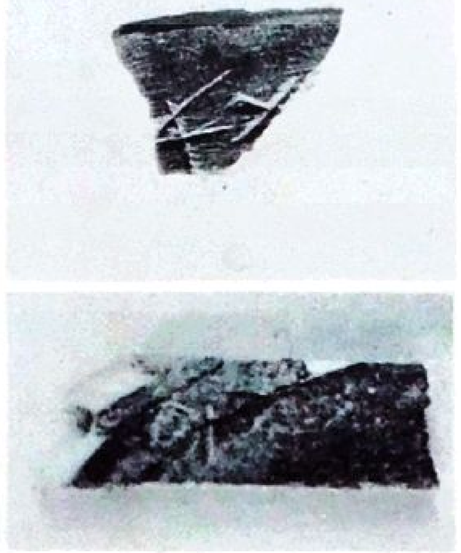

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LETTERS