

SARDIS



Fragmentary tile with horses and dog

SARDIS

PUBLICATIONS OF THE AMERICAN SOCIETY FOR THE EXCAVATION OF SARDIS

VOLUME X

TERRA-COTTAS

Part One

ARCHITECTURAL TERRA-COTTAS

By

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PREFACE

THE terra-cottas found in the excavations at Sardis suffered in the destruction of the house and in the injury to the site that occurred during the military engagements between Greeks and Turks in this vicinity. Some of them were damaged, others vanished. The present study is based on the results of excavations made by the author in 1922, and on available records of earlier excavations. The colored plates are reproductions of water-colors painted by Mrs Shear. The typographical arrangement of the book has been designed by Frederique Warde, of London, whose intelligent assistance is gratefully acknowledged.

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ARCHITECTURAL TERRA-COTTAS

CHAPTER I

Introduction

AT the time of the Ionian revolt in Asia Minor, 499 B.C., the city of Sardis was an easy prey to flames because the houses of the city were, for the most part, constructed either wholly of thatched reeds, or of bricks with a thatched-reed roof. The result of the recent excavations at Sardis has tended to corroborate this statement of Herodotus (V, 101), for the temple of Artemis and other public buildings have been discovered, as well as numerous tombs, but practically nothing has been brought to light that could be interpreted as pertaining to domestic architecture. However, in various parts of the site, terra-cotta slabs with decorations in relief were found, which, in most cases, were used architecturally to form a decorative sima, and perhaps in a few instances may have served as part of a pedimental design, or as acroteria attached to a roof. The size of the slabs, most of which have an approximate height of twenty to twenty-five centimetres, indicates that they belonged to small buildings, and as many of them were found in an area where they lay in proximity to rough rubble foundation walls it is probable that the houses were built of wood or of sun-dried bricks and were adorned with these brightly colored terra-cotta architectural accessories.

Three of the twenty-five tiles selected for description in this book are of uncertain provenience, as far as concerns their exact location on the site. These are Numbers 2 and 13 which were acquired for the Louvre, and Number 1 which was brought to the house of the Expedition by one of the workmen, who had received it from other hands and could not ascertain the place where it was first found.¹ Another of the tiles, Number 3, was discovered in a ravine on the east side of the Pactolus river, about a quarter of a mile north of the temple of Artemis. With these exceptions the tiles here described were found in a restricted area on a small terrace lying at the foot of a hill containing many chamber tombs, located on the west side of the Pactolus, almost directly opposite the temple of Artemis. The terrace, which is about forty feet long, lies at the northern end of the hillock at a height of twenty-five feet

¹See H. C. Butler, *Sardis*, Vol. I, *The Excavations*, p. 78.

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above the bed of the river. The site is indicated by a cross (x) on the photograph reproduced as Figure 1, which gives a view from the Excavation House looking towards the west. The tiles were chiefly found in the northern half of the terrace, where they lay within, about and in front of some foundation walls of small rough stones. These walls, which are seen in the left foreground of the photograph of the view towards the east, showing the temple and the acropolis, given in Figure 2, are of the most ordinary type of stone-wall construction, and seem scarcely substantial enough to sustain the buildings for which the tiles were originally designed. For even though the walls were of wood or of sun-dried brick, a strong core would have been necessary to support the large heavy terra-cotta revetments. The walls may represent a later use of original building materials on the site of the earlier structure.

Types of Tiles

Roof tiles were found, both of the cover and the imbrex variety. They are of a shape similar to those from the temple of Apollo at Thermon which are illustrated, from Kawerau's reconstruction, in *Antike Denkmäler*, II, pl. 49.¹ The Sardis tiles are carelessly painted with broad strokes of a large brush dipped in red paint. In some cases a decorative stripe in a wide curve was added with a deeper red color. Besides the roof tiles there are several fragments with palmette ornamentation in relief that may have belonged to acroteria, and at least two pieces, Numbers 4 and 15, which, because of their larger proportions and the absence of a rear projection in the case of the better-preserved piece, seem to have been used on a small pediment. Most of the pieces, however, are from pedimental and lateral simas. Tiles with figurative decoration, Numbers 1 and 2, must have been placed in a horizontal position, but the suggestion of a water-spout is abhorrent to the metope-like arrangement of the scenes. The pieces, however, are not preserved to a sufficient width to warrant any safe deductions on this subject. This is also true of the tile with the galloping horses, Number 11. The member of the same decorative band which has a spout, Number 12, shows a different type of ornament, and indeed one ingeniously adapted to the presence of the spout. The design of the chariot group would be badly marred if a spout were placed in its midst, but here again so much of the piece is missing that its exact architectural relationship to its neighbor cannot

¹Compare *Ephemeris Archaeologica*, 1900, pp. 201 ff., and figs. 7 and 8; and Koch, *Römische Mitteilungen*, XXX, 1915, p. 63, fig. 27.

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be surely determined. Of the other tiles two types, of which specimens have been preserved practically intact, Numbers 8 and 16, certainly belong to pedimental simas. They have deep projections which provide for a generous overhang, but have no provision for a spout. The scheme of decoration of Number 16 is a series of panels with alternate star and scroll ornaments. But of this type of tile there are no less than four distinct variations in details of the designs or in the application of the colors. Even if it be assumed that tiles of the same type with minor differences might be used on the front and the back pediments of the same building, at least two structures are indicated by these four varieties. A third building must further be hypothecated for the type listed as Number 8. Evidence for the existence of several buildings is also furnished by the different kinds of sima tiles with spouts. Four distinct varieties of these were found, namely: Number 5, with a primitive egg-and-dart pattern; Number 21, with palmettes and lotuses; Number 23, with large lotus blossoms; and Number 12, with a rearing horse. The two tiles with the palmette and lotus design, Numbers 21 and 22, differ only in one detail of color distribution, which would not prohibit the possibility of their use on the same building; but the other types are so different that it seems improbable that any two of them were used together.

The Building

Körte, in his study of tiles of exactly the same type found at Gordion, gives an hypothetical reconstruction of the façade of the building for which they were designed.¹ He estimates the width of the structure in a proportional relationship to the height of the sima, deduced from the average of such proportions observed in eleven archaic temples and treasuries. With the exception of the two old Athena temples on the acropolis of Athens, which have unusually low simas, the average for the other nine is 1:37.2. The lowest proportion is 1:30 for the temple at Neandria in the Troad. Körte's figures for the building at Gordion are, of course, conjectural, as no tile was found there that was preserved to its complete height, and this was estimated to be 0.17 m. As the design of alternate stars and scrolls is practically identical with our Numbers 16 to 20 it is probable that about two centimetres should be added to Körte's figures for the height of the Gordion tiles. The average height of our Numbers 16 to

¹G. and A. Körte, *Gordion, Jahrbuch des Archaeologischen Instituts, Ergänzungsheft V*, 1904, p. 168.

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20 and of three other fragments of the same series which preserve the full height of the tile is 0.197 m. Körte's average proportional relationship of width, 1 : 37.2, applied to this would give a building something over seven metres wide. But Körte believes that the smaller proportion existing in the temple at Neandria, 1 : 30, more nearly applies to the structure at Gordion, and if this were also true at Sardis the width of the building there would be reduced to a little less than six metres. As the other types of sima found at Sardis, represented by our Numbers 21 and 22, are approximately of the same height they should belong to a building of about the same width. But a structure of a slightly different size is indicated by the sima tile Number 9 which has a height of 0.181 m., and by Numbers 11 and 12 with their height of 0.24 m. As the various types of tiles found on the Lydian terrace lay in close proximity to one another and were often intermingled, the four conjectural buildings from which they came presumably stood close together. These buildings were placed directly in front of a hillside in which were many chamber tombs, and as this section of the site was apparently used only for burial purposes the buildings also were presumably devoted in some way to the cult of the dead, serving either as mausolea or as treasure houses for sepulchral gifts.

Evidence for Age

As the result of a comparative stylistic study of the tile in the Louvre, listed below as Number 2 in this catalogue, M. Radet dated the piece at the end of the seventh or the beginning of the sixth century B.C.¹ A similar study of our tile Number 1 led me to assign it to approximately the same period.² The chronological conclusions of Radet are accepted by Koch,³ and there is little doubt that the stylistic deductions have correctly determined the age of this type of tile. But nevertheless it is of great importance to obtain confirmation of this chronology outside of the sphere of style. The excavations on the Lydian terrace in 1922 revealed evidence for dating of a threefold nature. The tiles were scattered freely over this area, sometimes close to the surface, or again buried at various depths to a maximum of one and a half metres, and no evidence from stratification was anywhere discernible. But fortunately the objects found associated with the tiles provided important comparative material. Everywhere among the

¹Cybill, *Etude sur les transformations plastiques d'un type divin*, p. 32.

²*American Journal of Archaeology*, XXVII, 1923, p. 145.

³*Römische Mitteilungen*, XXX, 1915, p. 32.

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tiles were fragments of characteristic Lydian pottery. Most of these pieces were casual unassociated fragments, but from one group it was possible to reconstitute a beautiful and stately Lydian crater, of which only several small pieces are missing. This vase, which is reproduced from a water-color in Plate I, belongs to a distinctive type of pottery of which numerous examples have been found at Sardis. This ware will be fully described and discussed by Professor Chase in the volume on Lydian pottery which will presently be published in the Sardis series of publications. I shall refer to it here only in its bearing on the periodology of the tiles. Two vases of this ware, an oenochoe and a crater, were found at Sardis in 1912 in a tomb, No. 720, which contained among its rich offerings a Cyrenaic cylix and two Corinthian pots.¹ Professor Chase, in a study of two vases from this tomb,² presents good evidence for dating them 600—550 B.C. The presence of the Corinthian ware argues strongly for the earlier limit, and certainly this type of Corinthian vase cannot be later than the first quarter of the sixth century.³ As a corollary to the currency of Corinthian pottery at Sardis it is interesting to note that the crater here illustrated, found with the tiles, as well as numerous other examples found intact or in fragments, is of the type with columnar handles (*vase à colonnette*) which is a characteristic shape very popular among the potters at Corinth. The question of priority of influence is difficult to determine, especially as Sardis and Corinth were associated in friendly intercourse over a long period of years,⁴ but, in the absence of proof to the contrary, the fame of the Corinthian potters and the beauty and volume of their products would furnish presumptive evidence for believing that our crater was made at Sardis by Lydian craftsmen who were copying a familiar Corinthian shape.

The second testimony for age revealed by the excavations of 1922 is also furnished by fragments of pottery found with the tiles on the Lydian terrace. The sherds indicate at least two pots, one of which is represented by the selected pieces illustrated from a water-color in Figure 3. These are from a very large, thick-walled vessel, perhaps an enormous crater or an amphora or a huge bowl. On the white slip which covers the surface of the clay the animal and geometric decorations are painted in a brilliant red. The largest fragment preserves the

¹H. C. Butler, *Sardis*, Vol. I, *The Excavations*, pp. 119 to 121.

²*American Journal of Archaeology*, XXV, 1921, p. 114.

³Pottier, *Catalogue des vases antiques du Louvre*, p. 443; Perrot-Chipiez, *Histoire de l'art*, IX, p. 614.

⁴Ure, *Origin of Tyranny*, p. 187.

INTRODUCTION

forepart of a deer with lowered head. Beneath its neck and under the body are concentric circles, between the forelegs is a sort of irregular crossed square, and behind the right foreleg is a water-fowl. On the piece of the rim and on the two other fragments shown in the picture the concentric circles are placed closely together. The entire surface of the vase was evidently covered with designs on the *horror vacui* principle. The fragment of the second vase, which is illustrated in Figure 4, is of the same thick-walled type as the preceding one, but on the white slip the primitive pig and the design of concentric circles are painted in a brownish black color. The character of the decoration here employed and the technique of the ware are familiar from vases found on many sites. There is special resemblance to vases from Rhodes of the seventh and the beginning of the sixth century. On two oenochoes in the Louvre grazing deer and water-fowl appear, and the ornaments filling the background are similar.¹ All of the characteristic motives seen on our fragments, the grazing deer, the water-fowl, the boar, the squared design and the concentric circles are found on a beautiful bowl from Naukratis.² The date of the Naukratis ware is disputed, Gardner³ and Edgar⁴ placing it subsequent to 570, while Joubin⁵ assigns the earlier type, at least, to about 600. However, Ure is conservatively correct in referring its chief vogue to the seventh century and the first part of the sixth,⁶ and to this period the sherds from the Lydian terrace at Sardis must be assigned.

The last bit of evidence discovered in 1922 for dating the Sardis terra-cottas is based on the position in which several of the tiles were found. Two pieces with decorations in relief, Numbers 17 and 19 in the catalogue, and other plain roof tiles, carelessly painted, were used to form the sides and cover of a small sarcophagus that was found on the Lydian terrace at a depth of 1.35 m. below the surface of the ground. A view of this sarcophagus, taken from the east before the slabs were removed, is shown in Figure 5. The original hard surface of the ground ("stereo") served as the floor of the coffin, and on this was found a small skeleton

¹Pottier, *Catalogue des vases antiques du Louvre*, Pl. 12, Nos. A 314 and A 315; Perrot-Chipiez, *Histoire de l'art*, IX, p. 423, fig. 212, Pl. XIX. See also Pottier, *ibid.* Pl. 52, No. E 658; and compare Buschor, *Griechische Vasenmalerei*, p. 78, fig. 58.

²Gardner and Griffith, *Naukratis*, part II, Pl. VI.

³*Naukratis*, part II, p. 49.

⁴*British School Annual*, V, 1898, p. 46.

⁵*Bulletin Correspondance Hellénique*, XIX, 1895, p. 82.

⁶*Origin of Tyranny*, p. 110, with references there noted.

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which lay with its head to the east. In the coffin were fragments of characteristic Lydian pottery. As the grave was on hard-pan and contained only sherds of the sixth century an early age is indicated for the tiles here re-used. Thus these three pieces of external evidence coincide in support of the conclusion reached on the basis of the internal evidence of style that the tiles date from the end of the seventh or from the beginning of the sixth century. In fact no object of any kind that could be dated later than the middle of the sixth century was found in association with the tiles on the Lydian terrace in the excavations of 1922, and all the tiles thus clearly belong to the period of the Lydian hegemony.

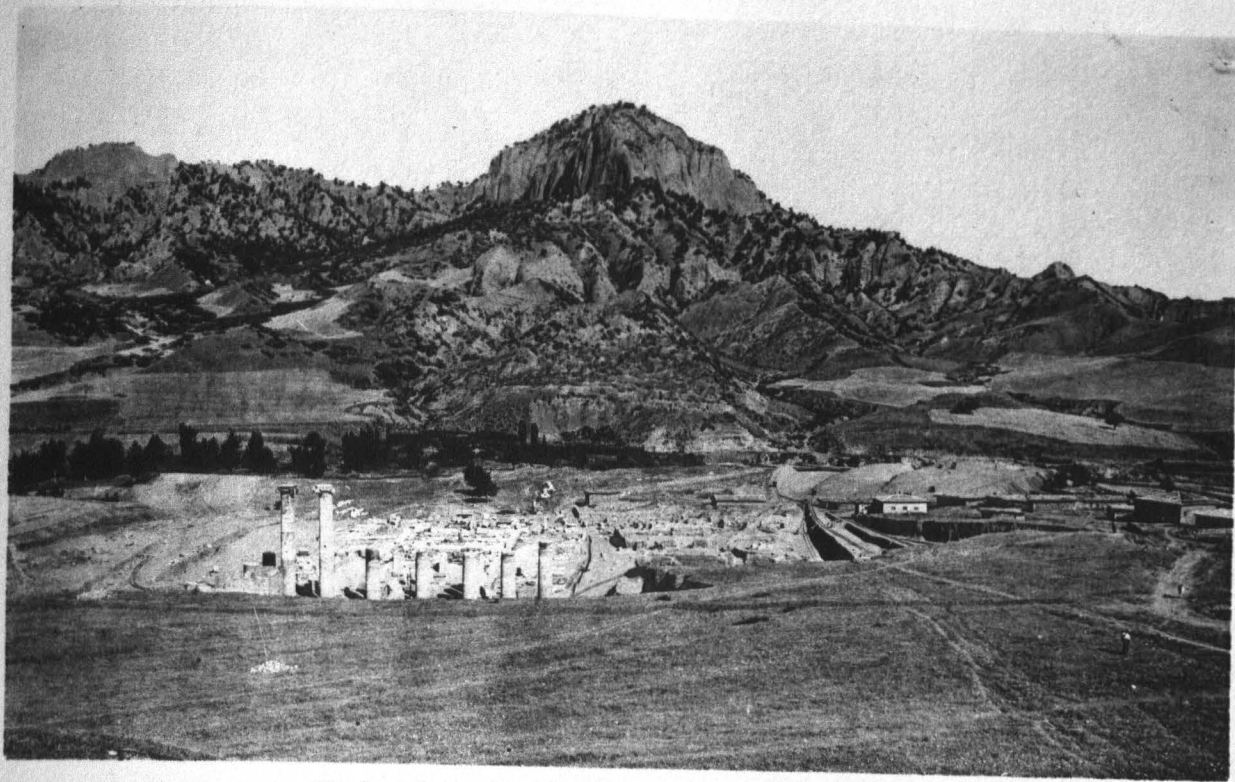
Arrangement of the tiles in this Catalogue

Although most of the tiles were found scattered over a restricted area, without any indication of their inter-relationship and with no evidence from stratification or otherwise for differences in age among them, it has, nevertheless, been possible to arrange them in three groups. The first of these groups includes three pieces, not found on the terrace, which are archaic in appearance and have a color scheme consisting chiefly of black on white, with the figures outlined in black. The characteristics of the second group, which includes Numbers 4 to 10, are a free use of a dark purplish red in addition to the black and white, and the presence of primitive geometric designs, and of early egg-and-dart patterns. The third group, Numbers 11 to 25, is marked by the appearance of a bright red color, in addition to the black, on the white ground, and by the more skilful execution of elaborate designs.

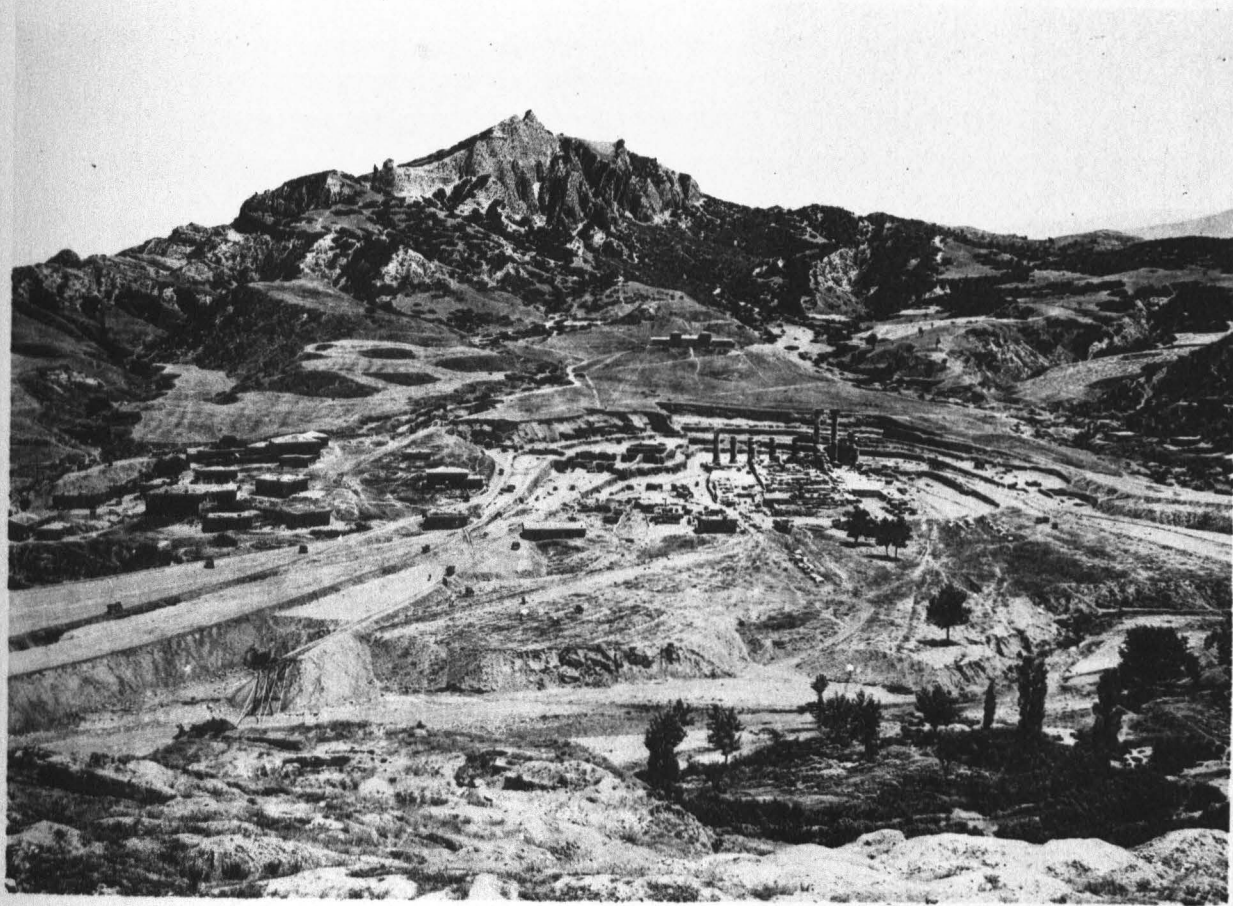
This arrangement is largely a subjective one and members of one group may tend to verge on its neighbor, but there can be no doubt that obvious differences of period exist between certain extreme examples, as between the Theseus-Minotaur tile, Number 1, and the galloping horses, Number 11; or between the great lotus pattern, Number 24, and the primitive egg-and-dart, Number 9. There are not sufficient remains, however, to permit the tracing of any course of development, and at most the difference in age cannot be very great.



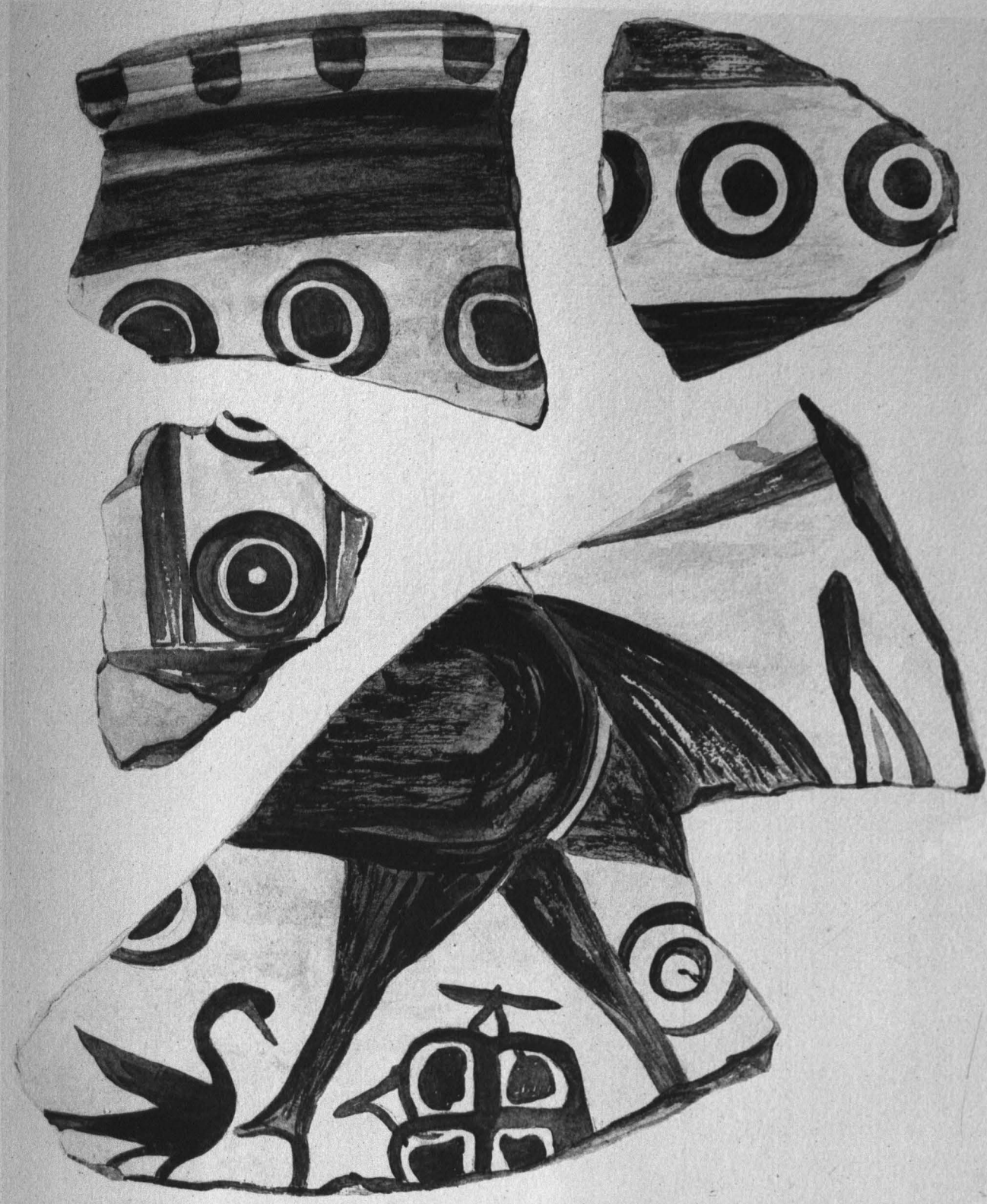
I. Lydian crater found with the tiles



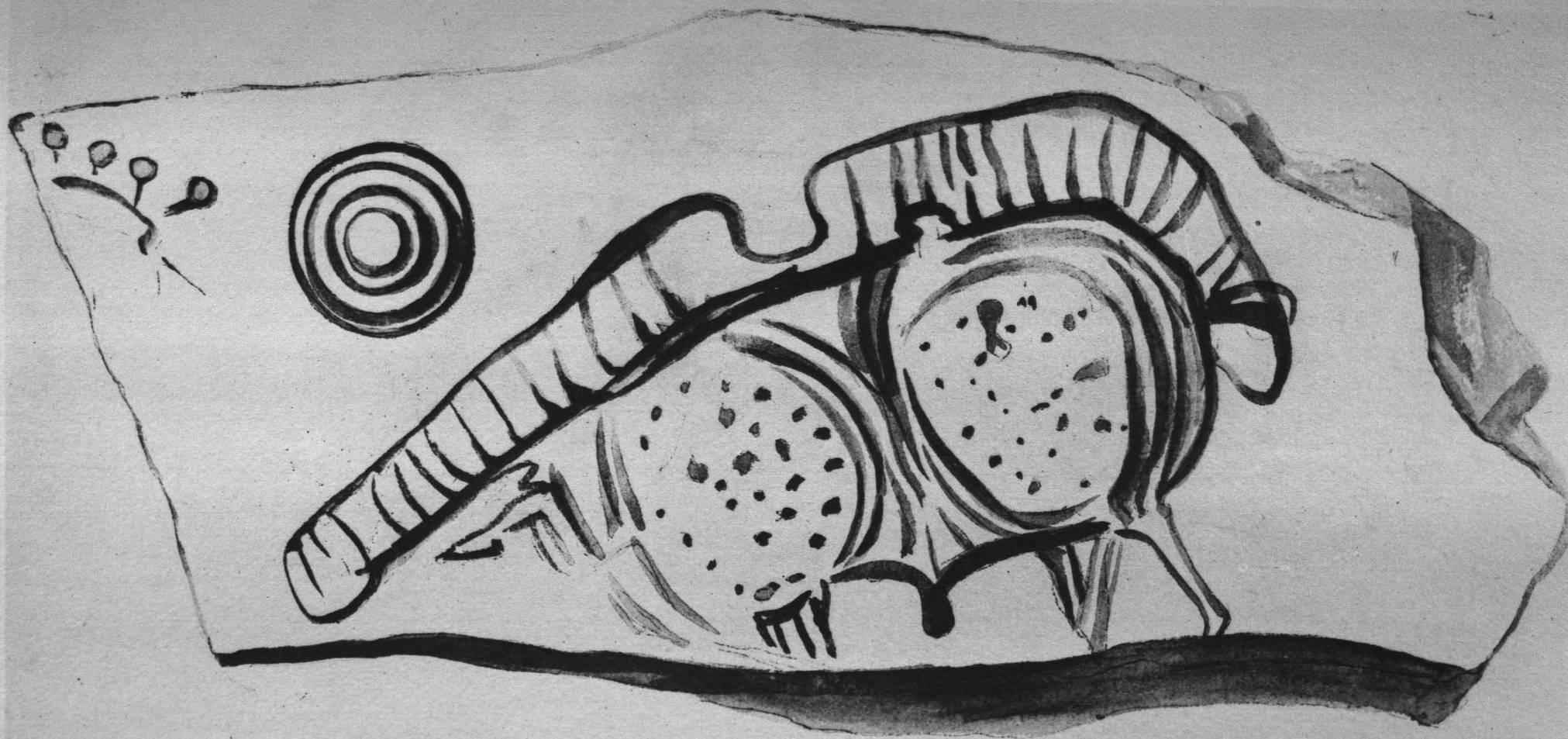
1. Hill of tombs and Lydian terrace (x). View from the east



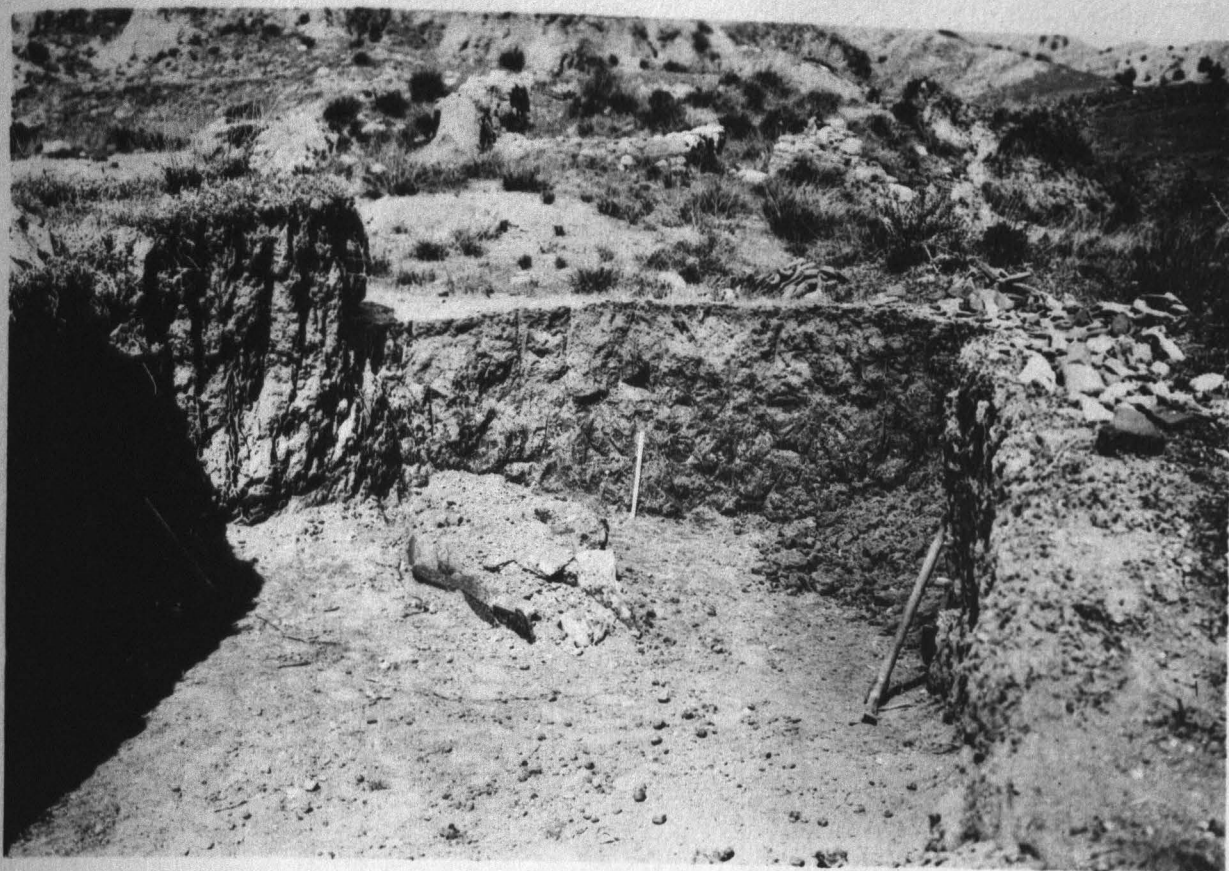
2. View of the temple of Artemis and the acropolis of Sardis. Lydian terrace in left foreground



3. Pieces of a large pot found among the tiles on the Lydian terrace
Reduced one-third



4. *Vase fragment from the Lydian terrace*



5. *Sarcophagus on the Lydian terrace constructed of architectural tiles*

CHAPTER II

The Tiles. Group I

THE characteristics of this group, which includes Numbers 1 to 3, are archaic style and the use of black paint on white, with the figures outlined in black. A dark red paint is sparingly used.

I. PLATE II. A fragment probably from a sima.

Dimensions: length, 0.24 m.; height, 0.135 m.; thickness at the top, 0.04 m. Inner width at the top of the left panel, 0.166 m.

The exact provenience of this piece is unknown, as it was not found in the excavations but, in the course of the season of 1911, was brought in by a boy attached to the work who had secured possession of it only after its passage through several other hands.

Published by H. C. Butler in *Sardis*, Vol. I, *The Excavations*, p. 77, ill. 74; and by T. L. Shear in *American Journal of Archaeology*, XXVII, 1923, pl. I, pp. 131 to 150.

Description. The terra-cotta is injured by a diagonal break on the right side and is broken at the bottom. At the top the original surface is in part preserved, and the upper left corner of the inner paneling is apparently intact. Although the left edge is much worn, it is, nevertheless, certain that we have here the original end of the tile because traces of paint are still visible. The slab is divided by a vertical moulded ridge into two panels, of which the left, which is preserved at the top to its full width, is decorated with a moulded relief representing a group of two figures in a combat scene. As the figure on the left has a human body with the conventionalized head and neck of a bull it is clear that the combat is between the hero and the monster who were known to the Greeks as Theseus and the Minotaur.

The two combatants stand erect, facing each other, in stiff archaic manner. The hero is on the right of the picture, looking to the left, with his head and body in full profile. The eye, in primitive fashion, is disproportionately large and is treated as if seen from

THE TILES

the front; the nose is prominently long and the chin is beardless. The hair on the top of the head is apparently represented as closely cropped, or else the head is covered by a tight-fitting cap or helmet. Indeed, the decorative bands visible about the brow seem rather more satisfactorily interpreted as ornamentation on a helmet than as a fillet encircling the head. Behind, the hair hangs down in a braid, terminating in a point on the shoulder. With his left hand Theseus has seized a horn of the bull-headed man standing rigidly opposite, while with his right hand he is thrusting a sword into the creature's breast. The Minotaur has broad horns, between which the ridge of the frontal bone is emphasized by an outline in black paint. It should be noted that the protuberance on the left of the head, balancing the horn on the right that is held by Theseus, seems to be the second horn and not an ear. The thick bovine neck is represented in profile, below which the upper part of the human body appears slightly turned to the spectator's left. The quasi-human hair, which hangs in a heavy mass on the neck, is arranged in a waved or stepped style. The creature has raised his left arm and gripped the hand about the forearm of Theseus near the wrist, while the right arm hangs down with the fingers of the right hand extended, but the surface of the tile here is so badly worn that it is impossible to tell if anything was held in this hand, or what the purpose of the gesture is. Both figures are clad in a garment with a thick, conspicuous girdle about the waist.

The right panel of the tile is broken away with the exception of the upper left corner, where is seen the tip of a gracefully plumed wing. Through the fortunate preservation of this corner it is possible to restore completely and correctly, beyond any doubt, this entire panel from a tile from Sardis that was acquired by the Louvre in 1906, and was published by M. Georges Radet in 1908.¹ Because of the intimate relationship between the piece in the Louvre and the new relief, through the kind permission of M. Pottier, the Louvre fragment will be here republished as Number 2 of the present series.

Technique. The clay is coarse and has many impurities, such as small pebbles. It is thickly strewn with tiny sparkling particles, such as are also noticeable in the clay of the pottery found at Sardis. As Lenormant in a statement made in 1870, quoted by

¹*Revue des Études Anciennes*, X, 1908, pp. 109 to 160.

GROUP I

Winter in *Figürliche Terrakotten*, I, p. lxx, attributed several terra-cottas to Sardis because there were particles of gold in the clay, it seemed desirable to submit to expert examination specimens of the present terra-cotta. Professor A. H. Phillips of the Department of Geology of Princeton University, after microscopic investigation, pronounced the shining particles in the clay to be mica. Professor N. H. Furman of the Department of Chemistry at Princeton made a quantitative chemical analysis of the clay which proved its composition to be as follows:

Silica (SiO_2)	62.23
Alumina (Al_2O_3)	19.01
Ferric oxide (Fe_2O_3)	7.95
Lime (CaO)	3.38
Magnesia (MgO)	2.61
Potash (K_2O)	2.92
Soda (Na_2O)	1.13
Moisture (105°C.)	0.12
Ignition loss	0.98
Total	100.33 ¹

As no trace of gold was found in the specimen examined, which contained numerous particles of the golden colored mica, it is probable that the specks noticed by Lenormant were also of the same character.

The decorative elements of this piece, as well as of the many other types of tiles from Sardis, were produced from moulds.² The entire surface was then covered by a slip of creamy white paint, on which the figures in this case were outlined by a narrow band

¹This table was published by me in an article in *Classical Weekly*, XVII, April 28, 1924, pp. 186 to 188. A comparison of this analysis with the analysis of three fragments of archaic terra-cotta from Campania, published by Herbert Koch in *Dachterrakotten aus Campanien*, p. 11, shows that the chief difference is in the proportional content of lime. The average percentage of lime in the pieces from Campania is 10.67. This percentage rises to 19.80 in a piece of Mycenaean ware analyzed by Professor William Foster, *Journal of the American Chemical Society* XXXII, Oct. 1910, p. 1263. Reference should also be made to analyses of Campanian ware made by Salvétat and cited by Brongniart, *Traité des arts céramiques*, I, p. 550. And with these should be compared the analysis of prehistoric pottery given by Wace and Thompson in *Prehistoric Thessaly*, pp. 259 to 261.

²An illustration of a mould of this kind is given by Koch, *op. cit.* Pl. XXVII, Nos. 3 and 4.

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of blue-black. The same black color is used for the eye of the Minotaur and for the cap of Theseus, but the garments of both figures are painted purplish red. However, on the hip of Theseus, below the waist line, there is no trace of any color except the white slip. Bordering the inner edge of each panel is a strip of dark paint that is black passing into a deep red. The vertical band dividing the panels is of the characteristic purplish red color, and the plumes of the wing in the right panel are alternately white and red, outlined in each case by the usual black band. The upper moulded border is ornamented with a series of black chevrons on the white ground. There are slight traces of red paint on the top of the tile and on the left end.

Stylistic considerations. In a stylistic study of this terra-cotta, published in the *American Journal of Archaeology*,¹ I have compared the group of Theseus and the Minotaur with eleven other representations of this scene, selected because of their relationship in style or in age. Of these eleven examples four were found in Etruria, three are on so-called Argive-Corinthian bronze strips, two are from Corinth, one of Ionian style was acquired in Greece, and one was found in Cyprus. Because of this distribution, and in view of the additional evidence afforded by the knowledge of the currency of the theme at Sardis it seemed to me to be logically permissible to trace the motive back through the sundry Etruscan and Hellenic ramifications to a central distributing point, which very plausibly would be Lydia, the patroness of literature and the fine arts in the Mermnadian period. Thence the retrogressive current would sweep farther east to Babylonian, Assyrian and Hittite sources for an ultimate origin. On page 148 of my article, to which reference has been made, the view is stated that the normal type of Minotaur does not occur in early Cretan discoveries. Mr Richard Seager now informs me that there recently passed through his hands a Cretan seal stone on which the combat of Theseus and the Minotaur was represented. He adds, however, that this seal dates from the period when the Babylonian influence had become noticeable in Crete. Its existence, therefore, is an additional bit of evidence for the east as the ultimate imaginative source of the theme.

¹XXVII, 1923, pp. 131 ff.

GROUP I

2. PLATE III. Louvre, Campanian Collection of Vases, Room C. A fragment probably from a sima.

Dimensions: length, 0.25 m.; height, 0.245 m.; thickness at the top, 0.028 m.; at the bottom, 0.055 m. Inner width at the top of the left panel, 0.16 m.; height of the left panel, 0.18 m.

The exact provenience of this fragment is unknown but it was certainly found at Sardis. It was secured for the Louvre in 1906 through the efforts of M. Georges Radet, and of M. Fontrier of Smyrna.

Published by M. Radet in *Revue des Études Anciennes*, X, 1908, pp. 109 to 160, and again in a special monograph, *Cybébé, Étude sur les transformations plastiques d'un type divin*, 1909, pl. I; H. Koch, *Römische Mitteilungen*, XXX, 1915, p. 32, fig. 12; T. L. Shear, *American Journal of Archaeology*, XXVII, 1923, pl. II.

Description. The tile is broken on each side but at the top and the bottom the original surface is to some extent preserved. As the left side is not an original edge it is probable that the slab, when complete, consisted of at least three panels, of which the central one is preserved almost intact as far as concerns the outline of the subject represented, though the surface of the tile is badly rubbed and worn. The subject here depicted is the winged goddess, who strides to the left while holding with the hand of each outstretched arm an animal by the tail. The head, which is shown in profile, is in many respects similar to the head of Theseus on the Theseus-Minotaur tile. Both have the characteristic long, straight nose, similar mouth and chin, and a large almond-shaped eye placed high in the head and represented as if seen from the front. The hair of the goddess is apparently smooth on the top of the head but hangs down behind on the neck in the ridged-wave style. Like the head the legs are in profile, but the trunk of the body is represented either in front or in back view. Radet, on pages 2 and 3 of the work cited, interprets the position in the former sense, but a close examination will prove that the hands holding the tails of the beasts are seen from the back, and as there is no twist of the forearm they must extend from a body whose back is turned towards the spectator. A distinct twist of the thighs also may be noticed such as would be consequent to a back-turned torso.

THE TILES

In this interpretation, then, the wings would be represented as growing from the back, as is the usual practice of artists depicting the winged goddess. It is possible that this type of representation is to be explained as due to the limitations of the artist in the archaic period, and certainly in the case of the winged goddess on a sarcophagus from Clazomenae in Berlin the wings must be interpreted as growing from the breast.¹ On our tile the wings are broad sweeping plumes which extend from a solid mass that may originally have been covered with conventional feathers, and curve gracefully up to opposite corners of the panel, admirably filling the space on either side of the head, and helping to make up a well-ordered composition. The animals held by the goddess are called young lions by Radet, but with a strong magnifying glass it is possible to see on both bodies spots of dark red or faded black painted on the white slip. The presence of these spots, together with the long, lithe shape of the beasts suggests the possibility of their interpretation as panthers. The goddess is clothed in a close-fitting, narrow garment which extends down nearly to the ankles, and is drawn taut between the lower legs in the action of walking. Small wings are attached to the heels which, in each case, are raised from the ground. The dimensions of this slab agree with those of the Theseus-Minotaur tile, and the upper left corner of the wing is similar on each. It is, therefore, most probable that these pieces are from the same decorative band. As the fragment in Paris is thicker at the bottom and is broken at the back across the length of the bottom border it is clear that the two pieces are from a projecting sima, as are so many numbers of this catalogue. On the small remaining portion of the right panel of the Paris example are seen a human leg from the knee down, a forearm and hand with a bow and fixed arrow. Radet suggested that this figure was Herakles,² while Koch thought it more probable that two figures were in the panel.³ I have suggested the possibility that the figure was a centaur with human forelegs,⁴ but only the discovery of additional evidence can definitely settle the problem of the decoration of this panel. The presence of the

¹*Antike Denkmäler*, II, pl. 26.

²*Op. cit.* pp. 4 and 33.

³*Römische Mitteilungen*, XXX, 1915, p. 32.

⁴*American Journal of Archaeology*, XXVII, 1923, p. 146. Compare Radet, *Revue des études anciennes*, XXVI, 1924, p. 146.

GROUP I

Theseus-Minotaur group in the panel to the left of the goddess on our Number 1, the broken left edge of the tile in the Louvre and the fragmentary panel on the right prove that these tiles, when complete, consisted of at least three panels. It is not safe to eliminate the possibility of a fourth panel in view of the fact that the only paneled tile that is completely preserved on its front surface, our Number 20, consists of four panels.

Technique. The material and method of construction are exactly similar to those described in Number 1. As the colors of the Theseus-Minotaur tile are better preserved, the juxtaposition of a water-color of that fragment to the piece in the Louvre has led to the identification of some color on the latter. Here also the general scheme of decoration seems to be to outline the figures with a narrow black band, leaving the flesh parts, such as arms and face, the color of the white slip. Red and black are then employed as desired. The costume of the goddess is painted a dark red, like the garments of Theseus and the Minotaur. The foundation mass of the wings seems to be black, the bodies of the beasts are white with dark spots, and on the upper border of the tile is clearly visible a black chevron decoration on the white slip. Although the plumes of the wing on Number 1 are alternately white and red it was impossible to determine such alternation of colors in the case of the Artemis tile because of the destruction of the surface. It is reasonable to assume, however, that such was their original decoration.

Stylistic considerations. M. Radet, in his monograph on this subject, extensively discusses related representations of the theme, and proves that the wide ramifications of the type of the winged goddess, mistress of beasts, may be traced back for their origin to Lydia and her indigenous deity, Cybebe. Beyond Lydia and in remote antiquity traces of the same motive appear among the Hittites and the Babylonians. As a result of his comparative study Radet dates this tile about 600 B.C., which agrees with the age determined for this type of tile on the basis of other considerations discussed in Chapter I.

3. PLATE IV. *Inventory Number* Θ 199—TC. 12. A fragment probably from a sima.

Dimensions: length, 0.195 m.; height, 0.155 m.; thickness at the top of the upper border, 0.03 m.; height of the upper border, 0.017 m.

THE TILES

Found on March 12, 1922, on the surface of the ground in a field adjoining the third ravine north of the temple of Artemis. The spot is about one hundred metres east of the hillock on which were discovered the staters of Croesus and much characteristic Lydian pottery.

Description. The tile is broken at the right side and at the bottom. A consideration of the dimensions of the fragment in relation to the measurements of complete examples suggests the probability that this piece is preserved to a length somewhat less than half of the original and to about two-thirds of its height. The rear half of a bull is here shown in relief, and again the relative spatial proportions make it obviously probable that the complete original decorative unit was a single bull. The top and left end maintain their original, if injured, surfaces. The upper border is moulded but the left end is terminated by a painted, not a moulded, band.

Technique. The surface is covered with a slip of white paint on which all the ornamental elements are executed in a dull black. No trace of red paint is anywhere visible. The figure of the bull is outlined in black and this color converging in bands from both sides entirely covers the tail. The haunch is wholly black, but a narrow white interval separates that part of the body from the bordering outline. On the side of the animal is preserved the left end of a conventional ornament in black, which evidently was a decorative lozenge similar to those frequently found on the tiles. This motive is well illustrated by the design painted on the under projection of the horse tile with a spout, our Number 12, and is shown in Figure 14. The narrow moulded border along the top is decorated with a succession of black chevrons on the white slip, which is a motive that appears with minor modifications in our Numbers 1, 2, 11 and 12. The left end is indicated by a comparatively wide strip of black paint. The top surface is painted black and there are also traces of black on the narrow left side.

Stylistic considerations. As the Lydians were closely associated with their oriental neighbors and worshipped the Great Mother it is natural to find the bull treated by them as an object of significance. Although the lion was the emblem of the country and its dynasty,¹

¹See Salomon Reinach in *Revue des études anciennes*, VI, 1904, p. 3.

GROUP I

Croesus, before the middle of the sixth century, used the bull in conjunction with the lion as the royal symbol for his new gold staters and his other coins. Moreover, the bull and the lion are found in juxtaposition on monuments throughout Asia Minor, and are frequent on products of Ionian art. An interesting illustration of a group of a lion and a bull facing each other in heraldic pose occurs on a terra-cotta tile found at Gordion in Phrygia by Körte, and published in his work on Gordion, p. 160, figs. 143 and 144.¹ The theme is also used on Clazomenian sarcophagi, on examples of which in Berlin the bull is decorated with painted designs.² A leaf-like design in black on the white body of the bull also occurs on a sarcophagus of the Clazomenian type found at Camirus in Rhodes.³ Moreover, the bull is associated with the female deity, *πότνια θηρῶν*, as Picard points out in *Mélanges Holleaux* in connection with the publication, pp. 175 ff., of an archaic bronze plaque from Colophon which shows the goddess, without wings in this case, holding with each hand a bull on a leash. Because of similarity of technique to Numbers 1 and 2 our fragment from Sardis is classed in Group I and should be dated not later than the beginning of the sixth century.

¹Gordion, *Jahrbuch des Archaeologischen Instituts*, Ergänzungsheft V, 1904.

²*Antike Denkmäler*, I, pl. 44 and II, pl. 26.

³A. S. Murray, *Terracotta Sarcophagi, Greek and Etruscan, in the British Museum*, pl. VIII.



II. Tile with representation of Theseus and the Minotaur



III. Tile in the Louvre with representation of the winged Artemis
Reduced one-fourth



IV. *Fragmentary tile with part of a bull*

CHAPTER III

The Tiles. Group II

THIS group is distinguished by the free use of a dark purplish red color in addition to the black on the white ground, and by the presence of primitive geometric designs.

4. PLATE V. *Inventory Number* Ter. 36 (I). A fragment of a slab that was probably used on a small pediment.

Dimensions: length, 0.321 m.; height, 0.286 m.; thickness, 0.02 m.

Found in 1911 within the rude rubble foundation walls of a small building located on a bluff at the foot of a hill containing tombs on the west bank of the Pactolus, opposite the site of the temple of Artemis. As many Lydian tiles were found here this site was called the "Lydian terrace," and for the sake of convenience this term is employed in this catalogue in describing the location of terra-cottas found in this neighborhood. A view of the terrace and the rubble walls is given in Figure 2.

Published by H. C. Butler in *Sardis*, Vol. I, *The Excavations*, p. 77, ill. 73; and by T. L. Shear in *American Journal of Archaeology*, XXVII, 1923, p. 141, fig. 6.

Description. A lion with muscles and sinews well developed is represented in high relief. At the greatest elevation the relief is 0.03 m. The beast is standing on his hindlegs and rests his left forepaw on the stem of an inverted lotus blossom. The right foreleg is raised in the air. The tail curving up falls with its tip on the beast's back. Bones and muscles are depicted in much detail. From the inverted flower the stem bends gracefully to the left, terminating in two curved tendrils with a bud between. The hindpaws of the lion and the tips of the lotus bud and blossom rest on the projecting ledge of the bottom border of the slab. This border which has a height of 0.036 m. and a projection of 0.015 m. is decorated with a meander pattern in relief. The tile is broken at the left and right sides and at the top. There is no projection at the back and no break of the original surface.

THE TILES

Technique. Like all the terra-cottas of this catalogue, this piece is made from a mould. The high relief of the figured decoration is equalled in the case of other tiles from this site. The color scheme is the usual one of the combination of red and blueish black on a white slip. The colors are rather well preserved on this fragment and give a good impression of the effectiveness of a mass of this sort of architectural decoration. The body of the lion is painted a deep red against which is contrasted the blackness of his tail. The stem of the flower which supports the lion's paw is black, but at its junction with flower and bud it is circled by a red band. The lotus flower is red with a black stamen, and the red bud extends downwards from two curving black tendrils. The narrow floor of the projecting ledge is red and the moulded meander decoration of the border is black.

Stylistic considerations. A probable restoration of this slab as it appeared when complete may be readily made. From the inverted blossom a second stem curved to the right leading to another bud with its curved tendrils. On this stem a parallel lion would rest his right forepaw while raising his left foreleg in antithesis to the lifted leg of the first lion. The heraldic group thus constituted would fill a space approximately 0.65 m. long and 0.40 m. high. The size of the figures, the brilliance of the colors, the height of the relief, and the freedom and accuracy of the delineation of the curves of both plant and animal mark this as an impressive decorative monument. The theme of a symmetrical group composed of facing animals or birds is widely current in Asia Minor. It appears at an early date on eastern monuments of Babylonian and Assyrian art, it is common among the designs represented on Cretan and Mycenaean seal stones, it is a favorite motive of the Ionian artists of the archaic period and recurs on pottery, like the Corinthian, the decorative elements of which are influenced by the Ionian schools. The subject of the symmetrical arrangement of groups of men and animals is well treated by E. Curtius in his work, *Ueber Wappengebrauch und Wappenstil im griechischen Alterthum*.¹ No later work has superseded this study, first published by Curtius in 1874, but an article on the earlier phases of the theme, with especial attention to its interpretation in Babylonia and

¹Republished in *Gesammelte Abhandlungen*, II, pp. 77 to 115, from *Abhandlungen der Königlichen Preussischen Akademie* 1874.

GROUP II

Assyria, was published by A. Jolles in the *Jahrbuch* in 1904.¹ Of particular interest in association with the works from Sardis is the use of the subject on Clazomenian sarcophagi,² and on the "Argive-Corinthian" bronze strips. On the example of the latter found at Noicattaro a panel is occupied by lions arranged in a pose similar to that of the group on the Sardis terra-cotta; and two replicas of this group appear beneath the palmette at each end. Another panel of the same strip is decorated by two facing sphinxes.³ The lion group is also found on the bronze strips of this type from the Acropolis at Athens, and from Eleutherae. On one piece of a terra-cotta sima found by Macridy Bey at Ak Alan near Samsoun in Asia Minor are two antithetical lions which are represented on each side of a water-spout with their backs to the spout. But on another slab of a sima from the same place a lion and a panther stand on each side of the spout, facing each other, with their forelegs raised in heraldic pose.⁴ Another similar group of heraldic lions associated with the lotus and palmette on an Ionian vase in Würzburg is discussed by Endt in his study of the Ionian wares.⁵ The substitution of a bull for one of the lions in such an antithetical group on a terra-cotta frieze tile from Gordion⁶ suggests the interesting possibility that the missing animal from the Sardis group may have been a bull.

5. Figure 6. *Inventory Number* Ter. 37 (I). Fragment of uncertain purpose formed of two adjoining pieces broken on all sides.

Dimensions: length, 0.26 m.; width, 0.12 m.; thickness, 0.02 m.

Found in 1911 close to the preceding number.

Description. This is the body of an animal which from its pose and its proportions seems to belong to the feline rather than to the equine species. It is standing erect with its forelegs resting on some object above the level of the support of the hindlegs. It thus

¹*Jahrbuch des Archaeologischen Instituts*, XIX, 1904, pp. 27 ff.

²Walters, *History of Ancient Pottery*, I, pp. 363 and 364.

³Gervasio, *Bronzi arcaici e ceramica geometrica nel Museo di Bari*, pp. 188 ff., pl. XVII.

⁴*Mitteilungen der Vorderasiatischen Gesellschaft*, 1907, Heft 4, plates XI and XII.

⁵*Beiträge zur ionischen Vasenmalerei*, p. 47, fig. 21.

⁶Körte, *op. cit.* p. 160, fig. 144.

THE TILES

probably formed part of a heraldic group similar to that shown on our Number 4. The body is painted a purplish red color, and for this reason the fragment is placed in this group.

6. PLATE VI, B and Figure 7, A. *Inventory Number* Ter. 55 (I). Fragments of a tile, possibly from a pedimental sima.

Dimensions: height, 0.164 m.; thickness, 0.024 m.

Found in 1911 near the preceding number.

Description. A series of decorative stars in relief, separated by a geometrical design, occupies the space between two rounded projecting borders above and below. The rays of the star pattern, which extend from a well-made ring, are alternately long, slender, pointed buds and shorter projections somewhat of the shape of a spear-point. The general pattern is effectively completed by the rounded borders which have a projection of 0.015 m. The upper border is slightly larger than the lower with a height of 0.037 m., compared to a height of 0.03 m.

Technique. The familiar colors, cream white, purplish red and blueish black, are here used with particular skill. The background of the body of the tile, within the borders, is covered by the white slip, on which a narrow black band is painted along the entire panel above and below, and presumably also was continued along the ends. This method of outlining the field with a black band is reminiscent of the technique of our Group I. Other black stripes extending from these bands divide the upper and lower borders into sections of alternating colors, with a width varying between four and five centimetres. On the upper band the colors are alternately red and white, but on the lower border they are black and white. The moulded ring that forms the centre of the star motive is black, as are the rounded rays, while the spear-head rays are red.

Stylistic considerations. The decorative star motive is of frequent occurrence in Ionian art. In connection with the meander design it forms an important part of the ornamentation of some of the sarcophagi from Clazomenae. On a sarcophagus in the British Museum it is largely used on the cover, and on the interior side and end panels.¹ And on the

¹A. S. Murray, *Terracotta Sarcophagi, Greek and Etruscan, in the British Museum*, pls. I to V.

GROUP II

same sarcophagus several groups of figures are set in long, narrow panels that are enclosed by rounded moulded borders decorated with black and white stripes. A striking illustration of the decorative use of the star and meander design is found on the Ionic amphora in Munich with the representation of the Judgment of Paris.¹ Furtwängler in his discussion of this vase points out that the star-meander design is especially characteristic of early Ionian art, and is also a favorite motive on a certain class of architectural terracottas from Etruria.² A good example of the star and meander combination on a terracotta frieze from Velitrae in Latium is illustrated by Mrs Van Buren in her *Figurative Terra-Cotta revetments in Etruria and Latium*, p. 69, and pl. XXXII, fig. 1. The careful execution of the present example from Sardis and the brilliant preservation of the color, as may be seen on our Number 7, give a vivid impression of the beauty of the original design.

7. PLATE VI, A and Figure 7, B. *Inventory Number Ter. 56 (I)*. A fragment similar to Number 6.

Dimensions: height, 0.154 m.; thickness, 0.03 m.

Found in 1911 near Number 6.

Description. This fragment is reproduced because of the brilliant preservation of the colors. Its height is one centimetre less than that of the piece just discussed, and this difference is largely accounted for by the smaller size of the upper rounded border. In the present example the upper and lower borders are of the same height. In all other respects the tiles are similar.

8. Figure 8. *Inventory Number Ter. 41 (I)*. A tile, perhaps from a pedimental sima.

Dimensions: length, 0.599 m.; height, 0.16 m.; thickness, 0.04 m.; depth of back projection, 0.397 m.

Found in 1911 behind the foundations within which were discovered our Numbers 4, 5, 6 and 7. It formed part of the walls of a small coffin.

¹Furtwängler and Reichhold, *Griechische Vasenmalerei*, pl. 21. Compare Pfuhl, *Malerei und Zeichnung der Griechen*, I, pp. 184 ff.; III, p. 36, fig. 155.

²Furtwängler and Reichhold, *ibid.* Text, p. 94.

THE TILES

Description. This tile is made up of four pieces which fit together. The front face has been broken in two pieces on each of which the rear projection was broken away. As joined the tile probably presents a complete front, with the exception of a slight break on the right end. Along the top and the bottom of the tile is a meander border, of a height of 0.032 m., moulded in relief. Between the borders is a series of star designs arranged in six panels, separated by moulded bands. In shape the stars are similar to those of Numbers 6 and 7.

Technique and Style. The usual colors are here employed and distributed as in the previous number. The moulded meander pattern is painted black, but the tile was carelessly made or the mould was defective, for at the lower left end the moulded design ceases and the border is completed by a crude imitation of the ornament painted in black on the flat surface. The stars also are poorly executed. The inner circle of the design has degenerated into an irregular polygon, and the rays are unskilfully made, with crude variations in shape and in size. The star motive is the same as on Number 7 but the work was executed by an inferior craftsman. There is no reason to suppose that it is not of contemporaneous date. Along the outer edge of the under projection is a decorative border, 0.075 m. wide, consisting of a double series of small black lozenges within a black border on the white slip.

9. PLATE VII and Figure 9. *Inventory Number* Θ 240—TC 24. A tile with a spout from a lateral sima.

Dimensions: length, 0.355 m.; height, 0.181 m.; thickness, 0.05 m.; length of spout, 0.183 m.; width of spout, 0.105 m.

Found on April 7, 1922, at the north-eastern end of the Lydian terrace.

Description. The tile is practically complete as only the lower back projection is missing. Below a top border of a height of 0.04 m., the surface is divided into three bands, of which the upper is decorated with a series of moulded egg-shaped units separated by small ornaments of the spear-head type, all pointing upwards. For the sake of convenience the inadequate term "egg-and-dart" will be used in reference to this design.

GROUP II

The eggs are bordered by moulded rims and are ornamented by painted discs. A similar decorative scheme occurs on the lower band, but in this case the eggs and darts are pointing downwards. The continuity of the series is here interrupted by the interposition of the spout which occupies the space of the two central eggs, leaving three eggs on either side. Rounded moulded horizontal strips separate the bands of egg-and-dart decoration from the central band which is plain except for six painted vertical strokes at each end.

Technique and Style. The tile was found in three fragments which fit perfectly. The piece on the right shows the colors in a better state of preservation than they are to be seen on the rest of the tile. At the left end some of the decorations that were originally painted red have turned black, possibly in the course of the firing of the tile.¹ The excellent preservation of the brilliant colors on the right enables the observer to appreciate readily the effectiveness of the decorative system of the complete tile. The upper border and the two horizontal strips are painted red. The central band is white, with six strokes painted alternately red and black at each end. Red discs decorate the white eggs and between the black moulded borders of the eggs the spear-heads are red. The left edge of the tile is painted with black vertical strokes on the white ground. On the bottom there remains a small portion of a black lozenge that evidently was similar to the black lozenge which decorates the under surface of the spout. As may be seen in the sectional view of the tile shown in Figure 10 the front slopes backwards instead of forwards as is usual in sima construction, so that here the upper projecting border furnishes no protection to the moulded decorations. The shape of the egg-and-dart band is almost identical with that which appears on a sima tile from Smyrna, now in the Boston Museum, which was published by Furtwängler in 1897.² There seems to me to be no difficulty in the way of accepting Furtwängler's view that the later egg-and-dart developed from this ornament, of which the origin has nothing whatever to do with the lotus.³

¹Compare G. M. A. Richter, *The Craft of Athenian Pottery*, pp. 30 ff.

²*Sitzungsberichte der königlichen Bayerischen Akademie der Wissenschaften*, 1897, 2, pp. 136 ff. and pl. IX.

³But compare W. H. Goodyear, *The Grammar of the Lotus*, pp. 155 to 159.

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10. PLATE VIII. *Inventory Number* Θ 241—TC 25. A fragment from a sima.

Dimensions: length, 0.238 m.; height, 0.12 m.

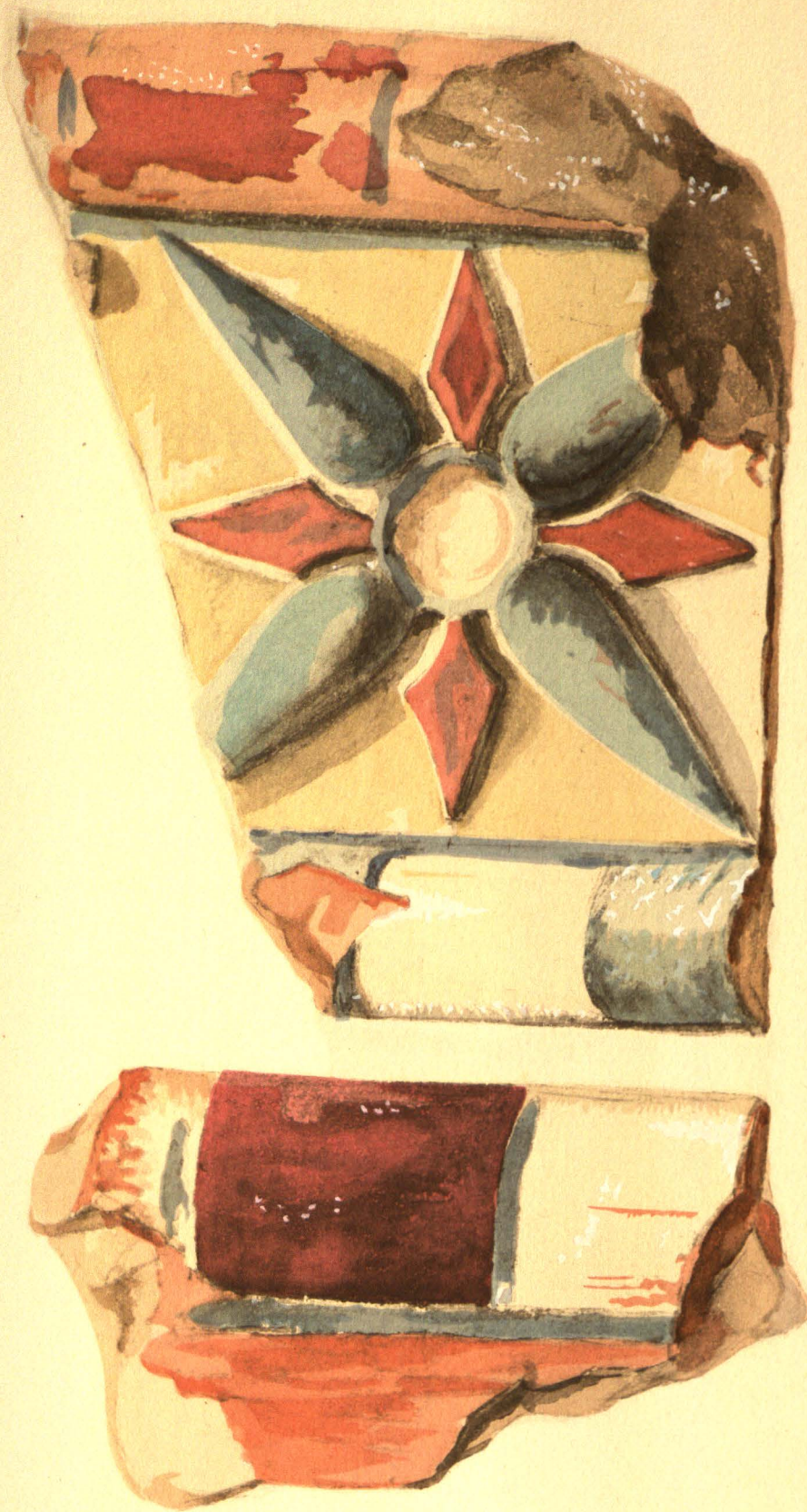
Found on April 7, 1922, at the north-eastern end of the Lydian terrace, near the preceding number.

Description and Technique. This fragment, which consists of two pieces fitted together, has the original surface on top and at the right end, but it is broken at the left end and at the bottom. It evidently formed part of the upper and middle bands of a sima tile like the preceding example, but in several respects it differs noticeably from that tile. The wide upper border is decorated with a series of bright red chevrons on the white slip, and the eggs are white, without the additional ornamentation of the red disc. There are also no traces of painted vertical lines at the right end of the middle band. Furthermore, the shape of the moulded black border of the eggs is broader than on our Number 9, and in this respect the present specimen is more nearly akin to the bed-moulding of the cornice of the Artemision of the sixth century at Ephesus.¹ This example is more carefully finished than the preceding number, but the variations that have been noted seem due rather to difference of hand than to any substantial difference of age.

¹D. G. Hogarth, *Excavations at Ephesus*, Atlas, pl. IX.



V. Part of a tile decorated with a lion group
Reduced one-third



VI. Two fragments of tiles with decorative star design



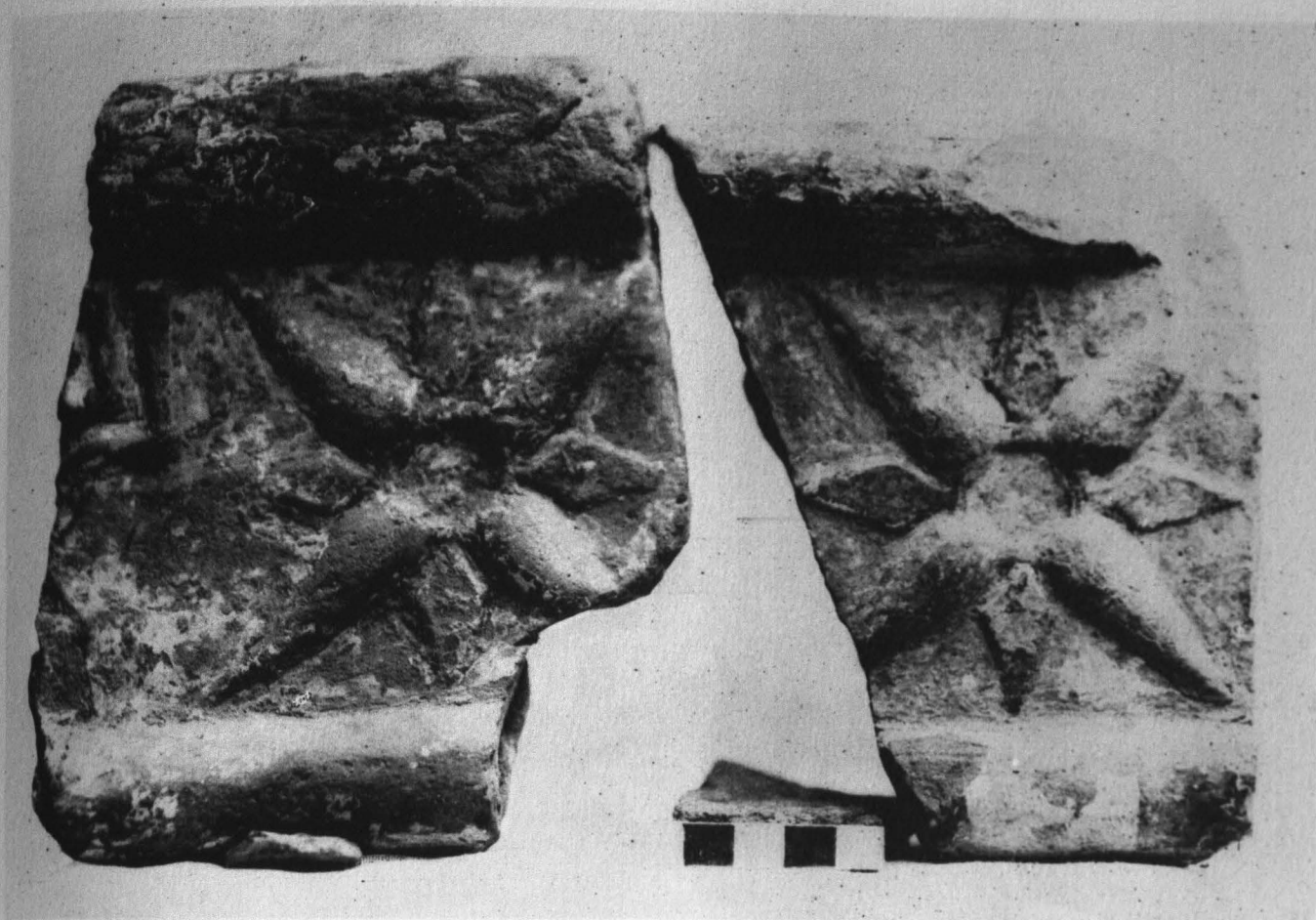
VII. Complete tile from a sima, with egg-and-dart ornaments
Reduced one-third



VIII. *A fragment from a sima*



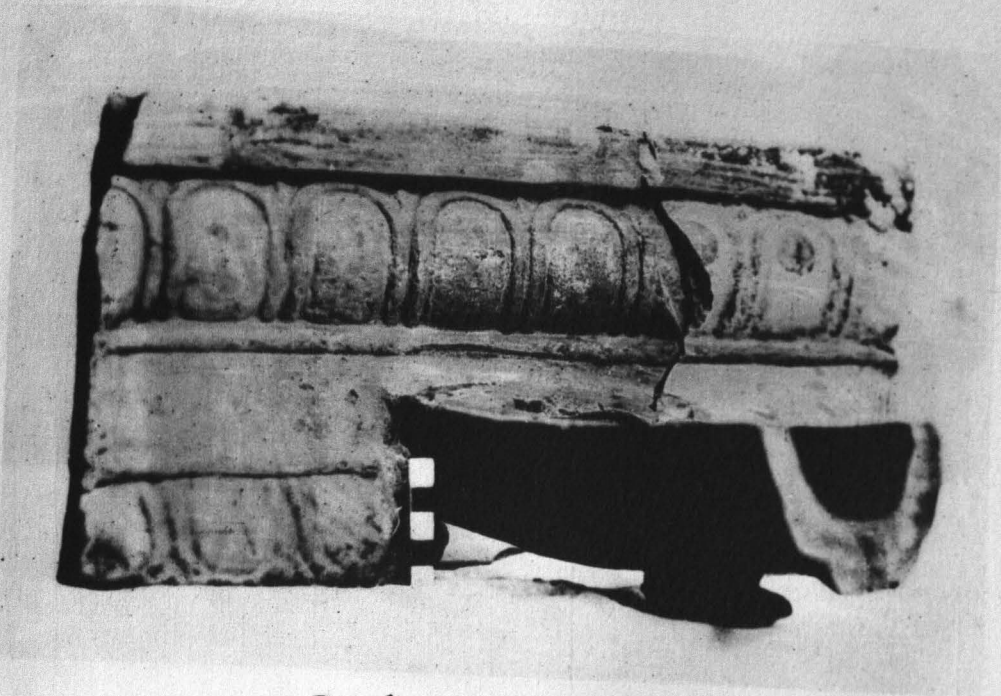
6. *Fragment of a standing animal*



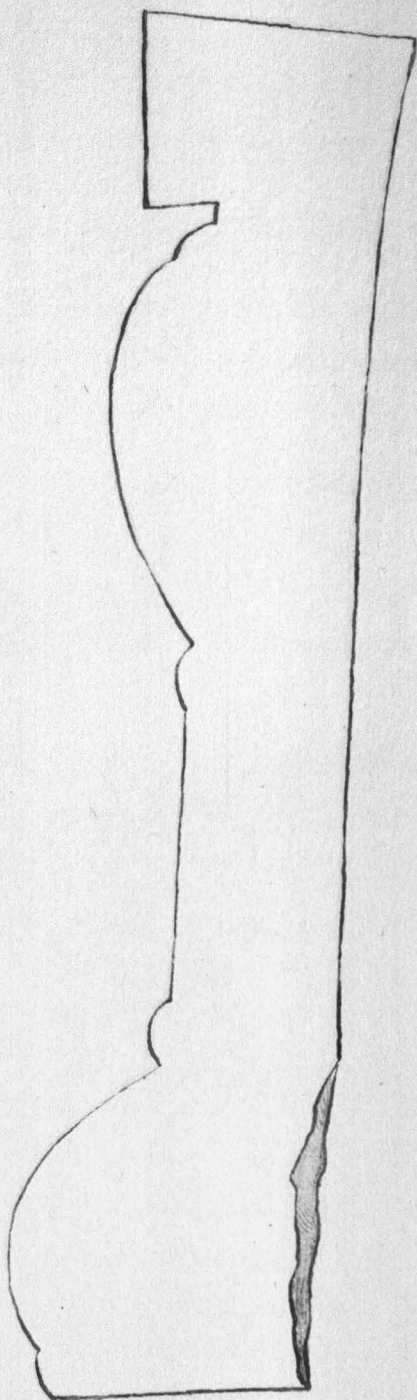
7. *Fragments from a sima*



8. Complete tile from a pedimental sima



9. *Complete tile from a lateral sima*



Section A-B

10. Profile of tile Number 9

CHAPTER IV

The Tiles. Group III

THE characteristics of this group are the appearance of a bright coral red, in addition to the blue-black, on the yellow-white ground, and an advanced technique in the execution of figures and designs.

11. Frontispiece and Figures 11 and 12. *Inventory Number* Θ 197—TC 10. Part of a tile from a sima. As this important piece was left in Smyrna at the close of the season of 1922 and was presumably destroyed in the fire, it is illustrated here by a photographic view, Figure 11, as well as by Mrs Shear's water-color that is presented as the frontispiece of the book.

Dimensions: length, 0.17 m.; height, 0.24 m.; thickness of the top border, 0.04 m.; height of the top border, 0.04 m.; height of the bottom border, 0.022 m.; height of the panel between borders, 0.178 m.; depth of the rear projection at the bottom, 0.093 m.

Found on April 8, 1922, at the north-eastern end of the Lydian terrace, about 1.40 m. below the surface of the ground.

Description and Technique. This fragment is broken only on the left side and on the rear projection. At the top and bottom and on the right side the surface is intact. At the bottom the piece is preserved to about one-half of its original length. The depth of the projecting borders at the top and bottom, and the height of the relief of the figures are well illustrated in the side view shown in Figure 12. Between the two borders, of which the upper and wider one is decorated by a zig-zag design in black, is represented in moulded relief a group of two horses and a large dog galloping to the right. Only the front of the head and of the chest of the left horse of the team is indicated, but enough color remains to show that these parts were black, while the horse on the right is red, and the dog is outlined in black and is covered with black spots. The harness is elaborately ornate. The bridle is like modern bridles, with the straps, which are painted yellowish white, fastened by a rosette on the cheek. The bit ends in a

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wide outcurving iron outside the mouth. From the bit the rein passes back to the collar, which is a heavy band with a semi-circular cutting resting on the shoulder of the horse. This collar is held in place by a band drawn about the lower part of the neck, both collar and band being painted the yellowish white color with a black border. Attached to the collar is a moulded guiding ring, to the left of which the reins are represented as four moulded lines, which are painted red on the white field. From the end of the pole of the chariot, that must be supplied to complete this group, rises vertically a moulded curved rod, the end of which is decorated with a griffin's head that is turned to the left. The body girth of the red horse, which is painted a cream color with black outlines, is noticeably loose beneath the belly.

Stylistic considerations. Several details of the style and technique of this group are distinctively characteristic, and the work as a whole at once suggests comparison with a beautiful terra-cotta tile in the Bibliothèque Nationale at Paris, shown here in Figure 13, which is reproduced from Babelon's *Le Cabinet des Antiques à la Bibliothèque Nationale*, pl. IV.¹ This terra-cotta was in the collection of Raoul Rochette and was purchased in 1855 by the Duc de Luynes. There is no record of its provenience, but Rayet conjectured on stylistic grounds that it was from southern Italy.² Koch, however, has declared in the *Römische Mitteilungen* his conviction that it is from Asia Minor and has dated it about 550 B.C.³ For closest analogies to this group Koch refers to terra-cottas discovered at Larisa in Aeolia, which have not yet been published. The new piece from Sardis gives confirmatory evidence of Koch's suggestion of the country of origin and of the date of the example in Paris, and may enable us to delimit even more closely its provenience. In both cases the details of the harness show extraordinary similarities. The bridle is quite of the same type, with the curving irons at the end of the bit, and there is also a similar collar with a semi-circular cutting, and the unusual griffin's head at the end of the pole. The horses, too, resemble one another, especially in the shape of the head and the position of the eye.

¹Published also by Rayet, *Gazette archéologique*, VIII, 1883, pl. 49.

²*Ibid.* pp. 305 and 306.

³XXX, 1915, p. 40.

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Fortunately the tile in Paris is preserved to its full length and thus we have there a complete representation of the chariot group with a charioteer and an armed warrior. Although this part of the group is lacking on the example from Sardis, comparative material is available on other tiles in our series. Attention is called to the ornamental lotus above scrolls on the cuirass of the charioteer as being similar to the lotus motives of the Sardis tiles; but especially striking is the resemblance of the profile and the head-dress of the warriors to those of Theseus on the Theseus-Minotaur tile, our Number 1. The skull-cap with ornamental bands of the charioteer, and the flying pigtail of the warrior, both recur in the figure of Theseus. If to these similarities there be added the fact that the proportions of the tile in Paris agree with the measurements of those found in the excavations, and that the technique of the color decoration is the same, the conclusion may be safely stated that the tile in the Bibliothèque Nationale is from the same artistic period and circle to which the Sardis works belong. This tile may, therefore, be used in its general type to provide a visual restoration of the missing portion of our fragment.

Obviously there are striking differences between the two pieces. Besides the variant form of decorative border the terra-cotta in Paris has a bird swooping above the horses, while a running dog occupies the lower field of the example from Sardis. As our tile cannot date later than about 550 B.C. it provides an interesting and almost contemporaneous illustration of the dogs of war employed successfully by Alyattes in his final campaign against the Cimmerians.¹ Dogs were frequently used on military expeditions by the peoples of Asia Minor, as we learn from literary references as well as from artistic representations.² They are shown in the midst of battle scenes on sarcophagi found at Clazomenae, and are there often associated with chariot groups that are similar to our example from Sardis. Especially on a sarcophagus in the British Museum similarities are noticeable in the treatment of the dashing horses, in the type of the harness and in the presence of a griffin's head at the end of the up-curved pole.³

¹Polyaenus, *Strategemata*, VII, 2, 1.

²See O. Keller, *Die antike Tierwelt*, I, pp. 126 ff.; and A. S. Murray, *Monuments Piot*, IV, 1897, p. 30.

³A. S. Murray, *op. cit.* pls. IV and V.

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Groups of similar type are also found on other monuments of this period from Asia Minor, as, for example, on two marble plaques in Constantinople and Broussa, of which the former is said to have come from Cyzicus, while the latter was found built into a mosque in Broussa.¹ This characteristic theme is, thus, well established for western Asia Minor and for the Lydo-Ionian artistic schools that flourished there in the early part of the sixth century B.C. It is, therefore, particularly interesting to observe that a very similar representation of this subject occurs on monuments of the same period found in Etruria. In Room C (formerly D) of the Campanian collection of vases in the Louvre are two pithoi (height 0.882 m.), Nos. 295 and 296, which were found at Caere and are undoubtedly of local manufacture. Around the shoulder they have a stamped decorative unit that is repeated eight times. This unit consists of two chariots, with their charioteers, drawn in each case by two galloping horses. In front of the forward group is a man running to meet the horses, while behind the rear chariot two men are running in the direction taken by the chariots. The chariot groups on No. 296 are here shown in Figure 14 from a pen-and-ink drawing made by Mrs Shear with the kind permission of M. Pottier. Units from both vases are illustrated by M. Pottier, by photographs from impressions, in the catalogue of the vase collection.² The work is crudely done on this type of rough pithos, but many characteristic details of the group are similar to those on the Sardis tile. This is true of the type and pose of the horses' heads and manes, the collar about the neck, the griffin's head at the end of the pole, and even the loosely hanging girth, which appears on the forward team on the pithos. A running dog accompanies the rear chariot but the animal with the front group is a hare. The chariot wheel with the four spokes, which Nachod lists as characteristic of the Greek mainland type of the sixth century,³ occurs also at Sardis, on our tile Number 14. Here again is important evidence of the artistic relationship of Lydia, Ionia and Etruria, which supports Salomon Reinach's views expressed in 1895 in his study of a sarcophagus from Clazomenae, published in *Revue des Études Grecques*, VIII, 1895, pp. 161 ff.

¹Mendel, *Bulletin Correspondance Hellénique*, XXXIII, 1909, pl. VII.

²*Vases antiques du Louvre*, pl. 37, Nos. D 295 and D 296.

³*Der Rennwagen bei den Italikern*, p. 2.

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12. PLATE IX and Figure 15. *Inventory Number* Θ 198—TC 11. Fragment from a sima.

Dimensions: length at the bottom, 0.207 m.; height, 0.240 m.; depth of the rear projection at the bottom, 0.143 m.

Found on April 8, 1922, at the north-eastern end of the Lydian terrace, close to the preceding number.

Description and Technique. This piece, as composed of two fitted fragments, is intact at top and bottom and on the right end. At the left side it is broken diagonally, and part of the rear projection at the bottom is missing. The main panel, which has a height of 0.178 m., is bordered above by a broad band (height, 0.04 m.) decorated with black zig-zag lines on the white ground. The narrow lower band is painted red. On the space between the borders is a representation in relief of the head, neck, shoulder and forelegs of a rearing horse. The horse, which is outlined in black, has a red neck, a black mane, and a white head on which are several casual red streaks. There is no bridle or harness but an ornamental collar is worn around the neck. The red forelegs are raised above the edge of the water-spout that protrudes from this tile. Only the front part of the horse is here shown and the design is complete with this partial representation of the animal, for this fragment is a corner tile and had no adjoining member on the right. The view of the under portion of the tile given in Figure 15 shows the remains of another decoration on the side, and the pattern of the under surface actually makes a turn for the corner. This ornament consists of a double row of black lozenges which are arranged in parallel groups and are tangent at their inner corners. They are set in a space 0.075 m. wide which is delimited by a red border. This is the usual decorative pattern for the under surfaces of projecting simas and spouts. Now it should be noted that in all the tiles at Sardis where spouts, or traces of them, have been preserved the spout is placed in the middle of the tile. If this is also true in the present case this fragment is preserved at the bottom to about half of the original length of the complete tile, and the decoration on the missing left side would have corresponded with that existing on the right side. But while a truncated horse may be admissible as a terminal decoration, it would be inartistic for use on a continuous frieze, and, therefore, it is

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possible that the space to the left of the spout was occupied by a complete rearing horse. In fact the rear half of such a horse has been preserved on a fragment which is listed as the next number of our series, Number 13. As the complete horse would require more space than the half-animal on the right it is also possible that in this end tile the spout was asymmetrically placed, as it was on the corner slab of the sima of the Zeus temple at Olympia.¹ The dimensions of the present piece agree exactly with those of our preceding number, the borders are the same, and the style, colors and technique of the relief decoration of the panels are similar. As, in addition to these circumstances, the pieces were found together it is reasonably certain that they belonged originally to the same sima, which would, then, if this supposition is correct, be composed of two types of slabs, those with and those without spouts. The tiles decorated with chariot groups would adjoin tiles with water-spouts, which were ornamented with a horse on either side of the spout, rearing over its edge. In the case of the corner tiles the horse on the end was shorn of his rear half because of the diminution of the available space. There is no doubt that drainage difficulties would have been experienced with such an arrangement, but it is impossible to think of the intrusion of a spout into the midst of the chariot group, and, in fact, no traces of any appear either in our Number 11 or in Number 14. The inappropriateness of such an interference with an artistic unit is sufficient reason to explain the new design with the rearing horses, in which the adaptation of decorative motives to practical purposes is so admirably illustrated.²

13. PLATE X. Louvre, Campanian Collection of Vases, Room C. A fragment probably from a sima.

Dimensions: length, 0.125 m.; height, 0.123 m.; thickness on the left side, 0.025 m.

This fragment is reported to have been found at Sardis.

Description and Style. The piece is broken above and at the right side, but the original sur-

¹*Olympia, Die Ergebnisse*, I, Taf. XVI.

²A discussion of the relation of the decoration of a sima to its spout is given by Martin Schede, *Antikes Traufleisten-Ornament*, pp. 32 ff. An interesting example of the decorative use of rearing horses appears on a black-figured amphora in the Museum of Compiègne, see Flot, *Corpus Vasorum Antiquorum, Musée de Compiègne*, pl. 5, No. 8.

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face is, in part, preserved on the left side and at the bottom. It is broken behind at the bottom where evidently a rear projecting piece is broken away. The subject is a rearing horse of which the back half is preserved. The animal is treated like those shown in the two numbers preceding. The body in relief is outlined in black against the white ground. A small remnant of red paint on the haunch would indicate that the body was painted red. But, in addition, on the right flank, is a decoration in black which consists of a circle with five black pendants hanging from it. The decoration of an animal with a formal conventional ornament has been noted, in the case of a bull, on another of the Sardis tiles, our Number 3. The dimensions and style of this horse agree with those of the preceding number, and it is, therefore, probable that this tile should be restored with a horse rearing on either side of a spout. This fragment would, thus, belong to the lateral sima of which Number 12 is a corner tile.

14. Figure 16. *Inventory Number* Ter. 40 (I). Two fragments of a tile from a sima.

Dimensions are uncertain as the pieces do not adjoin, but the scale is the same as that of the preceding numbers.

Found in 1911 near the rubble foundations on the Lydian terrace.

Description. The group represented in relief on this tile comprised a chariot and two galloping horses headed to the right, with an accompanying dog. There are preserved only the forelegs and rear part of the horses, part of the wheel of the chariot, and the head, hindlegs and tail of the dog. The group was similar to that appearing on our Number 11 but it was not made from the same mould. The rear projection on the piece on the right proves that this tile is from a sima, but no trace of any structural accommodation for a water-spout exists on the fragment as far as it is preserved.

15. Figure 17. *Inventory Number* Ter. 39 (I). Fragment of a large slab that may have been used in a pediment.

Dimensions: length, 0.12 m.; height, 0.082 m.; thickness, 0.018 m.

Found in 1911 in the foundations on the Lydian terrace.

Description and Style. The head and neck of a large griffin are represented in relief facing to the right. At the base of the neck are moulded two horizontal lines. Pointing towards

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the griffin is a spear-head with part of the shaft. At the junction of the head and the shaft are seen two curved decorations, of which one has the ends turned up while the ends of the other are curved downwards. Most of the paint has been worn off this terra-cotta, with the result that the red surface of the clay is chiefly exposed, but there are some traces of the white slip especially on the neck of the griffin, and sufficient remains of black paint to show that the ears of the animal were originally black, as was also apparently his tongue. The study of our Number 11, with the related terracottas there discussed, permits us to restore the group of which the scene on this fragment formed a part. The griffin's head and neck were the terminal decorations on a curved projection rising from the end of the pole of a chariot. The horizontal lines are the reins that were held by the charioteer, and the spear was certainly held by the accompanying warrior in the chariot, who is shown with a spear on the tile in the Bibliothèque Nationale. The scale of the objects on this fragment indicates a size about double that of the sima tiles, Numbers 11 and 12. When complete with a suggested height of about forty-five centimetres it would approximate the size of the slab with the heraldic lions, Number 4, and would properly belong somewhere in the pediment.

16. Figure 18. *Inventory Number* Ter. 42 (I). A complete tile from a pedimental sima.

Dimensions: length, 0.64 m.; height, 0.199 m.; thickness, 0.027 m.; depth of under projection at the widest point of preservation, 0.18 m.

Found in 1911 on the Lydian terrace where it was re-used to form, together with Number 8, part of the side of a small coffin.

Description. The tile is complete except that the rear part of the projection behind is broken away. Above and below are squared horizontal borders, which have a height of two centimetres and an outward projection of one centimetre. The space between these borders is divided into four panels by squared moulded bands of which the width is 0.013 m. The panels are decorated by two moulded patterns arranged alternately. One pattern, which appears on the panel on the extreme right, is a star motive, while the other adjoining it is a scroll design. In the centre of the star type is a rounded boss, about which is a design with four equal bars and concave sides. From the end of each

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bar five plumes extend like the plumes of a palmette, between which, in the concavity of the design, are four rays or buds with slender points reaching to the corners of the panel. The relief of the design is highest at the base of the rays where it attains a height of 0.008 m. (Figure 19). The interior measurements of this panel are 0.16 m. for the height and 0.156 m. for the width. The adjoining panel is slightly smaller with a width of 0.134 m. On it a scroll pattern is represented which consists of two graceful S-shaped curves. The curve on the right is arranged in a reversed position to the other, and is joined to it by narrow bands at the top and the bottom. Above the top band is a small bud-shaped ornament, and below it one small and three larger buds. Objects of similar shape appear above and below the lower band also, as well as on either side of the lower curve of the scroll, seeming here to spring from the side walls of the panel. The slender curving terminals of the scroll are finished by four rounded buttons. The outer edge of the under projection of the tile is decorated with a series of curves within a border, roughly painted in red on the white slip.

Technique and Style. Sufficient traces of color remain to permit the determination of the color distribution for the entire pattern, but the paint has been badly rubbed away. As the next number in our series is a tile of the same design, with the same distribution of colors, on which the paint has been brilliantly preserved, the details of the color scheme will be presented later in connection with the description of that specimen. The fortunate preservation of this complete tile gives opportunity for a vivid realization of the magnitude of these terra-cottas, and of the effectiveness of the combination of their designs and of the distribution of their colors. A decorative pattern that is almost identical with this appears on fragments of a terra-cotta sima found at Gordion. A reconstruction of a tile on the basis of these fragments is presented by Körte in his publication of Gordion, p. 156, fig. 139.¹ This reconstruction gives a tile of two panels, as Radet would restore the tile with the winged Artemis,² our Number 2, but the evidence of the present example makes it probable that the similar tiles at Gordion had four panels, and even suggests the possibility of four panels for the tiles with figurative decorations, our Numbers 1 and 2. The Phrygians were under Lydian

¹*Jahrbuch des Archaeologischen Instituts*, Ergänzungsheft V, 1904.

²*Cybébé*, p. 2.

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domination at the beginning of the sixth century,¹ but the capitals of the two nations were rather far apart as distances were reckoned at that period, and it is, therefore, remarkable to note the uniformity of artistic development that produces in such widely separated places buildings of similar type, with architectural embellishments identical in material, design and execution. Körte briefly discusses the designs on these tiles, and for the star motive finds the closest analogy on a terra-cotta fragment from Caere in the Berlin Museum. Thus again relationship is attested between Etruscan and Lydian products. In this connection Körte states as a fundamental principle that artistic types which appear both in Phrygia and in Italy must be regarded as of Ionian, or East-Greek, origin. This view receives support from the discovery of fragments of tiles of similar type at Pergamon,² and from the appearance of the star design on a Rhodian vase in Paris.³ It is also interesting to observe that decorative star motives of the same type appear on the early coins of Miletus, where they are used in association with lions and heads of lions.⁴ As, however, Lydia in the first half of the sixth century controlled all of western Asia Minor, artists could have been readily summoned from city to city, and popular decorative designs would have been widely circulated. It is, therefore, extremely precarious to assert for any particular city in this district priority in artistic invention. The motive was familiar to Ionian art of the sixth century and appears in beautifully developed decorative form on the neck of the Caeretan hydria which has the representation of the Busiris scene.⁵

17. PLATE XI and Figure 19. *Inventory Number* Θ 227—TC 13. Part of a tile from a pedimental sima.

Dimensions: length, 0.42 m.; height, 0.195 m.; thickness across the top border, 0.047 m.; inner height of panels, 0.16 m.; inner width of right panel, 0.156 m.; of middle panel, 0.137 m.

¹See Körte, *op. cit.* p. 25; and Radet, *La Lydie et le monde Grecque au temps des Mermnades*, p. 221.

²*Altertümer von Pergamon*, I, Text 2, p. 160.

³Buschor, *Griechische Vasenmalerei*, p. 78, fig. 58.

⁴*British Museum Catalogue of Coins, Ionia*, pl. XXI, Nos. 2, 3 and 4.

⁵Pfuhl, *Malerei und Zeichnung der Griechen*, III, p. 35, fig. 153. Compare Furtwängler-Reichhold, *Griechische Vasenmalerei*, Text, I, p. 259.

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Found on April 15, 1922, in the north-eastern corner of the Lydian terrace where it was serving as part of the side walls of a small sarcophagus lying 1.35 m. below the level of the ground.

Description and Style. This piece is broken at the lower right corner and on the left side. Most of the rear projection is also broken away but apparently like the previous tile it was decorated along the under edge by a border of curves, or half-eggs, painted red. The height of the relief of the moulded decorations of the design is graphically illustrated by the cross section given in Figure 19. The designs are similar to those on the preceding number and the distribution of the colors is the same. On the analogy of the complete tile this piece would be restored with four panels. But though the designs of the pieces are similar they were not made from the same mould. This is seen on the star pattern in the slightly different shapes of the palmettes, and in the greater distance on the present example between the central boss and the curved lines of the cross. On the scroll panels it is also the variation of spacing that marks a difference in the moulds. But in spite of these minor differences it is reasonable to assume that the two tiles belonged to the same sima. The two pieces making up the present example were used as part of the side of a coffin and were placed with their decorated surfaces towards the interior, with the fortunate result that the paint has here been well preserved. The three familiar colors are used, black, white and red. The outside borders and the inter-panel vertical bars are painted red. The ground of the panels is cream, against which the relief ornaments in black and red form a striking contrast. On the star panel the boss and the rays are black, but the palmettes and their joining curves are red so that the colors are agreeably interspersed. On the scroll design the full scrolls are black, but they have red terminal buttons, and the small connecting bars and other bud-like ornaments are also red. The vivid colors as preserved here on a slab of large size give a clear impression of the original brilliancy of the exterior appearance of one of these small buildings.

18. *Inventory Number* Θ 229—TC 15. Part of a tile from a pedimental sima.

Dimensions: length, 0.265 m.; height, 0.204 m.; inner width of right panel, 0.152 m.; inner height, 0.162 m.; depth of under projection as far as preserved, 0.105 m.

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Found on April 8, 1922, in the earth above the grave mentioned in connection with the preceding number, where it was associated with characteristic Lydian sherds.

Description and Style. Only the right panel and part of the adjoining panel on the left are preserved. The decoration of the right panel is the star design similar to that which appears on the two numbers preceding. The design is made from a different mould and is more carefully executed than the others. The buds and the plumes of the palmettes are longer and more slender, and the curves are more graceful and accurate. The color distribution on the star pattern is the same as on those previously described, but on the scroll panel the color system is reversed, the long scrolls being red and the associated buds and tendrils black. This distribution gives a much lighter effect to the panel than is conveyed by the opposite scheme. A different system is also adopted for the decoration of the under projection, which here consists of a series of black lozenges on the white ground, bounded by a red band. The variations are, perhaps, sufficient to suggest that this piece belonged to a different building from that on which the two previous tiles were used.

19. *Inventory Number* Θ 228—TC 14. Part of a tile from a pedimental sima.

Dimensions: length, 0.303 m.; height, 0.193 m.; inner width of right panel, 0.153 m.; inner height, 0.155 m.; depth of under projection, 0.08 m.

Found on April 15, 1922, in the side of the grave where our Number 17 was used.

Description and Style. Two panels showing respectively the star and the scroll patterns are preserved practically intact, the star being on the right and the scroll on the left. The workmanship is rougher and cruder than on the examples previously discussed, but the main difference is in the distribution of the colors. Here a checkered effect is produced by exaggerated intermingling of the reds and blacks. On the star pattern the central boss and two long upper buds are black, while the lower buds are red. The four curves joining the bases of the palmettes are painted with the white slip outlined in black with four red spots on each. The base-bands of the palmettes are red and the plumes are alternately red and black, the central one in each case being red. Similar mingling of colors also occurs on the scroll design. The main part of each scroll is red

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but the volutes below the connecting red bands are black, with red terminal buttons. The buds above the connecting bands are black, those below red, and the three buds in the centre of the design and those on the side are alternately black and red. The same color scheme is continued in the design on the under projection where the lozenges are alternately red and black on the white slip. An unquiet effect is produced by this constant alternation of color, which is in such contrast to the beauty and dignity of a piece like our Number 17 that it does not seem possible that both should have come from the same building.

20. Figure 20. *Inventory Number* Ter. 52 (I). Part of a tile from a pedimental sima.

Dimensions: length, 0.383 m.; height, 0.186 m.; inner height of panels, 0.152 m.; inner width of right panel, 0.14 m.; of middle panel, 0.15 m.

Found in 1911 in the foundations on the Lydian terrace near Numbers 4, 5, 6 and 7.

Description and Style. This piece, put together from twenty-one fragments, shows two panels and part of a third of the same general design as the four numbers preceding, with the scroll pattern on the right and left and the palmette in the middle. Several variations, however, in size and in decoration distinguish it from the others. The height is nearly two centimetres less than that of Number 18, the vertical dividing bands are rounded instead of being squared on top, and there are no buds on the sides above the lower volutes of the scroll pattern. The general appearance of the star design is altered by the larger size and more spreading arrangement of the plumes of the palmette; and the scroll pattern is changed by the presence of comparatively large flat discs, instead of small buttons, as the terminals of the volutes. The distribution of colors also provides interesting variations. The two complete panels have a color scheme similar to that of our Number 18, with the large scrolls painted red, but on the broken panel on the left the scheme is like that of our Numbers 16 and 17, with the large scroll painted black. The vertical dividing bands not only differ in shape from the other examples but they are painted alternately red and black instead of all being red, and again in place of red upper and lower borders these are here painted in wide stripes alternately black and white. On the outer edge of the under projection is a broad band of red

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paint, width, 0.07 m. These important differences in design and decoration clearly indicate that this tile, and other fragments of the same type, could not have belonged to any of the sima groups that have hitherto been discussed.

The five examples of the star and scroll type of tile, here presented in our Numbers 16, 17, 18, 19 and 20, illustrate all variations of the design that occur, but numerous other fragments (forty in all) belonging to the various members of the series were found in the same neighborhood.

21. PLATE XII and Figure 21. *Inventory Number* Θ 237—TC 21. A tile with orifice for a spout from a lateral sima.

Dimensions: length, 0.49 m.; height, 0.197 m.; inner height of top band, 0.087 m.; of middle band, 0.027 m.; of bottom band, 0.055 m.; depth of under projection at bottom as far as preserved, 0.203 m.

Found on April 11, 1922, in the north-eastern corner of the Lydian terrace.

Description. This tile is complete except for a small break in the lower right corner, the absence of the spout and the loss of most of the under projection. The decoration is divided into three bands of unequal height. On the broad upper band, below a narrow projecting border with squared edge, is a series of palmettes and lotus blossoms in well-rounded relief (Figure 21). The series begins and ends with a half-lotus, between which are seven units arranged alternately. The lotus is an opened blossom and the palmette is composed of five plumes. The palmettes and lotuses are joined by curved moulded bands, and below each palmette and lotus hangs a dart-shaped pendant. The narrow middle band, which is white, is separated from the upper and the lower bands by moulded ridges, curved on top, and is closed at the left end by a vertical bar. The lowest band is decorated with a series of large eggs which protrude beyond the plane of the rest of the tile and are separated by small ornaments of the spear-head type. A group of three eggs is placed on either side of the orifice for the spout. The spout belonging to this tile was not found but its exact appearance is known from the spout found with a similar complete tile that is listed as the next number of this catalogue. It is also like the spout shown in our Figure 22 below.

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Technique and Style. The arrangement of the decorative scheme of this tile is a development from that observed in the more primitive specimen, our Number 9. As in that case the field is divided into three bands, so arranged that the main ornamental frieze is not disturbed by the protrusion of the spout, while the egg series of the lower band is easily interrupted in the centre without interference with its symmetry. This is an admirable solution of the problem of the association of a practically necessary spout with an harmoniously continuous decorative frieze. The colors of this piece are brilliantly preserved and follow the usual system of an intermingling of red and black items on a cream ground.¹ The upper border and the horizontal dividing bands are red. On the palmette-lotus design the upper part of the lotus is red and the lower part and the stamen are black; the plumes of the palmettes are alternately red and black; the curved bands joining palmettes and lotuses are white, outlined in black, and red, dart-shaped pendants are suspended below each palmette and lotus. The egg-and-dart band is treated in a simple manner with the swelling parts of the eggs white, the moulded rims black and the small darts red. The careful execution of the work and the balanced distribution of the colors produce a pleasing effect of artistic beauty and symmetry.

The use of the palmette-lotus band in numerous varieties and modifications is common in Greek art.² The origin of the motive in Egypt and Assyria has been demonstrated by W. H. Goodyear in his *Grammar of the Lotus*. It appears on early Ionic vases in a beautifully developed form. Especially on the Caeretan hydriae the arrangement of the units and the distribution of the red, black and white colors are similar to the decoration of the Sardis tile.³ It is, therefore, interesting to find a palmette-lotus band in relief of very similar type forming the sole decoration of several pithoi from Caere, now in Room C of the vase collection of the Louvre. M. Pottier shows a section of one of the bands in his *Vases antiques du Louvre*, pl. 36, No. D 272. These vases

¹A similar method of handling the red, black and cream colors appears on the lotus design of a tile of this age and type from Pergamon, *Altertümer von Pergamon*, I, Text 2, p. 160, Beiblatt 9, fig. 3a.

²See Pfuhl, *Malerei und Zeichnung der Griechen*, I, p. 40.

³Pfuhl, *op. cit.* I, p. 181; Walters, *History of Ancient Pottery*, I, p. 354, pl. XXVI; Endt, *Beiträge zur ionischen Vasenmalerei*, p. 4.

THE TILES

must date from early in the sixth century and are certainly of indigenous fabrication. The ornament is derived from Ionian importations, or is due to the influence of resident Ionian artists. An unusual vase which may be cited to support this view is an Etruscan imitation of a Corinthian pitcher in the Museum of Compiègne, on which are four bands of relief decoration, the upper one showing a palmette and lotus design similar to that from Sardis.¹ The Corinthian potters who emigrated with Demaratus in the seventh century from Corinth to Etruria would have disseminated in their new home the oriental motives that were characteristic of the wares at Corinth.²

22. *Inventory Number* Θ 236—TC 20. A tile with a water-spout from a lateral sima.

Dimensions: length, 0.485 m.; height, 0.197 m.; length of spout, 0.235 m.; width of spout at its middle point, 0.106 m.

Found on April 11, 1922, close to the preceding number.

Description. This tile is completely preserved with the exception of a small break in the lower right corner and of the loss of the under projection behind. The colors are similar to those on Number 21 but they are less well preserved, and one variation occurs in their distribution. The curved, moulded bands joining palmettes and lotuses are painted black instead of being left in the white slip with merely an outline in black. The effect of this change is to give a darker appearance to this tile, which distinguishes it noticeably from the other type. Although their dimensions are practically identical it may be questioned whether these tiles were used alternately on the same sima, or if they were not rather from opposite sides of a building. The spout is like the one shown on our next number. It is an open channel extending from an orifice in the tile. On top it is painted red while underneath, within a red border, is a large black lozenge on a white ground.

23. *Figure 22. Inventory Number* Ter. 6 (I). A tile with a water-spout from a lateral sima.

Dimensions: length, 0.496 m.; height, 0.204 m.; depth of under projection, 0.248 m.; length of spout, 0.20 m.; width of spout, 0.157 m.

Found in 1911 near the foundations at the north-eastern end of the Lydian terrace.

¹*Corpus Vasorum Antiquorum, Musée de Compiègne*, pl. 21, Nos. 10 and 13.

²Pliny, *Historia Naturalis*, XXXV, 43.

GROUP III

Description and Style. This piece, as put together from six fitting fragments, is a complete tile except for a missing part of the under projection behind. The field is divided into two bands, a smaller one above with a height of five centimetres, and, below, the main band which is 0.126 m. high. In the centre of the tile is the orifice for the spout, on either side of which is a large lotus blossom, with base and curling tendrils, in relief. The relief, at its highest point, near the bottom of the flower, is one centimetre high. A narrow projecting band separates the main field of the design from the upper border. But this border is an important part of the decorative scheme, with an original design of a series of nine scallop-like ornaments set in low relief against a black ground, and with their white surfaces decorated with a large red disc. Unfortunately the colors on this tile are not well preserved, and, therefore, a description of them will be given in our next number, on which they are in a brilliant condition. The spout is open on top and has rather a shallow curve. It is painted red on top and on the edges, but underneath is covered with a white slip on which are painted side by side two long slender black triangles. The under projection of the tile is decorated with the simple familiar design of a series of curved bands, or half-eggs, painted along the outer edge in red on the white ground.

24. PLATE XIII. *Inventory Number* Θ 242—TC 26. A fragment from a lateral sima.

Dimensions: length, 0.104 m.; height, 0.20 m.

Found on April 8, 1922, at the north-eastern end of the Lydian terrace.

Description and Style. This fragment represents only the right end of a tile like our preceding number, but it shows the original colors in a more brilliant state of preservation than they appear on any other piece of this type. The scalloped decorations of the upper band, with their red discs, are set in low relief against a black background. At the base of this border a narrow red projecting band separates it from the main field of the tile, which is fully occupied by a large open lotus blossom, of which the petals are red and the stamen is black. The bottom of the flower approaches, but does not touch, a red button-like base, from which extends on either side a black moulded, curved tendril. At the bottom the panel is closed by a red band that is wider and projects

THE TILES

farther than the upper band. The height of the relief, as is shown on the projection given on the plate, varies with the different elements of the design, and thus permits numerous variations in the play of light and shade. The excellent state of the preservation of the colors on this fragment again permits a visualization with extraordinary vividness of the brilliant effect that must have been produced by a long series of tiles of this type.

25. PLATE XIV, A and B. *Inventory Number* Θ 243—TC 27. A fragment of the corner of a sima.

Dimensions: length, 0.145 m.; height, 0.123 m.; thickness, 0.048 m.

Found on April 7, 1922, at the north-eastern end of the Lydian terrace.

Description and Style. This is apparently a piece of the upper right corner of a tile like the two numbers preceding. The upper border has a similar decoration, while the edge here makes an upward curve for the corner. The lower panel, however, is plain as far as the main field is preserved, but at the right edge it has a painted, not moulded, decorative border, 0.026 m. wide, of a black double-axe pattern within a red band. In this case, therefore, the petal of the lotus does not extend to the upper edge of the panel, as it does in all other pieces of this sima that were found. For some reason that is not apparent the design was modified in its application to the corner tile. On the right side of the piece, Plate XIV B, the black double-axe pattern is repeated along the edge below a plain red band.



IX. *Fragment of a sima tile with a rearing horse*



X. *Fragment in the Louvre with part of a rearing horse*

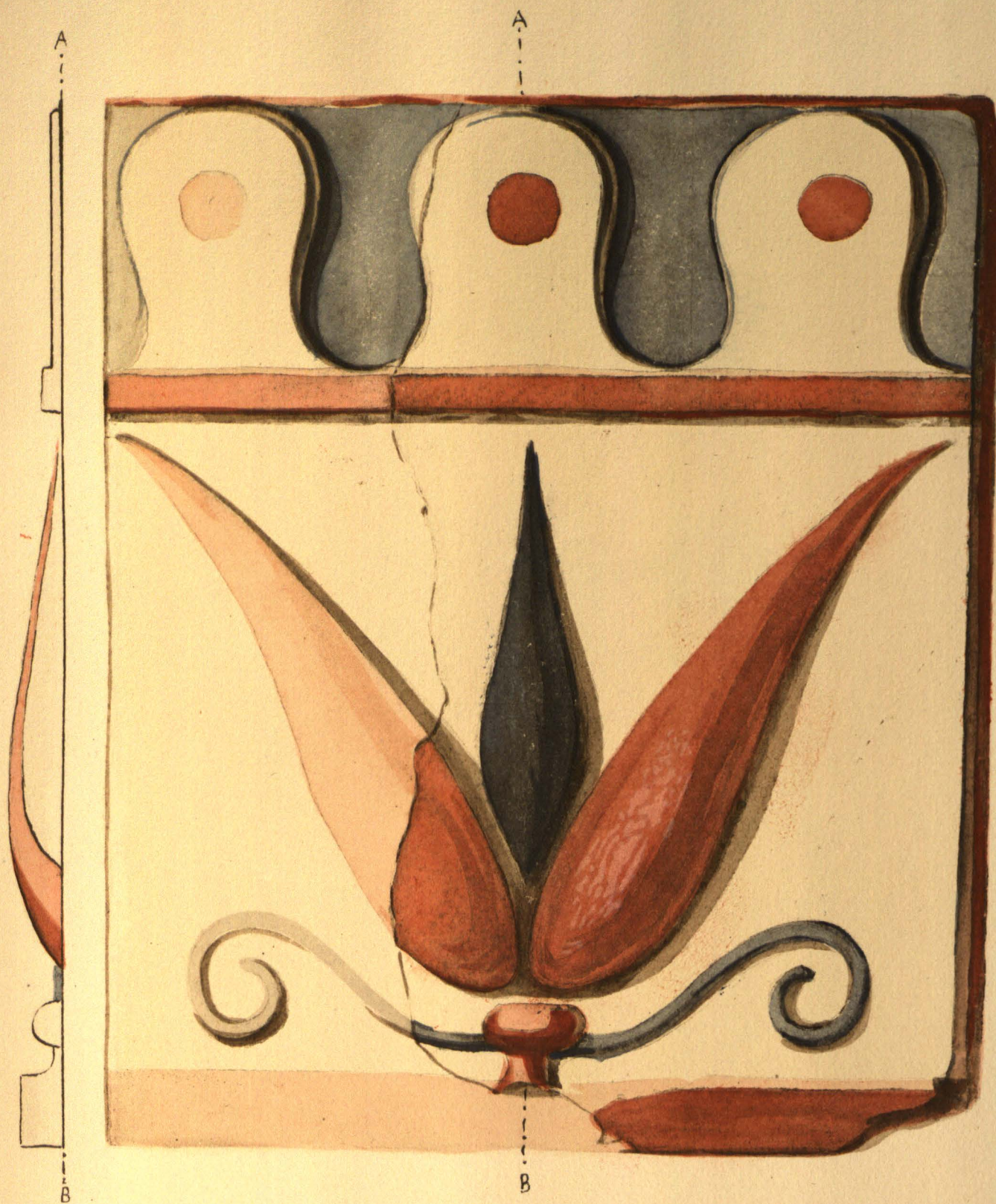


XI. *A tile from a sima ornamented with stars and scrolls*
Reduced one-half



B

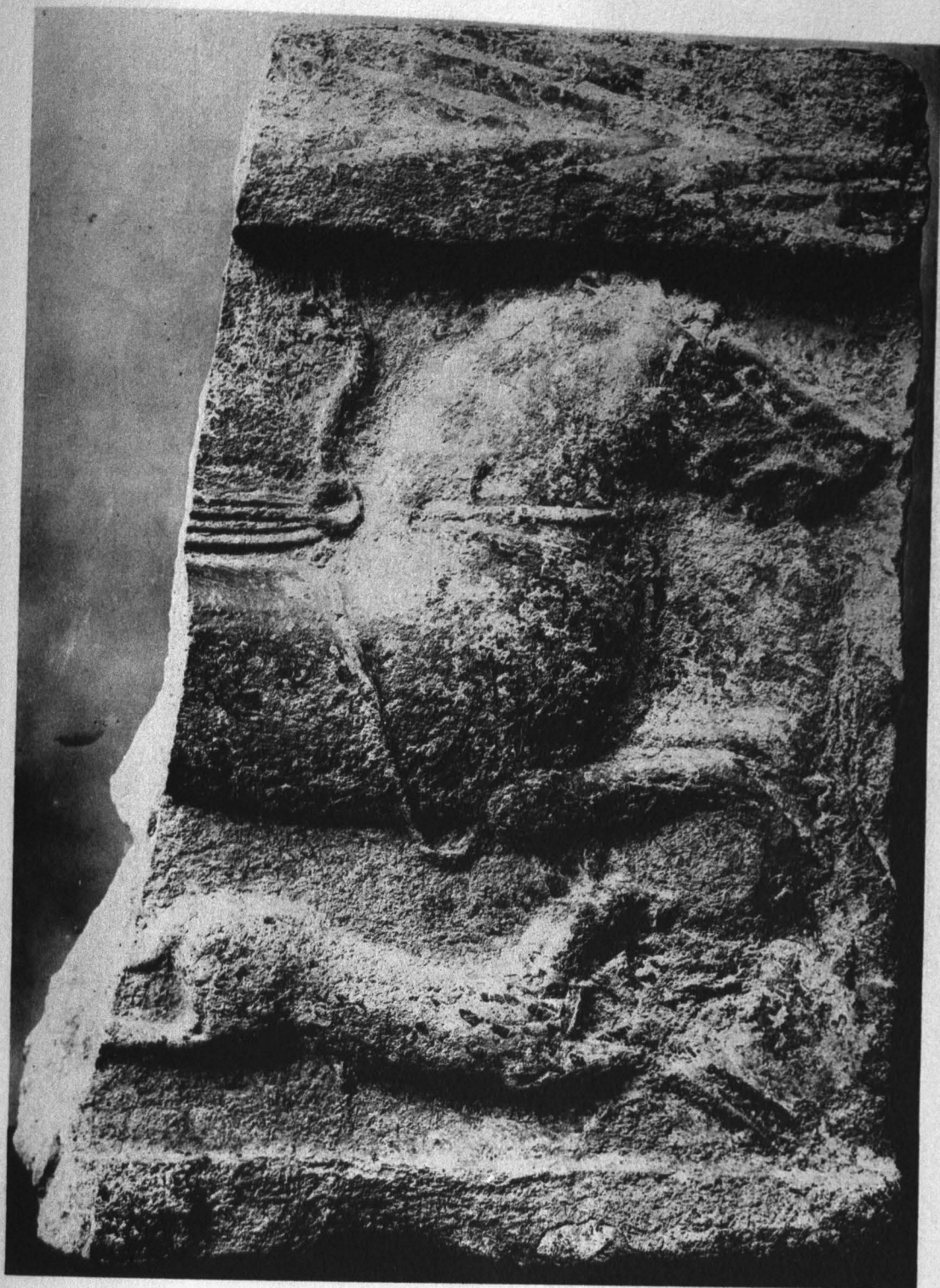
XII. *A complete sima tile with palmette-lotus decoration*
Reduced one-half



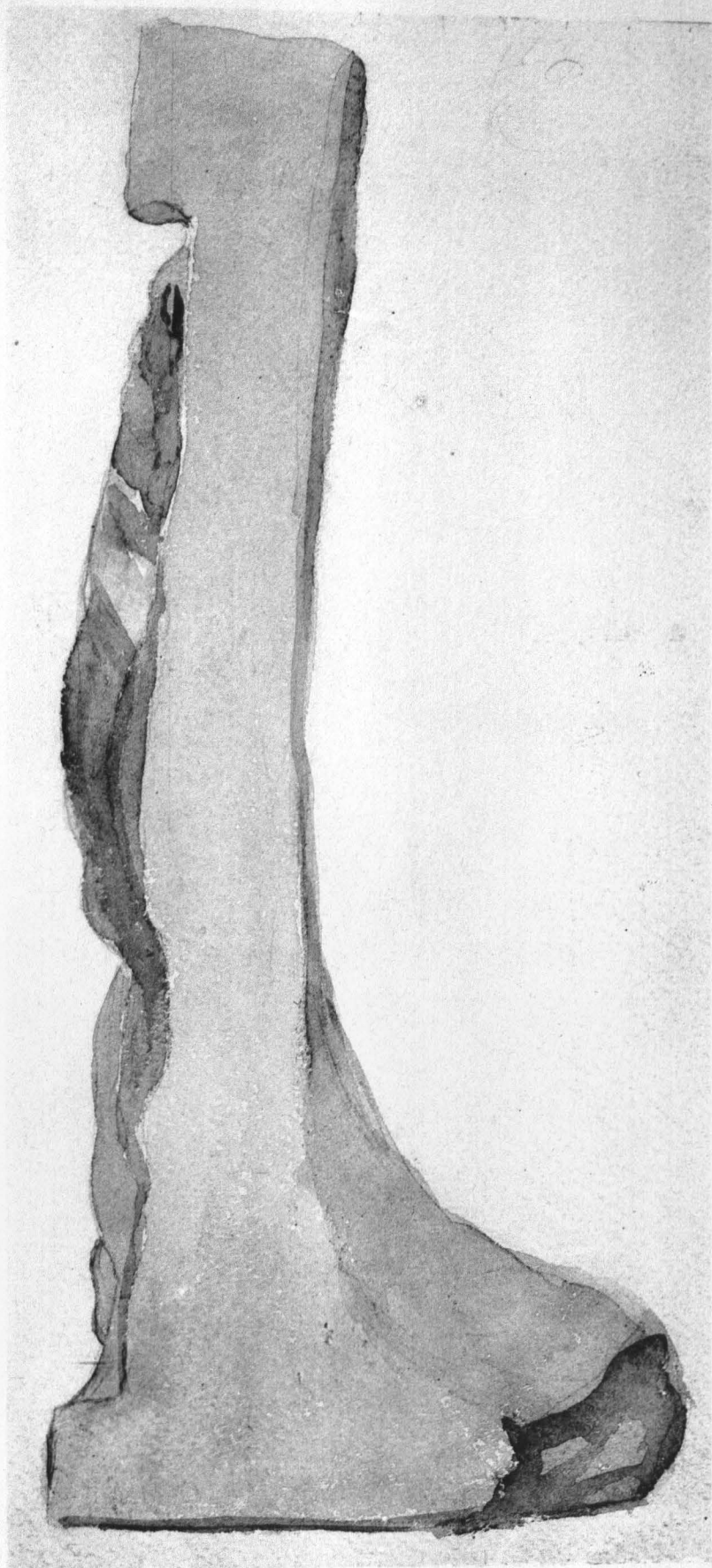
XIII. *A fragment of a tile decorated with large lotuses*



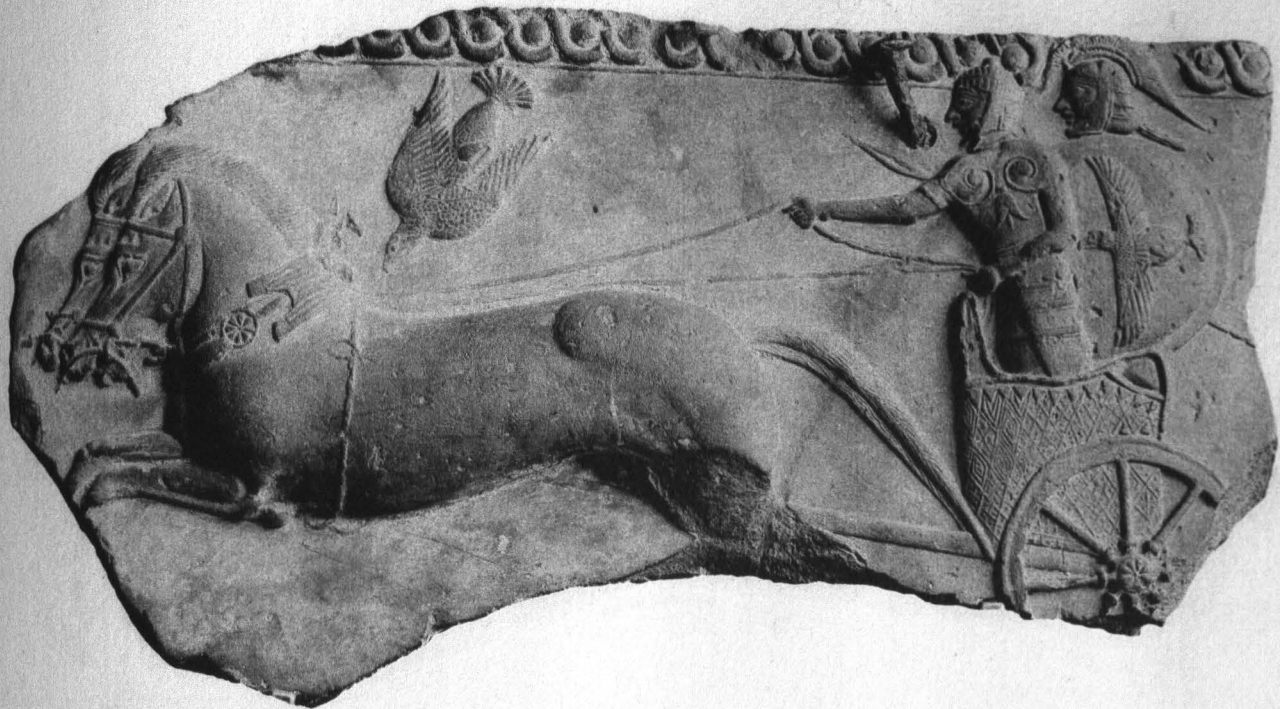
XIV. *Front and side views of a corner tile*



11. Tile Number 11. From a photograph



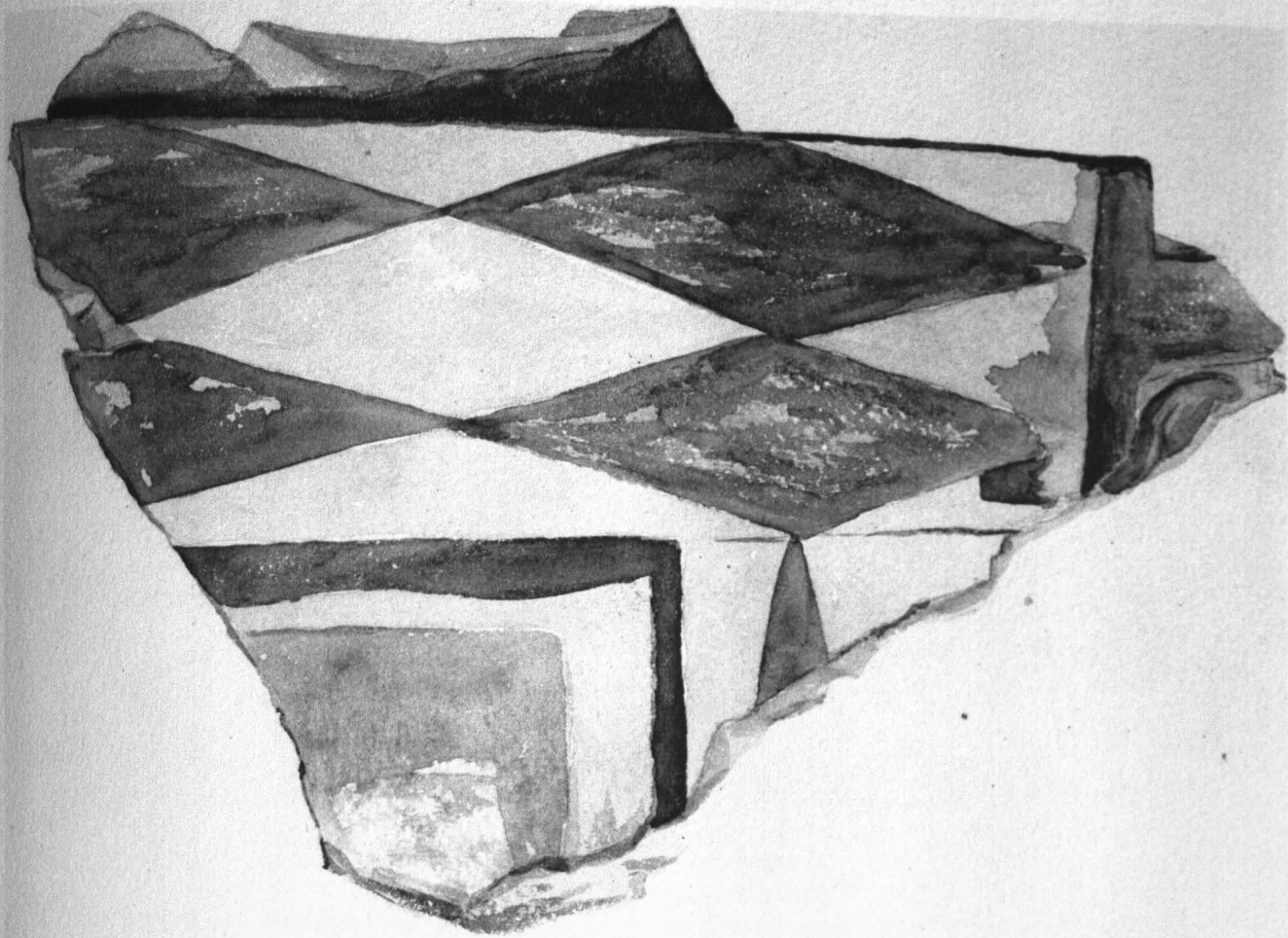
12. *Side view of tile Number 11*



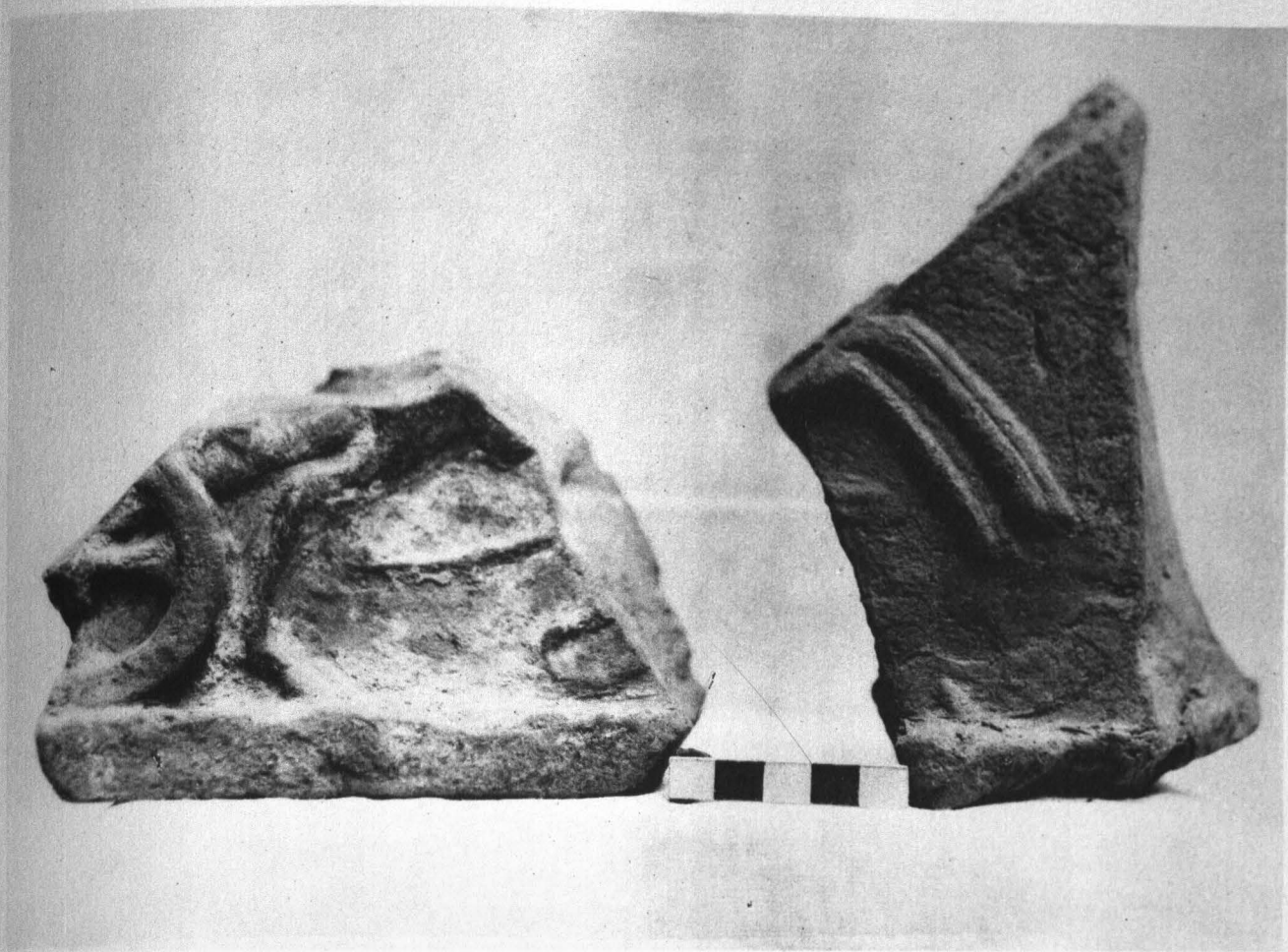
13. *Terra-cotta tile in the Bibliothèque Nationale*



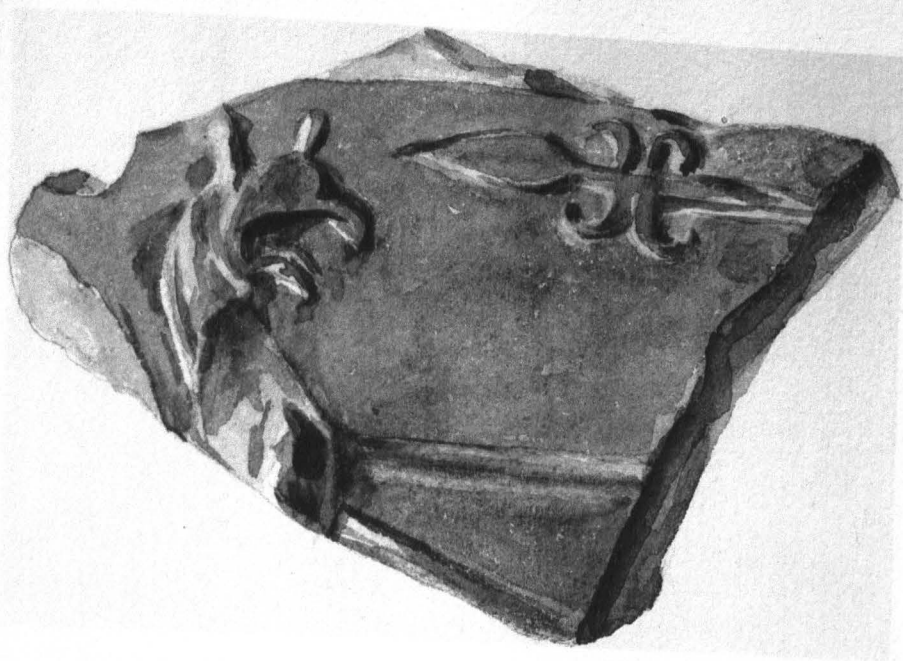
14. Chariot groups on a pithos from Caere in the Louvre



15. *View of the bottom of tile Number 12*
Reduced one-third



16. *Two pieces of a tile decorated with a chariot group*



17. *Fragment with griffin's head from a chariot group*



18. *A tile from a pedimental sima*

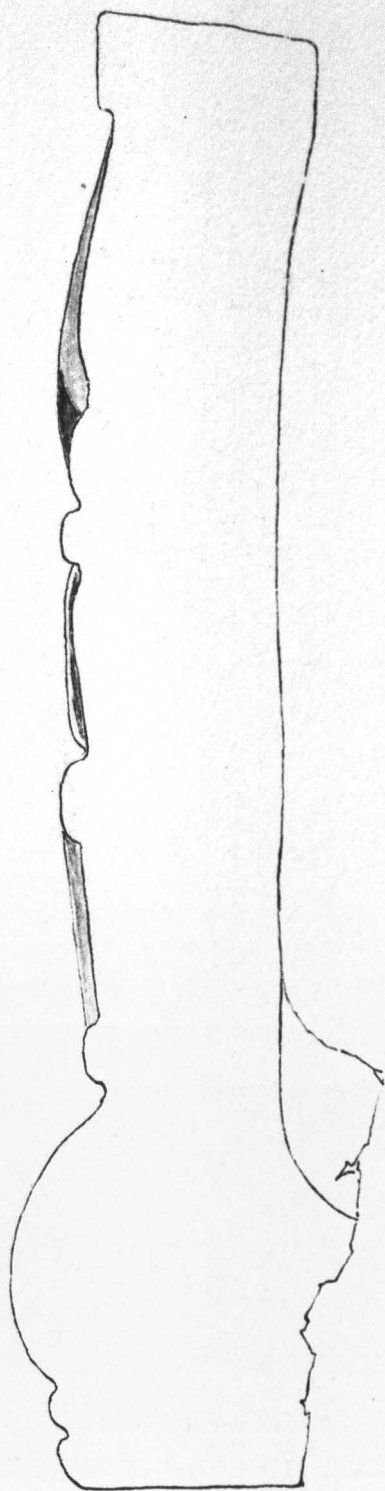


19. *Sectional view of tile Number 17*



20. *Sima tile with star and scroll design*





Section A-B

21. *Sectional view of tile Number 21*



22. *A tile from a sima decorated with large lotuses*

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