















SARDIS



# SARDIS

PUBLICATIONS OF THE AMERICAN SOCIETY FOR THE EXCAVATION OF SARDIS

11

## VOLUME I

### THE EXCAVATIONS

PART I

1910—1914

BY

HOWARD CROSBY BUTLER

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## PREFACE.

When making plans for publishing the results of the American excavations at Sardis we found the archaeological material too great in quantity, and too varied in character, to permit of its adequate discussion within a single volume, or even within two or three volumes. Not only the number of historical periods involved, from the Lydian of the sixth and seventh centuries before CHRIST to the Byzantine of the Middle Ages, but the great variety of subjects, such as architecture, inscriptions, sculpture, coins, pottery, terracottas, jewelry, etc., suggested the treatment of each subject in a separate volume. It was decided therefore to issue a number of fascicules, each by a specialist dealing with a single subject, or part of a subject, and to link these together by an introductory volume describing the work as a whole. This volume was to have a wide scope and was to contain varied information bearing upon all the separate monographs, which could not well be repeated in each, as well as material which could not easily find its place in any one of them. With this end in view the present book, Volume I Part 1 of the series, has been prepared. After some observations on the desirability of scientifically investigating the site of ancient Sardis it reviews the work of the pioneer explorers, and describes the remains of the ancient city as they stood when the excavations were undertaken. It then gives an account of the progress of the work from the opening in the spring of 1910 to the end of the last season before the great war, in the summer of 1914; a chapter is devoted to each season, and there is a final chapter on the tombs of Sardis and an appendix by Mr. WILLIAM WARFIELD upon geological conditions connected with the destruction of the ancient city and the burying of its remains.

The narrative chapters, being more or less in the nature of a journal, afford an opportunity to explain the methods employed in the work, to illustrate its progress from month to month, and to describe the gradual uncovering of a single large building with the accompanying finds of inscriptions, sculptures, coins and other objects. These chapters also show how the excavations at the temple and those at the tombs across the Paktolos were carried on simultaneously, and how the finds at both places served to throw light one upon another. They are intended to give a comprehensive view of the work as a whole, and to bind together the results which are to be published in the separate fascicules. These chapters are in fact an extension of the reports published yearly, during the progress of the excavations, in the *American Journal of Archaeology*. No attempt is made in this volume to present a scientific publication of the various discoveries made at Sardis — this being done in the succeeding volumes — or to draw deductions from the results of the excavations as a whole. The more important finds in all the different fields are briefly described in the order of their discovery and are often illustrated by photographs, so as to give to the scientific reader a

general notion of the character and importance of the objects to be discussed in the other volumes, as well as to provide, for those with a general interest in the excavations who have neither time nor inclination to delve into the series of special monographs, an opportunity to glance at the total results of our first five seasons at Sardis.

The chapter on the tombs is an exception to the rule outlined above. The greater number of the Lydian tombs, being in the form of tumuli, or of chambers cut in the hard earth or rock, are not architecture. They are intimately associated with the numerous objects found in them, and with the inscriptions which belonged to them. The first volume, being of a general character, seems the most logical place in which to give a detailed description of these Lydian burial-places, and in order that all the tombs of Sardis thus far discovered may be treated together, those of later periods are described here also.

It has been decided to treat each class of objects in a separate volume, and to bring out the several fascicules which may be issued upon a given subject as parts of a volume. Thus, in the case of the two fascicules already published, Dr. LITTMANN's on the *Lydian Inscriptions*, Part 1 of Volume VI, includes only a part of the total number of our Lydian texts, while Mr. BELL's on the *Coins*, Part 1 of Volume XI, embraces all the coins discovered during the first five seasons; this system provides for the publication, in other Parts of the same Volumes, of other inscriptions and of coins that may be found in the future.

The subjects of the various volumes and their editors, so far as they have been decided upon, are as follows:

- Vol. I. The Excavations. Part 1. Seasons 1910—1914 (The present volume).  
HOWARD CROSBY BUTLER.
- Vol. II. Architecture. Part 1. The Temple of Artemis. HOWARD CROSBY BUTLER.
- Vol. III. Lydian Sculpture. Part 1. Seasons 1910—1914. T. LESLIE SHEAR.
- Vol. IV. Greek Sculpture. Part 1. Seasons 1910—1914. T. LESLIE SHEAR.
- Vol. V. Roman and Christian Sculpture. Part 1. The Sarcophagus of CLAUDIA  
ANTONIA SABINA. CHARLES RUFUS MOREY.
- Vol. VI. Lydian Inscriptions. Part 1. ENNO LITTMANN.  
Part 2. WILLIAM H. BUCKLER.
- Vol. VII. Greek and Latin Inscriptions. Part 1. Seasons 1910—1914. WILLIAM  
H. BUCKLER and DAVID M. ROBINSON.
- Vol. VIII. Pottery. Part 1. Seasons 1910—1914. GEORGE H. CHASE.
- Vol. IX. Lamps. Part 1. HAROLD W. BELL.
- Vol. X. Terra-cottas. Part 1. Seasons 1910—1914. T. LESLIE SHEAR.
- Vol. XI. Coins. Part 1. Seasons 1910—1914. HAROLD W. BELL.
- Vol. XII. Gems. Part 1. Seasons 1910—1914.
- Vol. XIII. Jewelry and Gold Work. Part 1. Seasons 1910—1914. C. DENSMORE  
CURTIS.
- Vol. XIV. Silverware, Bronze and Iron Work.
- Vol. XV. Objects in Stone.
- Vol. XVI. Objects in Ivory and Bone.
- Vol. XVII. Glass.

Since the above scheme of publications was planned the great war has intervened, and all Asia Minor has been disturbed by the more recent hostilities between the Greeks and the Turkish Nationalists. In the spring of 1921 Major WILLIAM R. BERRY, for four years a member of the excavating party at Sardis, visited the excavations, and has sent back a report which makes it plain that certain minor modifications must be made in the immediate carrying out of the scheme. Sardis has been in the fighting zone, the surrounding villages have been destroyed, and the American excavation-house has not escaped wilful injury and pillage at the hands of the contending forces. Fortunately little damage was done to the ruins of the temple, or to the heavy objects in marble that were left in the excavations, and in any case most of the material was already in hand for the publication of Volume II. But many objects stored in the house have been injured or totally destroyed. The heads of the two reclining figures upon the sarcophagus of CLAUDIA ANTONIA SABINA have been carried away, and the larger fragments have been intentionally mutilated; but a sufficient number of photographs and measurements had been made to ensure full publication of the monument. The horse's head discovered in 1914 has disappeared; but all other pieces of sculpture seem to have been spared, so that Volumes III, IV and V can be issued as planned. The blocks and fragments bearing Lydian texts and all the other inscribed stones were unmolested, so that all the material for the preparation of Volumes VI and VII is secure. The smaller and more fragile objects were naturally the ones to suffer most in the looting and pillage. Fortunately most of the Lydian pottery had been taken to a place of safety. Other rare specimens of pottery, terra-cottas, small bronze utensils and the like, were saved through the foresight of the Swedish Consul at Smyrna, who was in charge of American interests after the withdrawal of the United States representatives. At his suggestion a commission was sent to Sardis in June 1918, under the direction of Professor GEORG KARO, Director of the German Archaeological Institute of Athens, by whom the notes, card-catalogues and scientific instruments of the expedition, together with a large assortment of antiquities which were the most precious and the most easy to carry, were taken to Smyrna. It is owing to the scientific interest and devotion of these two gentlemen that several of the volumes on the smaller finds can be published. All the material for the Part of Volume VIII devoted to Lydian Pottery was already in process of preparation and a large number of photographs to illustrate it had been made; but the later pottery, which was stored in the great store-room of the excavation house, has perished leaving few records for publication. The most lamentable loss is that of the collection of ancient clay lamps. The tombs at Sardis had yielded a very large number of interesting lamps, dating from Lydian to Roman times. These were carefully inventoried, and stored in the excavation-house; but only a few of them had been photographed, work upon the collection having been deferred for the projected season of 1915. They were completely destroyed during the later military occupation of the house, and a publication of the catalogue without illustrations would be a useless task. Therefore Volume IX will not be published



until the excavations have been resumed and a new collection of lamps is made. Volume X, on the terra-cottas, will be published in time, Volume XI, on the coins, has fortunately been issued, and the coins themselves are in the Imperial Ottoman Museum. The gems, the jewelry and gold-work, and most of the silverware were, like the coins, carried to Constantinople at the end of each season, and it is presumed that they are still safe in the keeping of the Museum, thus ensuring the publication of Volumes XII and XIII. But the collection of bronze mirrors, the objects in stone, those of ivory and bone, and all the glass, have apparently perished, so that the places and numbers of the remaining volumes will have to be reserved for the results of future seasons of excavation.

Three maps are issued with this first volume; N° I a map of Sardis and its Environs, reproduced from a large survey by Mr. LLOYD T. EMORY, and two on a larger scale covering a smaller area: II giving a survey of the ground about the temple before the work began, and III showing the state of the excavations at the end of the season of 1914; both made by the regular engineers of the staff. Maps I and III are now issued provisionally; for it is intended to republish the former in colours, with more detail and on larger scale, as soon as the survey has been extended to include the valley of the Dabbagh Tchai, and to bring out other issues of the latter, from time to time, as the excavations progress.

The members of the expedition and the other scholars who have consented to prepare our material for publication have devoted considerable thought to the subject of the spelling to be used, and have agreed upon the following general rules. It was decided to spell Sardis as the name has come into English literature through the Bible, Shakespeare and numerous more recent writers, rather than in the more scientific form of Sardeis or Sardes. Words and proper names, of whatever derivation, which have taken on a definite English form, such as Mausoleum and Croesus, are to be spelt in the ordinary way. All other words and names of Greek origin are transliterated from the original as directly as possible, using *k* for *c*, *ai* in place of *ae*, and the terminations *os* and *on* instead of *us* and *um*. Words and names of Latin origin are of course transliterated directly, while those from Oriental languages are treated according to the scheme devised by Dr. ENNO LITTMANN and employed in the publications of the American and Princeton Expeditions to Syria.

In closing this Preface I wish to express my thanks to His Excellency HALIL EDHEM Bey, Director of the Imperial Ottoman Museum, for unnumbered services of courtesy and kindness rendered in connexion with our work under his authority; and to AZIZ Bey, our Imperial Commissioner during three years, for his sympathetic cooperation. It is also a pleasure to record obligation to numerous members of the American Embassy in Constantinople, especially to the late WILLIAM W. ROCKHILL, Ambassador during the period when permissions were secured and the work inaugurated, as well as to Mr. HOFFMAN PHILIP, Counsellor, and Mr. SCHMAVONIAN, dragoman of the Embassy. To the officers of the American Society for the Excavation of Sardis for their hearty support, and to my colleagues of the expedition for their enthusiastic collaboration, I am deeply indebted; and here I would particularly mention how much both the expedition and I myself owe to the late CHARLES F. COOK, who as chief engineer

during the first season, laid out the plans of excavation followed for five seasons which have contributed much to our success, and who in 1918 lost his life in the service of his country. The task of reading and revising the proofs of this Part has been kindly undertaken by my colleague WILLIAM H. BUCKLER.

PRINCETON UNIVERSITY.

August, 1921.

HOWARD CROSBY BUTLER

Director of Excavations.

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## CHAPTER I.

### INTRODUCTION.

#### 1. THE NEED OF EXCAVATIONS AT SARDIS.

Archaeologists the world over had long wished that excavations should be undertaken at Sardis, the chief city of ancient Lydia. They believed that archaeological work at this spot would yield results of more than usual significance. The antiquity of the site, its importance in history and its geographical position, all made it appear almost certain that Sardis held the keys to many difficult historical and archaeological problems. The definite allusions by ancient poets and historians to Lydia and its capital of themselves suggest a fairly remote date for the beginnings of the city's importance, and the references to the Lydians in Assyrian texts<sup>1</sup> would seem to carry the history of this people even farther back into antiquity. The historical importance of Sardis in the Byzantine and Roman epochs is perhaps somewhat diminished by

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<sup>1</sup> See MÉNANT, *Annales des rois d'Assyrie*, 1874, pp. 258, 278, and the translation by RADET, *La Lydie*, pp. 177—178. For a document dating CYRUS' Lydian Expedition in April, 547 B.C., see *Klio*, XVII, 1920, p. 114.



comparison with other cities of Asia Minor; but its prominence under the rule of ALEXANDER and his successors is attested by the historians ARRIAN and POLYBIUS, while under the Persians it was certainly a city of the first rank, and may be considered as the western capital of the Persian Empire. As the centre of Lydian rule under CROESUS and his predecessors, the story of Sardis, from the pen of HERODOTUS, is partly historical and partly mythical; but no one would question its importance for archaeology. Behind that period we can not go, except by conjecture, and at this point archaeological investigation must come to our aid. We know that the Hatti, or Hittites, who had a great city at Boghaz-Kiöi as early as the third millennium B. C., pressed their dominion from northeastern and central Anatolia westward, over and beyond Sardis, leaving monumental evidence of their occupation in the "Niobe" above Magnesia ad Sipylum, and in the rock sculptures of the Kara-Bel.<sup>1</sup>

The above historical considerations, taken only as applying to Sardis itself or to Lydia, are important enough, but in connexion with the geographical position of the city they become of even greater significance, especially for the solution of vexing questions as to the origin and development of Aegean, Ionian and Greek cultures. We have to remember that Sardis was never an Ionian city. Lydia bordered upon the Ionian states, and at times embraced them; but the civilization of Lydia, its language and its art, certainly had origins very different from those of their Ionian counterparts. Indeed we know from HERODOTUS and from other Greek writers that the Ionians looked upon Lydian culture as older than their own. RADET<sup>2</sup> and HOGARTH<sup>3</sup> go so far as to assume that interior Lydia could boast of a comparatively high civilization before that of Asiatic Greece had come into being in the cities of the Ionian littoral. After the establishment of Greek culture in Asia it is evident that the Ionians on the coast maintained most intimate relations with Lydia from the archaic period onwards, and that it was the Lydians with whom they carried on their most important trade from the earliest days of their history. On the other hand we have contemporary proofs of the relations that existed between Lydia and Assyria in the seventh century; and much has been written to show that in far earlier times Lydia was in indirect communication with Mesopotamia through the medium of the Hatti, who ruled Western Anatolia, at first directly, and perhaps later indirectly by the agency of Phrygia. Now Sardis, the Lydian capital, sat astride the "Royal Road" which in historical times connected Ionia with the East. This road, one of the most important arteries of ancient commerce in Asia Minor, undoubtedly followed the course of a trade route as old as civilization. A city so placed would necessarily have been a clearing-house, so to speak, for the trade between Greece and the Orient. In this way Sardis becomes a very important pool in the stream of influences which flowed from Mesopotamia into Greek culture, and which are so plainly evident in early Ionian art. Various questions then arise as to whether Lydia, while playing the rôle of middleman, developed a culture of her own; whether that culture was in the main independent; what, if anything, it borrowed from Hittite or Mesopotamian sources in the period antedating the rise of Asiatic Greek civilization,

<sup>1</sup> See A. E. COWLEY, *The Hittites*, 1920, pp. 8, 26, 27, figs. 11, 12.

<sup>2</sup> *La Lydie*, pp. 273, 281.

<sup>3</sup> *Ionia and the East*, p. 78.

and what it derived from Ionia after that civilization had been established; in other words, what was Western Anatolian culture? Some of these questions should be answered by the excavation of Sardis.

## 2. PROBLEMS.

One of the first problems that presents itself is a serious one for the prospective excavator. The Sardis which we know to-day is unquestionably the Sardis of Roman and Hellenistic times; but is it certainly the Sardis of CROESUS? And if we can show that it is the Sardis of CROESUS' time, do we know that it is the site of the capital, or even of a city, of the earlier Mermnadae, of the Heraclidae, and of the still earlier dynasties for which HERODOTUS allows, and whose historical character is vouched for by GELZER? Only excavations at the site could give us any assurance upon these questions, and I shall be anticipating by only a little the outcome of my story if I state at this point that the first five digging campaigns established beyond question two facts; first, that the site marked by many monuments as the Sardis of Roman and Hellenistic days is the Sardis of CROESUS; and second, that the place was the site of a high culture, and probably of the capital city, for many generations before the end of the Mermnad rule.

The second problem confronting the excavator was that of deciding in what particular part of the enormous area covered by the ruins of Sardis he should begin digging. For in case the remains of the earlier and the later city were not in one and the same place, it would naturally be decided at the outset that the former should be made the immediate object of investigation. No surface indications whatever of the existence of the Lydian city were visible, although extensive remains of the Roman city were to be seen at one end of the area of the ruins and two Hellenistic columns protruded from the earth far away in another quarter. It was therefore necessary to fall back upon two indirect indices, the one the statement of HERODOTUS that the river Paktolos ran through the agora of Sardis, the other the presence of the two standing columns. These indices taken separately were helpful in only a limited degree; for the bed of the river is strewn with fragments of pottery of many periods throughout half a mile of its length; while the site of the Greek temple merely suggested that remains of an older building might be found underneath it, as at Ephesos, and that ruins of the older city might cluster about it. But the two indications seemed to converge at the river-side, at a point nearest to the columns, and here operations were actually begun.

The choice of this place brought forth a third problem, purely practical, which had hitherto deterred excavators from undertaking work here, the problem of how to deal with the great depth of the accumulated soil and débris which had buried the part of Sardis lying between the hill and the river.. This involved not only much time and expense in the actual removal of the soil, but also serious difficulties in disposing of it afterwards. This twofold problem was solved, the first part by competent engineers, as is to be described later in this volume; the second part by chance, or at least by the chances of Paktolos' wanderings. The river from time to

time rises in flood, overflows its old course, and often chooses a new one when it settles down again. Thus the bed of Paktolos is far wider than the stream usually requires, and affords an excellent place for depositing earth from excavations, giving also an indefinite promise that some of it will be carried away by the next flood. Pits sunk in the river bed, before the excavated soil had begun to accumulate, proved that no antiquities were to be found there, so that this site for disposal of earth seemed to be not only convenient but safe.

### 3. THE PIONEER EXPLORERS.

No systematic investigation of the site of ancient Sardis had been undertaken before the coming of the American Expedition in 1910, although some attempts had been made by SPIEGELTHAL in 1854 to examine the Lydian "royal tombs" of Bin Tepé far to the north, beyond the Hermos, and shafts had been sunk in the neighbourhood of the great Ionic columns, first by WOOD about 1750, then by DENNIS in 1882, and finally by MENDEL, for the Imperial Ottoman Museum, in 1904. The work of these earlier investigators will be discussed in greater detail in connexion with the tumuli and the temple. It would be impossible as well as unnecessary to review the observations of all the scholars who in their writings have touched upon the subject of Sardis, and equally unimportant to record the visits of all the modern travellers, or even of the archaeologists, who have reached this site and have published descriptions or reflections upon it. But it will not be out of place to name some of the pioneer explorers who reached Sardis in the seventeenth, eighteenth and early nineteenth centuries, especially those who made notes concerning remains that have since disappeared.

The location of Sardis seems never to have been forgotten, although there are no remains to suggest that it has been anything more than a small village since the ravages of TIMOUR LENG in the 15<sup>th</sup> century. Yet the very earliest travellers of whose visits we have records were in no doubt as to the identity of the place. CYRIACUS, the learned scholar, must have come to Sardis either in 1412—1414 or in 1426—1431. He copied there four inscriptions, and noted that one of these was "*ad Sardianam civitatem*".<sup>1</sup> It was some time before 1670 that JEAN-BAPTISTE TAVERNIER,<sup>2</sup> on one of his voyages, "lodg'd in a Park" here, and recorded a brief description of the site. He recognizes Paktolos, Tmolos, and Hermos, the three great geographical landmarks familiar in ancient literature, and realizes that he is in Sardis, though he makes no comment on the ruins. Immediately after 1670 an Englishman, THOMAS SMITH<sup>3</sup>, came to Sardis, and wrote a brief but interesting report of what he found. In 1699 EDMUND CHISHULL<sup>4</sup> reached the site. The account which he published is of real archaeological interest; for he gives us a clear description of the ruins of the great temple, from which we can determine the changes made by time during the

<sup>1</sup> See *B. C. H.* I, 1877, pp. 84, 85, nos. 13, 15, 21. When BOECKH edited *C. I. G.* 3457, 3461, 3462, the copies by CYRIACUS were still unknown. For accounts of his life and journeys, see *C. I. L.* III. p. xxii; *Eph. Epigr.* II, 1875, pp. 2—3.

<sup>2</sup> *The Six Voyages of J.-B. T. . . . through Turkey into Persia, and the East Indies, finished in the year 1670.* Made English by J. P(HILLIPS) London, 1677. p. 36.

<sup>3</sup> *Septem Asiae Ecclesiarum Notitia.* 1676. . . . pp. 27—32; *Epistolae Quatuor*, 1674. . . . pp. 136—137.

<sup>4</sup> *Travels in Turkey and back to England.* London 1747. pp. 15, 16.



two hundred years since his visit. None of these early explorers tells us the source of his topographical information, nor does any one of them claim the distinction of having been the first to identify the rivers and mountains mentioned in Greek literature. We must therefore assume that these topographical identifications were matters of common knowledge, though only among educated travellers. All of those geographical features have long had their Turkish names, and the peasants, now and for centuries past the only inhabitants, are unacquainted with the ancient names, and were undoubtedly equally ignorant in the seventeenth century. Only the site of the city itself has retained its ancient name under the Turkish form of *Sart*.

Sieur PAUL LUCAS,<sup>1</sup> who passed through Sardis on a voyage made before 1714, appears to have been less erudite than his predecessors, for he gathers from the inhabitants the fact that the place is ancient "Sarde". He makes brief comment on the vastness and beauty of the ruins, and says that the little village is still called *Sarde*. The next visitor was the first to make an investigation below the surface: ROBERT WOOD, famous for his monumental works on Baalbek and Palmyra, some time before 1750 excavated around one of the standing columns of the great Ionic temple. WOOD himself, in the introduction to his *Palmyra*,<sup>2</sup> refers to visits made to the principal sites in Asia Minor, "particularly in Lydia, Ionia and Caria," and to the fact that he was provided with tools for digging, while CHANDLER, writing over ten years later, mentions a column "which was cleared by Mr. WOOD". In 1750 CHARLES DE PEYSSONEL<sup>3</sup> wrote a description and made sketches of the ruins of the Akropolis, of the temple and of other buildings, which are our first graphic records (Ill. 1) and will be discussed later. In 1764 the Society of Dilettanti voted a sum for a journey in Asia Minor to RICHARD CHANDLER, D. D.<sup>4</sup> Soon after that date Dr. CHANDLER reached Sardis, but the report of his journey was not published until 1776. His account of the temple is the most complete up to that time; he also makes mention of the citadel, and refers to the visits of CHISHULL, PEYSSONEL, and WOOD. The first traveller after WOOD equipped with sufficient training to make a satisfactory publication of the temple was the great COCKERELL, who visited the site in 1812; but he attempted nothing of the sort. I have seen memoranda and sketches made by him at Sardis in the hands of his daughter-in-law Mrs. PEPYS-COCKERELL in London, but till 1903 nothing of his was published except the note, with a simple outline drawing of the temple, which appears in WILLIAM MARTIN LEAKE's *Journal*.<sup>5</sup> It is to be regretted that COCKERELL did not employ on a larger scale here in Sardis his wonderful gifts as a draughtsman; for many details of the temple, and probably of other buildings, have disappeared since his time. I am not certain that LEAKE himself ever reached Sardis. He falls back upon descriptions furnished by others as if he had not been on the site; though at the same time he mentions the Tomb of ALYATTES at Bin Tepé,

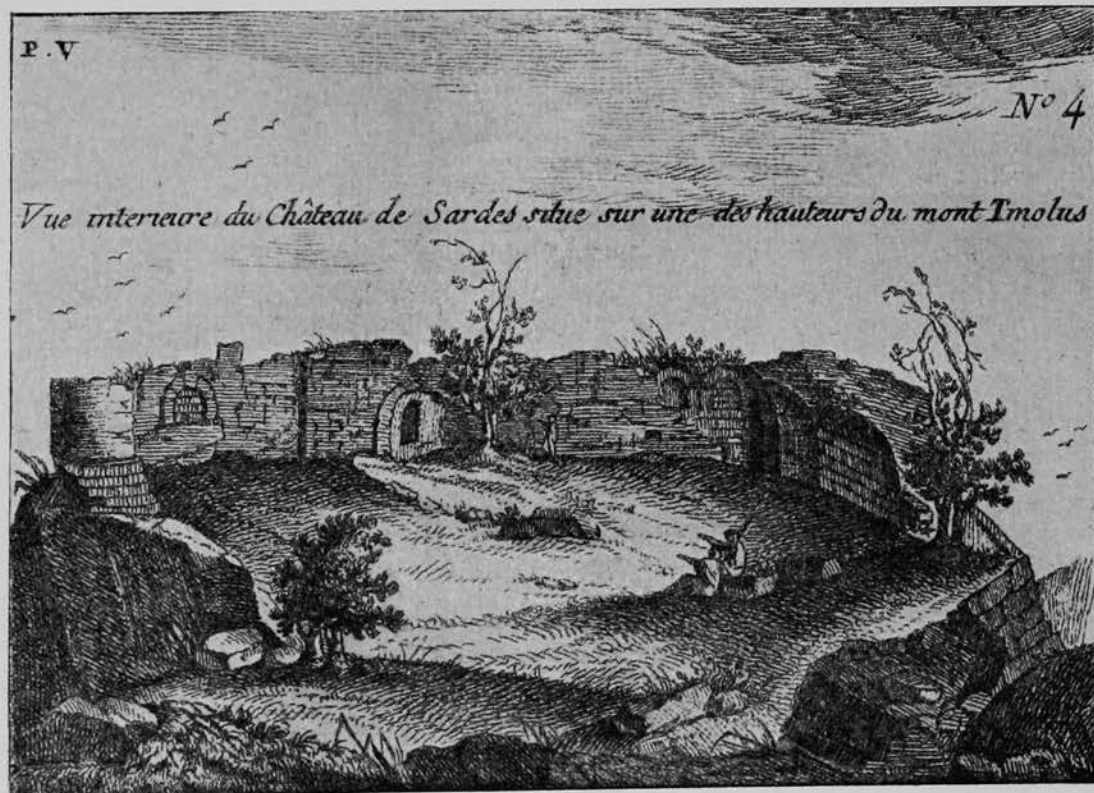
<sup>1</sup> *Voyage du Sieur PAUL LUCAS . . . dans la Grèce d'Asie*. Amsterdam, 1714. Vol. 1, p. 238.

<sup>2</sup> *The Ruins of Palmyra, otherwise Tedmor in the Desert*. London, 1753, p. 3.

<sup>3</sup> *Observations historiques et géographiques sur les peuples barbares*, Paris, 1765, pp. 336—337.

<sup>4</sup> *Travels in Asia Minor . . . Made at the Expense of the Society of Dilettanti*. London, 1776, p. 225.

<sup>5</sup> *Journal of a Tour in Asia Minor, with Comparative Remarks on the Ancient and Modern History of that Country*, 1824, pp. 265, 342; C. R. COCKERELL, *Travels in Southern Europe and the Levant*, 1903, pp. 143—145.



III. 1. PEYSSONNEL's Drawings of the Akropolis of Sardis.

the Temple of "Cybele" on the bank of the Paktolos, the Theatre and Stadium and a church. His *Journal* was not published until 1824.

ANTON VON PROKESCH,<sup>1</sup> the famous traveller, reached Sardis in 1825, and, in his vivid and enthusiastic style, gives detailed descriptions of the whole site, the Temple, the Akropolis, and the buildings of the Roman city, adding frequent quotations from the ancient Greek and Latin texts. In the following year LÉON DE LABORDE<sup>2</sup> stopped at the ruins, wrote a brief account of them, and published a distant view of the temple in his frontispiece. Several other travellers came to Sardis during the middle decades of the nineteenth century and have made longer or shorter reports of their visits, but added nothing to the comments of the earlier explorers.

It was not until 1882 that ground was again broken over the ruins of Sardis. In that year GEORGE DENNIS, the British Consul at Smyrna, while conducting excavations among the Lydian tumuli of Bin Tepé, dug a long trench and two pits on the site of the temple. DENNIS published no account of this work, so far as I have been able to discover, and for information about it we must depend upon a letter written in September 1882 by Mr. FRANCIS H. BACON, of Boston, to Professor CHARLES ELIOT NORTON.<sup>3</sup> Mr. BACON was a member of the American excavating party at Assos, and made a trip to Sardis where he was the guest of DENNIS in his camp at Bin Tepé. I shall have occasion to refer to this letter from time to time in this volume; for it gives a clear and graphic account of the work undertaken by DENNIS at Bin Tepé and on the temple site, and it has never been published. At this point I shall quote only a passage which has to do with the excavations at the temple. The letter reads: "Mr. DENNIS has not begun to clear off the temple plan in a systematic manner, *that* would be an expensive affair. So far he has only dug pits and trenches, and the only thing he has found (which however is well worth all his trouble) is a beautiful colossal head, supposed to have belonged to a statue of Cybele. He measured from the columns at the east to where he supposed the west end to be, and ran a trench from there eastward into the naos. He found a terra cotta Roman pavement and very few architectural fragments (but perhaps these may lie outside his trench). Just beyond the centre of the naos, lying upon about a metre of débris, he found the colossal marble head lying face down (Ill. 2). Excepting a mutilated nose, it is almost in a perfect condition. Judging by the position in which it was found it is possible that the rest of the statue may be brought to light when the trench is extended. I did not see the head . . . I saw only a photograph. It is entirely different from any Greek or Roman head that I have ever seen. The mouth was large, and the cheek bones prominent, it was the head of a matron and not of a young woman, in fact there is hardly any doubt about its being a representation of Cybele. The workmanship is rather non-committal and it may be of early or late date".<sup>4</sup> This is the earliest account of the first excavations on the site of the city of Sardis, if we except the uncovering of the base of one column by WOOD

<sup>1</sup> *Erinnerungen aus Aegypten und Kleinasien*. Wien, 1831, Band III, pp. 138—164.

<sup>2</sup> *Voyage de l'Asie Mineure*. Paris, Didot, 1838. Frontispiece. See also the frontispiece to J. K. BAILIE's *Fasciculus* I, 1842, inscribed "Vestigia aedium Cybeles apud Pactolum".

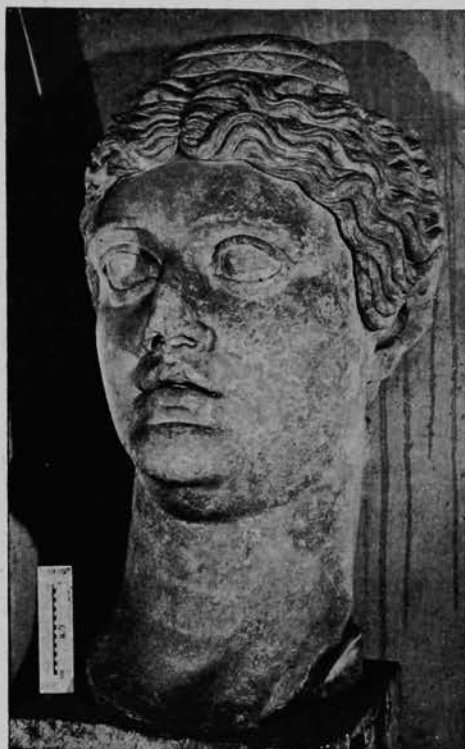
<sup>3</sup> This letter is now in Mr. BACON's possession.

<sup>4</sup> This head, probably representing FAUSTINA the Elder, is now deposited in the British Museum.



in the middle of the eighteenth century. DENNIS' trench and two pits were still visible, though partly filled up, when the American expedition began work in 1910. A survey was made of these diggings, and also of the earlier ones of WOOD and

the later ones of MENDEL, before they were obliterated in the complete excavation of the temple (see Map).



Ill. 2. Colossal Head found by DENNIS.

Many years after these excavations by DENNIS, a plan was set on foot by OSMAN HAMDY Bey, Director of the Imperial Ottoman Museums, for a more complete exploration of the temple site under his auspices. In 1904 an assistant of his, M. GUSTAVE MENDEL, was charged with making *sondages* on the site with a view to estimating the cost of the proposed excavations. He dug pits about three of the columns of the front row, in search of sculptured drums like those of the Hellenistic temple at Ephesos, and, although he did not find what he sought, he published photographs and descriptions of the carved bases which he brought to light. The accumulated earth and débris at the east end of the temple was found to be about ten metres deep, and many obstacles to digging, like huge fallen building stones, were encountered in the course of this

work, with the result that the plan of HAMDY Bey was abandoned on the ground of expense. MENDEL published however an interesting and well illustrated description of the site of ancient Sardis.<sup>1</sup>

#### 4. BIN TEPÉ.

Reference has already been made in this chapter to Bin Tepé (Turkish for *A Thousand Mounds*), the vast nekropolis of the early Lydians lying across the Hermos, six or seven miles as the crow flies, to the north and northwest of Sardis. The mention of these tumuli by HERODOTUS<sup>2</sup> and STRABO,<sup>3</sup> and the naming of one of them as the tomb of CROESUS' father ALYATTES, has for ages made them objects of interest to travellers, and of speculation among scholars. They were until recently the only known remains of Lydian achievement, and the only Lydian monuments of importance mentioned in our histories of art.<sup>4</sup> Though always plainly visible from the high road that runs through Sardis, and of late the most conspicuous features of the landscape in view for miles from the railway, they have been more or less inaccessible. Yet they have been visited by some of the more recent of the early explorers, and, over

<sup>1</sup> *Revue de l'Art ancien et moderne*, 1905 (juillet—décembre), t. XVIII, pp. 29—41, 127—135.

<sup>2</sup> I, 93.

<sup>3</sup> XIII, 4, 7.

<sup>4</sup> Cf. G. PERROT and CH. CHIZEZ. *Histoire de l'Art*. Paris. 1890. Tome V, pp. 265—285.

seventy years ago, the reputed tomb of ALYATTES was examined by H. SPIEGELTHAL,<sup>1</sup> who was for many years the Prussian Consul-General at Smyrna. These investigations were disappointing, and probably far from thorough or scientific; yet one must take into account the enormous difficulties encountered in such a piece of work as the opening of one of these tumuli, and give SPIEGELTHAL full credit for what he accomplished. The excavation of these tumuli, in the light of the experience of our expedition, will be discussed later in these publications. More recently M. CHOISY visited Bin Tepé, and published the results of his brief exploration.<sup>2</sup> During the seventies and early eighties, DENNIS opened a number of the smaller tumuli, and since then, if one may judge by appearances and by local report, the native population has undertaken the opening of some of these tombs on its own account; but, except for two sculptured slabs, one or two small pots, a few potsherds which DENNIS sent to the British Museum,<sup>3</sup> and some drawings of others from the tomb of ALYATTES, we are in possession of no objects whatever from this great nekropolis.

Bin Tepé is a narrow limestone ridge lying approximately east and west, and between two and three miles long, rising north of and parallel to the river Hermos, from which it is separated by a broad stretch of rich and level bottom land, and falling abruptly on the north to the shores of the lake, called Merméré Giöl by the Turks, long since identified with the Lake of Coloë and the Gygaean Lake of classical writers. The crest of the ridge and its gently sloping sides are dotted with tumuli, large and small, from a point opposite Ahmedli, the railway station west of Sardis, to a point about opposite Sardis itself. There are many of these tumuli, not a thousand, as the fanciful Turkish name would imply (any more than there are a thousand and one churches at Bin-bir-Klissé), but I have counted seventy-two from the top of the Akropolis of Sardis, and assume that there are all told upwards of an hundred. Near the east end of the ridge is the colossal mound called the tomb of ALYATTES, and near the opposite end another mound, almost as large as the first, which some travellers have assigned to GYGES, the great-grandfather of CROESUS.<sup>4</sup> The other tumuli vary in size from small mounds, twenty or thirty metres in diameter, to huge constructions which almost rival the two bearing the names of the two great kings. SPIEGELTHAL's excavations demonstrated that the "Tomb of ALYATTES" is supplied with a well built retaining-wall, capped with a stone cornice, not unlike that of the "TANTALOS Tomb" above Smyrna. No sign of the wall is visible to-day; for the earth has been washed down from the mound and buried again the part of it excavated by SPIEGELTHAL. On the top we may still see a huge spherical piece of limestone attached to a heavy rectangular base,<sup>5</sup> and fragments of other, probably similar, stones. These are without doubt the remains of the colossal phallic device which, according to HERODOTUS, crowned the apex of the mound. SPIEGELTHAL's examination of the interior was effected by driving a low narrow tunnel, apparently following the course of some

<sup>1</sup> *Monatsblatt der K. P. Akademie der Wissenschaften zu Berlin*, 1854, pp. 700—702; also *Abhandlungen* of same Academy 1858, pp. 539—556.

<sup>2</sup> *Revue Archéologique*. XXXII, 1876, p. 73.

<sup>3</sup> Cf. PERROT—CHIZEZ, Tome V, p. 903 Note 3 and p. 905.

<sup>4</sup> Cf. LEIGH ALEXANDER, *The Kings of Lydia*, Doctor's Dissertation, Princeton University, 1913.

<sup>5</sup> On this stone see *J.H.S.* XX, 1890, pp. 69 f.

Sardis Expedition I.

early tomb-robbers' cutting, in tortuous curves for a long distance into the solid mass of the tumulus, and finally, by accident it would seem, coming upon a small chamber built of marble which was evidently entered by hacking through the roof made of marble slabs. A marble couch occupied one side of the chamber, as is shown in SPIEGELTHAL's illustrations, otherwise the chamber was empty; it had probably been entered in Roman times. SPIEGELTHAL's investigations are not convincing to my mind. He found a chamber; but there is no proof that there were not others, and no proof that the one he discovered was the principal one. It is not clear whether he followed older burrowings all the way or not; but he was convinced that he had been anticipated by earlier searchers, perhaps in Roman days.

DENNIS devoted himself to the opening of some of the smaller tombs. For lack of any published accounts of his results, and in addition to CHOISY's description,<sup>1</sup> I shall again fall back upon the BACON letter,<sup>2</sup> which, after describing the excavator's camp, continues: "The tombs that Mr. DENNIS had been working on were close by. He had opened two, and was at work on a third. They appear to have been constructed by building first, on the plain, a chamber of large dressed stones, inside of which the body was placed on a stone couch. The entrance was sealed with a slab, and then a mound of earth was heaped over the chamber, large or small, I suppose, according to the wealth and rank of the occupant. The chamber was not left in the centre, but off to one side, for purposes of concealment, which fact has caused much vexation to modern explorers. In the second mound excavated by Mr. DENNIS, he completely honeycombed the hill with shafts and tunnels only to find at last the chamber, on one side, but a foot or so from the surface. In construction these two chambers were very similar. The one I examined (which was the smaller of the two) was rectangular in plan and had a small low doorway, about four feet high. Once inside the chamber, there was room to stand erect. The floor was paved with closely fitted slabs, and the roof was also of close-laid stone beams. The stone is beautifully adapted to cutting, and is in colour almost as white as milk, and of extremely fine texture . . . . The couch in this chamber was against the rear wall, opposite the door. The couch consisted of a heavy slab supported on two upright blocks, all very carefully fitted together. Mr. DENNIS found on these couches remains of skeletons, and a few pots and glass vessels placed around the floor. Mr. DENNIS said there was no doubt but that these tombs had been opened either in Roman times or later, and that each was probably a case of reappropriation. He was on the whole much disappointed with his excavations at the tombs. There are about one hundred and thirty mounds in all, and he thinks they have every one been opened".

Several opened tombs at Bin Tepé have been visited by members of the American expedition. Some of them are probably those seen by CHOISY, and those excavated by DENNIS; others do not accurately correspond to the descriptions given by either of these explorers, but others still have been partly filled up again by natural causes and are not accessible. One of these, perhaps more than one, presents a feature mentioned by CHOISY, but not in the BACON letter. This is a walled and roofed

<sup>1</sup> *R.A.* XXXII, 1876, p. 73.

<sup>2</sup> Cf. p. 7.



*dromos* which leads up to the doorway. One of these is shown in the photograph (Ill. 3) taken by Mr. SHEAR of our expedition and presented herewith. The character of the masonry of the side walls, of the roof and the doorway, is well illustrated in



Ill. 3. Dromos and Chamber of a Tumulus at Bin Tepé.

this picture. The material is limestone. The stones are laid in regular courses and on level beds. The joints are very true and well made. The wall surface is smooth but not highly finished. The ridges intentionally left on either side of a joint, and plainly to be seen on the left of the picture, are characteristics of early masonry that has been found in Sardis itself. The door, a single thick block, was provided with flanges and was perfectly fitted to the opening of the doorway. The *dromos* was a feature of the tombs with several couches which were cut into the hillsides across the Paktolos, opposite to the city. It was perhaps filled up with earth, and unearthed for each new burial. In the tumuli in which the *dromos* occurs it would seem probable that more than one burial was planned and that the same method of opening and closing the tomb was practised.

A member of our Expedition saw at least one opened tumulus in which there were several tomb chambers connecting with a single central chamber which was reached by a *dromos*. No effort was made by the excavators of the smaller tumuli to discover if they were provided with retaining walls like that which SPIEGELTHAL found at the tomb of ALYATTES.

#### 5. LYDIAN OBJECTS ALREADY KNOWN.

In spite of all that has been written during the past twenty years on the importance of Lydian archaeology, there are very few Lydian material documents of any

kind available to scholars who might wish to pursue the study. SAYCE, RADET, RAMSAY and HOGARTH have based their interest in Lydia upon the assumption that there must be significant objects to be found there, rather than upon any known articles of Lydian production. Even of written documents to illustrate the script which we know was carved upon the Lydian royal tombs, and to represent the tongue which we know was the common speech of a large population until the time of ALEXANDER THE GREAT and perhaps later, only a scant half dozen of poor fragments,<sup>1</sup> consisting of a few letters, were known before 1910. Few, if any, of these had been certainly identified as Lydian, and the provenience of others was unknown. KEIL and VON PREMERSTEIN<sup>2</sup> had begun a great collection of inscriptions in Greek and Latin from all parts of Lydia, and had published three fragmentary inscriptions, not from Sardis, which were believed to be in Lydian script. A considerable number of Greek and Latin inscriptions from the walls of the Akropolis of Sardis, and from the ruins of the Roman city, were indeed known, but could not be considered as Lydian documents. Nor could the great quantities of coins struck in Sardis, and in other towns of Lydia, under Greek and Roman rule be regarded either as Lydian historical documents or as Lydian works of art. Numismatists have long known, however, a certain number of coin types of pre-Persian times in electrum, gold and silver, one with Lydian letters upon it,<sup>3</sup> and these have been thus far our only certain specimens of Lydian products in metal. This is perhaps the more interesting if we recall that HERODOTUS believed the Lydians to have been the inventors of coined money in precious metals. But what of the other forms of gold work for which the Lydians were the envy of the Greek world? Only two groups of trinkets in western museums even lay claim to Lydian origin; one of these is so crude as to be of small importance, and in any case is of doubtful provenience, while the other, found at Tralles, and now in the Louvre, may not be Lydian at all. In 1909 RADET published a portion of a tile supposed to have come from Sardis.<sup>6</sup>

Before the year 1910 there was not known a single fragment of the architecture nor a single example of the handicraft of the nation whose latest king contributed largely to the actual building of one of the most famous of Greek temples, and presented costly works of art to the oracle at Delphi. In fact, with the exception of the two reliefs<sup>4</sup> found by DENNIS, and a little pottery,<sup>5</sup> there was not a single well authenticated remnant of the art of a people whom the Greeks of Asia Minor did not hesitate to own as their teachers in many of the refinements and luxuries of life. It is a curious circumstance that practically no Lydian products, large or small, fragmentary or complete, have reached the museums of Europe, or the well-known private collections, from the excavations of SPIEGELTHAL, or from those of the natives who for generations have kept up illicit digging in the tombs of Bin Tepé. Possibly certain

<sup>1</sup> Cf. *Sardis*, Vol. VI, part I (1916), p. ix, nos. A to F. And add the following references: as to A, *Trans. S. B. Arch.* VII, 1882, p. 279; as to D, *Proc. S. B. Arch.* XXVII, 1905, p. 123 f.

<sup>2</sup> *Denkschr. Wiener Akad.* LIII, 1908, II; LIV, 1911, II; and LVII, 1914, I.

<sup>3</sup> The few coins attributed to ALYATTES and SADYATTES are discussed by J. P. SIX in *Numism. Chron.* 3d Ser. X. 1890, pp. 202, 215.

<sup>4</sup> Described by PERROT and CHIEPIEZ, *Histoire de l'Art*. Tome V, 1890, p. 903, note 3, fig. 535.

<sup>5</sup> See the lists in *Class. Rev.* 1888, p. 327; 1889, p. 423.

<sup>6</sup> See below, p. 78.

objects of unknown provenience in the museums may eventually be shown to be Lydian by comparison with objects that are to be published as the result of the American excavations. Both the consular archaeologists named above expressed themselves as greatly disappointed in the results of their digging; but one wonders whether their disappointment was not caused chiefly by their failure to discover rich treasures, and whether they may not have found other things, of equal or greater importance to archaeology, and may still have reported the tombs as empty. Generally speaking, the ancient plunderers of tombs took away only the objects in precious metals, leaving or breaking the pottery, the clay figures, and other things without intrinsic value. If the consuls discovered such leavings of the earlier tomb-breakers, the question arises, what did they do with them? Young BACON in the letter to his teacher, writes very frankly, and somewhat naively, of his conversations with SPIEGELTHAL in Smyrna, and with DENNIS. Of the former he writes: "SPIEGELTHAL is a most interesting character. He is a wealthy German Jew, has lived in Smyrna for the last forty years or more, and during that time has interested himself in archaeology, prompted more by a desire for certain renown . . . . than by any real love or knowledge of ancient things"; then, after relating a conversation with the consul, in which the latter had told how his wife objected to his filling the house with antiques, he continues, "so he had been compelled to ship them off to different European Museums, in return for which he had been made member of many learned societies." The letter makes it quite clear that the British consul sent his finds to England. In testimony of this we find the colossal head from Sardis in the British Museum, where there are also a small collection of potsherds, and some mottled vases which HOGARTH likens to the mottled Vasiliki ware of Minoan Crete.

The natives' reports of their own digging are varied. They say that they sometimes find the gold which they are looking for, and that they send this to Smyrna, in other cases they find no gold; but, gold or no gold, they always find pots; these are often broken, and, if not found in a broken state, they are broken intentionally or unintentionally, sooner or later, for they are of no use anyhow. Little dependence is to be placed upon these statements; but when the stories of many natives agree in certain particulars we have a basis for belief. In any event Asia Minor pours a continuous stream of antiquities into Smyrna, where they are promptly picked up by the dealers and sold to tourists, or are shipped to the museums and big collectors of Europe. As director of the excavations in Sardis, it has become a part of my duty, in addition to the elaborate precautions taken to prevent theft on the spot, to keep close and secret watch upon this outlet, for the purpose of protecting our own excavations. In the first place I have been pleased to learn, on the testimony of a collector who has spent his life in Smyrna and whose word is unimpeachable, that the stream of antiquities coming into Smyrna has not been noticeably swollen during the five years of our excavations at Sardis; and in the second, I have been astonished to find how insignificant a number of the small objects which come to Smyrna from the interior have any resemblance to those which we are finding in our excavations. Yet we have taught hundreds of natives more than they had ever known before about excavating, and one would not be astonished to find that they had put their



new learning into practice during our absence, and at places outside of our immediate supervision. It may very well be that the scarcity of Lydian objects in the market of Smyrna and in the European collections is to be explained by the very great depth at which these objects are buried, to the enormous difficulties of digging them out, and to the many disappointments which follow days and days of labour, difficulties and disappointments which the authorized excavator knows only too well.

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Ill. 4. Akropolis of Sardis. View from the North.

## CHAPTER II.

### THE SITE.

#### 1. GENERAL DESCRIPTION.

To establish the position of Sardis upon the ancient map of Asia Minor one may mention a galaxy of names familiar to every student of the literature of Greece and Rome: Tmolos, the mountain where Dionysos was born, Paktolos, the gold-bearing stream of the poets' dreams, and Hermos, the mighty river which divided Ionia from Aeolis. But, for our present purposes, a more prosaic description is perhaps desirable. If one travels eastward from the Bay of Smyrna upon the *Smyrne, Cassaba et Prolongement* railway, about 150 kilometers into the interior, he will have upon his left, throughout the greater part of the journey, a broad, swiftly flowing river of yellow hue, which runs westward into the bay of Smyrna; this is the ancient Hermos which very nearly bisects the western part of Asia Minor. During the latter part of the journey, after passing through Manissa (Magnesia ad Sipylum), the railway follows a course along the southern edge of a broad plain, and high mountains rise almost directly on the right. The plain is the great Plain of Lydia. The ancient "Royal Road" lay not far from the line of the railway throughout this part of the journey. A little before reaching his destination the traveller will notice to the left a long low ridge rising out of the plain on the far side of the river; the ridge is dotted with symmetrical conical mounds large and small: this is Bin Tepé, the place of a Thousand Mounds, the cemetery of the ancient Lydian kings, described by HERODOTUS. Far beyond the ridge, on the other side of the plain, rise the rugged mountains of Mysia.

Just before reaching the little station of Sart the railway crosses a stream, sometimes a thin ripple in a broad gravel-belt, sometimes a rushing torrent, according to the season. This is the far famed Paktolos in the sands of which gold has actually been found.<sup>1</sup> Alighting on the south side of the railway, the traveller passes between some poor houses under plane trees and faces south. The whole panorama of ancient Sardis rises before him. In the immediate foreground spread wide and fertile fields and vineyards, in the far distance tower the blunt peaks of the Bôz Dagħ, Mount Tmolos of the Greeks, their summits clad in snow during the greater part of the year; to the right the valley of the Paktolos issuing out of the mountain barrier above. In the middle distance, about a mile away, two craggy peaks stand out in bold relief against the dark background of the lower foothills of Tmolos, one on either side of the Paktolos. That to the right, the higher of the two, is like a pinnacled tower in its almost architectural modelling, and its colour is a deep clay red changing to purple as the day advances; that to the left is even sharper at its crest, but the side now exposed to our view shows less of red precipitous cliffs and more of green slopes (Ill. 4). A fragment of a stout wall is balanced upon a pinnacle just below its crest, and similar bits of man's handiwork cling to its sloping sides. This is the Akropolis of Sardis. At its foot are the ruins of mighty buildings, massive but not beautiful; for their material is crude masonry stripped of its marble facing. One structure is evidently a theatre (Ill. 4, at left), another we are told is a stadium; smoke is seen rising from a third, which we learn was a gymnasium; it now contains a small village. All these structures, and others less well preserved, were parts of the Roman city. Nearer to us, extending well out into the more level ground, are other large buildings sadly ruined, and tall fragments of broken walls of crude construction (Ill. 4, at right). These represent the city of Byzantine times. Fields of barley and wheat surround them and fig-trees grow in their ruins. We keep to the path which follows the river, and go through a small village perched on high ground above the stream. Presently we pass under the shadow of a shoulder of the Akropolis, then we cross a deep ravine. Another village comes into view directly before us; beyond, and rising high above it, stand two white marble columns. We have reached the shrine of Artemis.

We are now directly between the two craggy peaks and well up in the valley. In front of us to the south it narrows suddenly, and the river disappears in a ravine. The two columns spring out of a barley field, (Ill. 5).<sup>2</sup> One column is very white, the other has a black stain like the mark of fire, but the column has not been burned. The field slopes gradually and smoothly westward from a point high above the columns at the base of the Akropolis to the river's edge, where it is cut sharply off in a steep bank (Ill. 6). On the south the field is bounded by a small ravine, beyond which rises a low hill. A primitive looking village of mud houses nestles against the hillside. There are thatched houses too, and houses made of wattles and matting; there is also a black goats'-hair tent. North of the field is another small

<sup>1</sup> From time to time, in the process of digging pits in the bed of the Paktolos, we have accidentally found small bits of gold, the accumulated weight of which would be at least an ounce.

<sup>2</sup> I prefer to describe the site as it was before the hand of man destroyed the work of nature.



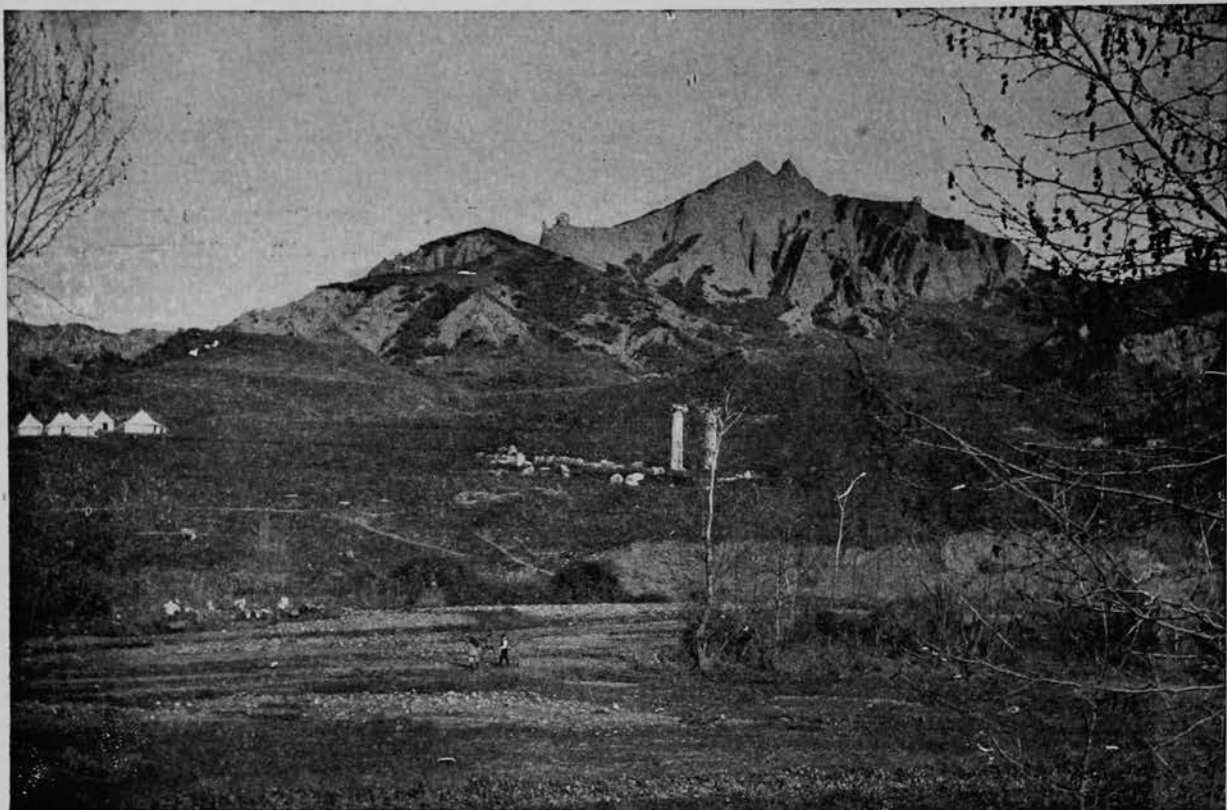
ravine that comes down beside the shoulder of the Akropolis. The two ravines approach each other as they ascend. The sloping field is thus trapezoidal in shape. To the west, across the river, the taller of the two red craggy peaks towers even more precipitously than when seen from down the stream; a sheer shaft with pinnacles about it (Ill. 7). Its foot is banked all around with low fantastically shaped hills, more or less conical. These, we are to learn later, are honey-combed with tombs. This was the principal cemetery of the city: we call the peak the Nekropolis Hill. To the south of it a precipitous shoulder, like a palisade, falls by slow degrees toward the mountains at the foot of which it is cut off by a bend in the stream.

When we turn to the east (Ill. 6), the Akropolis hill has completely changed its appearance. The green slope has been exchanged for a sheer cliff that descends from the topmost peak. The cliff is red; I have heard it called the "Hill of Blood". Around on the left the same fragment of wall, first seen from the other side, seems even more perilously balanced. At the right, still higher up, the end of another wall yet more massive projecting over the edge of the precipice extends back almost two hundred metres, though the rear part is invisible from below. If it has not been evident before, it is plain to the beholder now, that the substance of these two red crags is not rock but clay, and that erosion by rain and wind has wrought in it the fantastic pinnacles and the tower-like structures that make them so unlike other hills. At the same time their past history becomes clear. The bulky mass of the Akropolis, now worn to a knife's edge at its top (Ill. 6A), is no longer the Akropolis that held aloft a mighty fortress two hundred metres above the lower city.<sup>1</sup> One does not need to be told of the great earthquake in A. D. 17 to understand just what has happened. The fresh marks of new landslips tell the tale. This great hill, chosen ages ago as an ideal place for a stronghold, had a flat space at the top, sheer sides, and a narrow approach on the side toward the mountains. We know that a strong citadel, filled by a large garrison, occupied the summit, and that two complete sets of walls girdled the

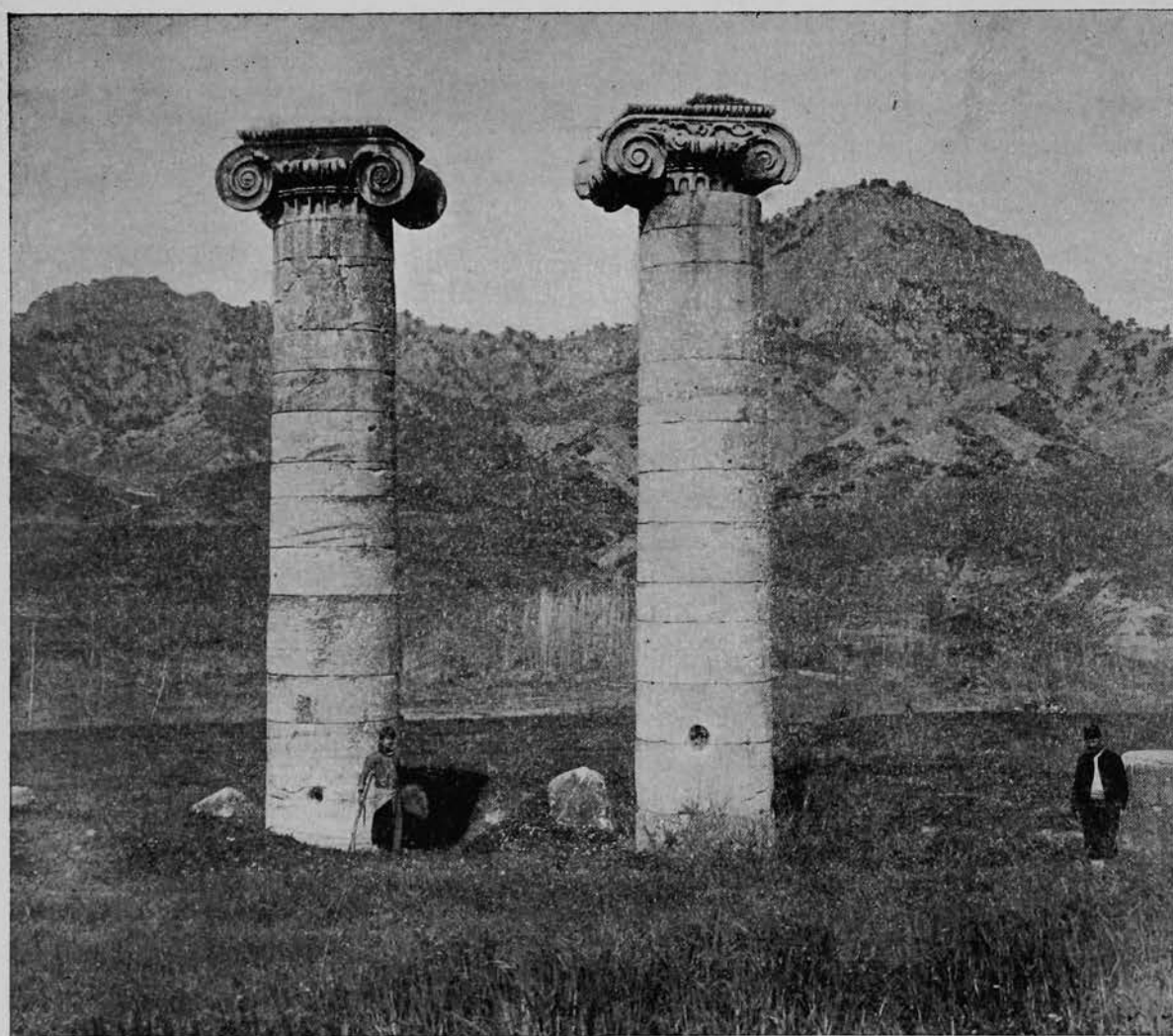


Ill. 5. The Twin Columns of Sardis, View from the North.

<sup>1</sup> Professor D. M. ROBINSON has called my attention to POLYBIUS' account (VII. 15) of the capture in 216 B.C. of the Akropolis of Sardis, mentioning "a place called the Saw (Πρῶν) which unites the citadel and the city." This name can hardly refer to the crest of the hill as it appears today, but probably described similar crags which flanked the summit before it was reduced by more erosion to its present narrow proportions.

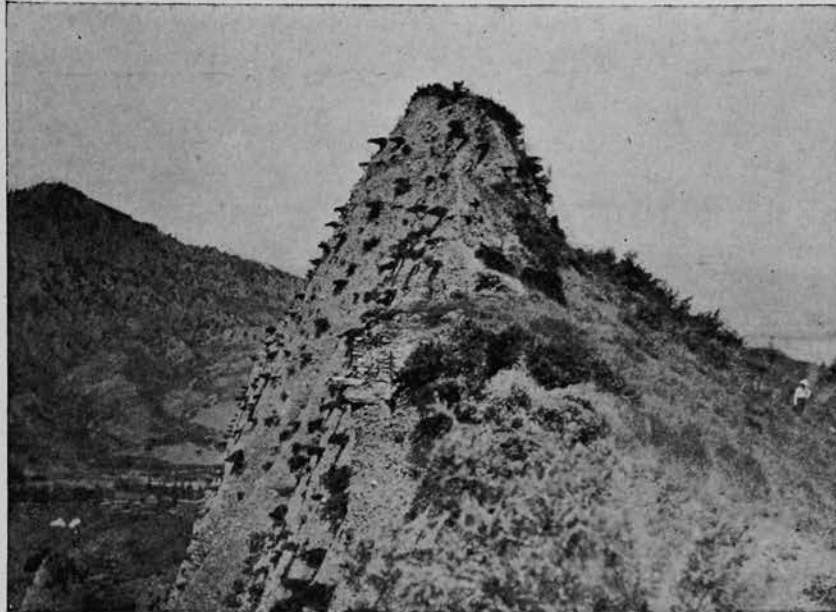


Ill. 6. The Akropolis of Sardis, the ruined Temple and the Bed of the Paktolos. View from the West.



Ill. 7. The Nekropolis Hill with the Twin Columns in the Foreground.

crest of the hill. Some writers have even placed temples and other buildings in this upper city. But clay cannot resist erosion indefinitely. By degrees, now rapid now slow, the hill has worn away. Earthquakes have shaken down huge pieces of its structure, frost and rain have caused repeated smaller landslips, until the whole of



III. 6A. The Peak of the Akropolis. Photograph by D. M. ROBINSON.

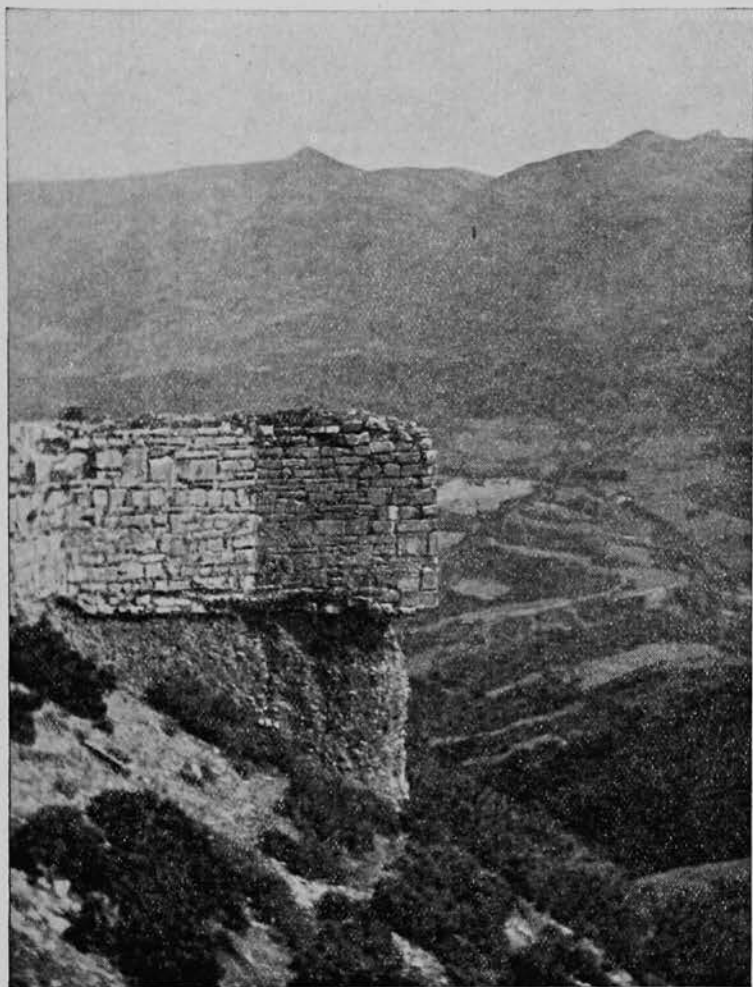
the flat top of the hill has disappeared, leaving the knife-blade peak with its fragments of balancing wall. The landslides, falling year after year, have buried the lower city, creating at the foot of the hill deep deposits which slope away to the river and the plain. The great trapezoidal field, from the foot of which the two marble columns emerge, is only a mass of disintegrated Akropolis.

Let us ascend the Akropolis for a moment, more thoroughly to get our bearings. The view is uninterrupted over great distances in all directions, except toward the south where rises the mighty wall of the Bôz Dagħ, with the snow-clad peak of Mount Tmolos a little toward the southeast. The higher masses of the mountains, and the more lofty foothills, are for the most part (Ill. 8) gently rounded and smooth, and are well clothed with brown grass and low scrub, but are gashed here and there by ravines which make high precipices casting deep shadows into the rifts in the mountain-side. Through one of these ravines, almost due south of the Akropolis, rushes one of the principal tributaries of the Paktolos, leaping over cataract after cataract, to join the main stream in the bed of the valley. High up in this ravine, and about two miles from the Akropolis, is a large marble quarry, the principal one no doubt employed by the ancient Sardians. High steep walls of marble form the precipitous sides of the ravine, the stream has carved out smooth marble pools below each water-fall, and there is a spot below the quarry where the water leaps over a ledge



of white marble in a cataract over twentyfive metres high (Ill. 9). Indeed the entire structure of these higher hills seems to be of marble.<sup>1</sup>

The westward outlook from the Akropolis is broken for a narrow space by the slender shaft, higher than the Akropolis, of the Nekropolis hill on the other side of



Ill. 8. The Foothills of Mount Tmolos and the Valley of the Dabbagh Tchai.  
View from the Akropolis, looking Southeast.

the Paktolos. Toward the east extends a range of lower hills similar in structure and in colour to the Akropolis and Nekropolis hills, and from the railway carriage one will have observed a long westward extension of this red clay range continuous with the peaks at Sardis. This range, throughout its length, lies at the foot of the smoothly rounded rock-made mountains of the Bôz Dag, and has every-where been eroded into the fantastic architectural shapes which characterize the peaks on either side of the Paktolos.<sup>2</sup> The views toward the north, northwest and northeast are the most extensive. One realizes the vast resources of ancient Lydia in the great expanse of the Hermos plain, and understands the importance of the position of Sardis, as he gazes out over the miles

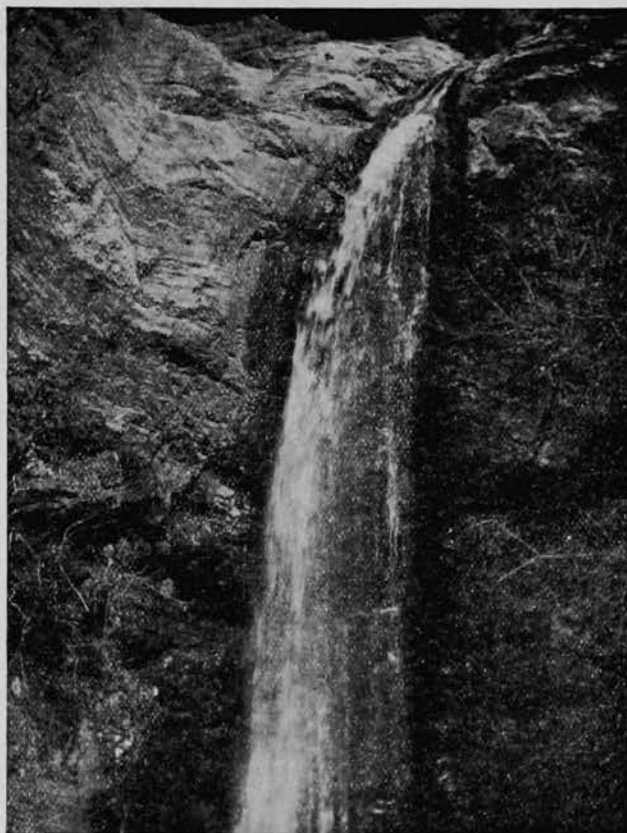
of fertile fields. At the eastern foot of the Akropolis flows a second stream (Ill. 10), larger than the Paktolos, issuing out of another ravine in the slopes directly below Tmolos. This river is the Dabbagh Tchai (the *River of the Tanneries*) which can be traced far back into the hills almost to Oedemish. Still looking eastward, we observe almost at our feet, just across the Dabbagh Tchai, a strange looking white patch on the hill-side (Ill. 8). At times a faint column of vapour is seen rising from it, and curious little white houses stand on the slopes around, half hidden by trees. Here is Tchamur Hammâm, where hot springs bubble out of the earth, and have produced layers of lime and sulphur and other deposits. The hot water has been led into crude bathing-vats covered with primitive houses, and has very efficacious

<sup>1</sup>) See Appendix I.

<sup>2</sup> See Appendix I.

medicinal properties. Turks of the middle class, and peasants, from far and near, gather at these baths in mid-summer, and the little white houses have been built for their accommodation. There are remains of ancient walls in the vicinity, and I have no doubt that these springs were resorted to by the ancients, perhaps even by CROESUS himself. The snow-fed streams, like Paktolos and the Dabbagh Tchai, and many others flowing out into the Hermos, have always watered and enriched the Lydian plain. Irrigation rendered their office more effective, and could again be restored to increase the wealth of this wide arable area. Far across the Hermos the long plateau, with the mounds of Bin Tepé, stands out like a relief map. Beyond it shines the broad sheet of the Gygaean Lake hemmed in by high mountains toward the north.

Looking straight down from the Akropolis upon the ruins of Sardis one wonders just how far the city extended in the days of its greatest power and opulence. The present line of the late circuit walls is far too restricted to have enclosed the great city of the Greek historians; for ruins crop out on all sides far beyond the area enclosed by them. The valley of the Dabbagh Tchai (Ill. 11) is too narrow and confined to have contained part of the city proper; but I believe that the Roman city began at the west bank of this stream, after it cuts its way beside the N. E. foot of the Akropolis and issues into the plain. How far this city extended into the plain we may never know precisely; but it is clear that it covered the northern foot of the Akropolis, crossed the Paktolos, and extended well up the wider valley on both sides of the stream, at least as far as the temple. EURIPIDES<sup>1</sup> describes the earlier city as encircled by Mount Tmolos, which would suggest that the original site was entirely within the space between the Akropolis and Nekropolis Hills, extending well up the valley and its slopes (See Pl. I and Ill. 12).



Ill. 9. The Great Waterfall and the Marble Cliffs.

## 2. ANCIENT REMAINS.

THE AKROPOLIS WALLS: A glance at close range at the fragments of wall that are still to be seen upon the Akropolis will convince one that they have no relation

<sup>1</sup> *Bacchai*, ll. 462—3.

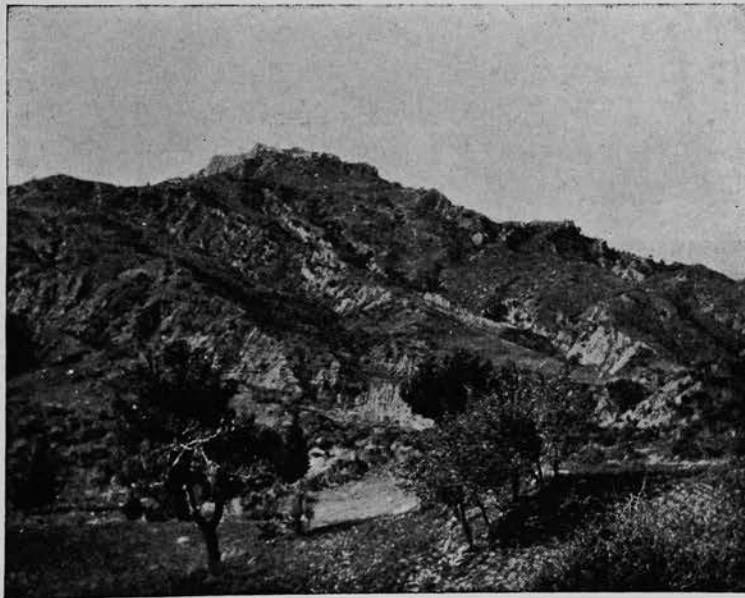


whatever, either in position or in construction, to the stronghold of Lydian, Persian, Greek, or Roman, Sardis. From foundations to top, they are composed of architectural



Ill. 10. The Dabbagh Tchai below the Hot Baths.

fragments of the last two of these periods, and even Byzantine details are not wanting

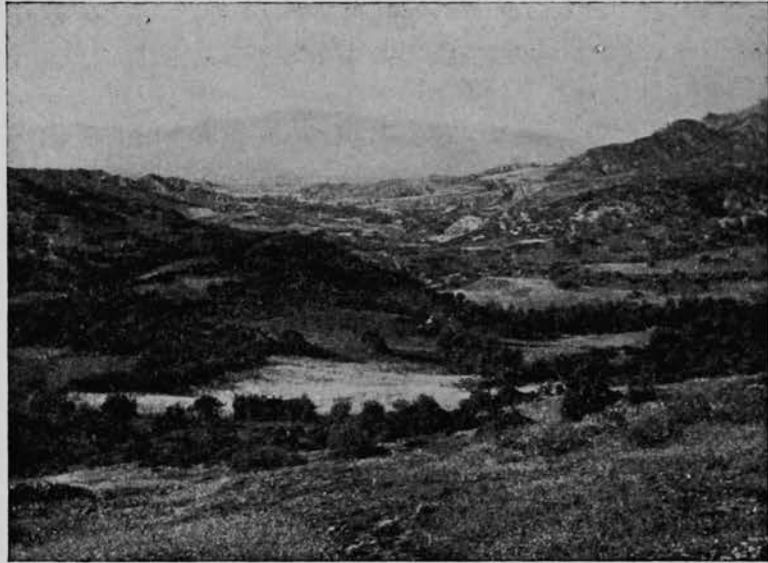


Ill. 11. Valley of the Dabbagh Tchai, View looking Northwest toward the Akropolis of Sardis.

in the mixture. Furthermore they stand upon the very edge of the last remnant of the crest of the hill, and in many places the earth under them has weathered away so that their foundations overhang the perpendicular surface of the cliff by two or three metres, threatening imminent collapse (Ill. 8). Only the smallest sections of the extant portions of these walls are visible from below on the north or west. In order to examine them one must climb the shoulder of the hill that reaches out to the south, and

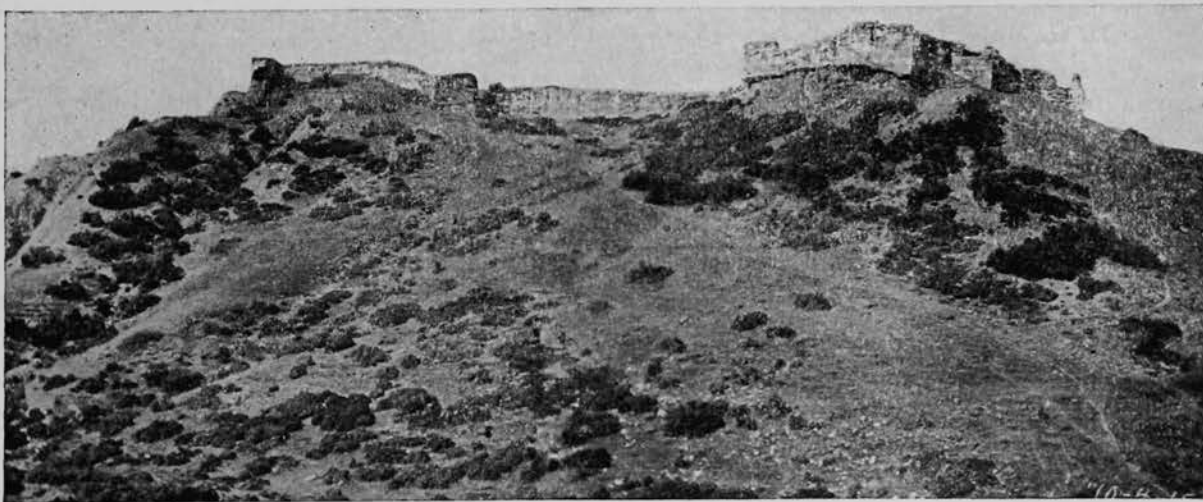
falls in a series of uneven and deeply eroded ridges toward the mountains. Here,

on the south side of the crest, where the shoulder joins the Akropolis, the hill has suffered less from erosion than it has on the more precipitous sides (Ill. 13), and here is preserved a continuous section of wall, some two hundred metres long, shown in one of PEYSSONEL's drawings (Ill. 1). It terminates toward the west at the edge of a precipice marking the spot from which one of the largest bits of the hill was torn. It extends eastward about 100 m., with one redoubt, and only one small break where the entrance is, to a blunt angle where it turns toward the southeast for 30 m. to join a square redoubt (Ill. 8) which overhangs a precipice about 12 m. high. This redoubt is the angle-tower of a castle-like structure



Ill. 12. The Valley of the Paktolos. View from above Sardis looking North.

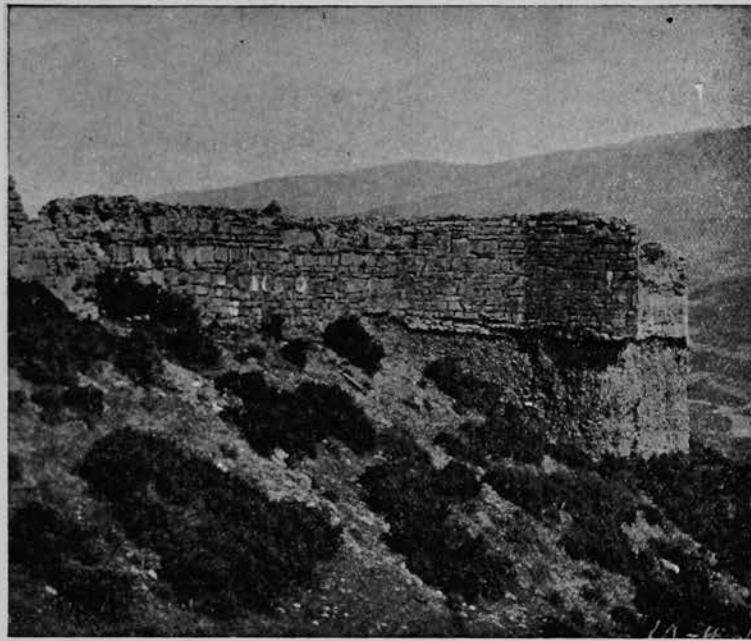
perched upon a sharp spur of the Akropolis at its extreme southeastern corner. Its walls extend eastward from the angle-tower, and then turn to the northeast where they have been abruptly cut off by a landslip. The southern and eastern parts of



Ill. 13. Walls on South side of Akropolis. View from the South.

this castle-like structure have double walls with vaulted passages between, and embrasures opening outward. The inner walls and the vaults are of brickwork, but outwardly this entire long stretch of Akropolis wall is of marble. Probably not a single block in the whole mass was quarried to serve its present purpose. Many of them came from

the regular ashlar of walls of temples and other public buildings; but a large proportion of the material is made up of heterogeneous architectural details, roughly set in crude mortar. There are many shafts of columns of small scale in coloured marble, which often appear in a row, side by side, as foundations. There are drums of columns of larger scale in white and in coloured marbles; there are bases and capitals, fragments of architrave and of cornice, and countless bits of carving of unknown purpose (Ill. 14). One observes beautiful specimens of Greek egg-and-dart, Roman *rinceaux*, and coarse mouldings of late Byzantine style, all mixed together in hopeless



Ill. 14. Part of Akropolis Wall, showing second-hand Materials.

confusion. The cross appears on a number of fragments. Scattered among the carved architectural details are seen many inscriptions, a few Latin, but mostly Greek, belonging to many different centuries, from the time of the High Empire to the end of the Empire of the East. Some of these inscriptions have been copied and published, many of them very unsatisfactorily owing to their inaccessibility; others could not be accurately copied unless some copyist were to be let down from the top of the wall, others again are inscribed on faces of stones embedded in the masonry so that only a line or two could be seen, and there are, in all probability, hundreds of others completely hidden from view. It is almost certain that comparatively little of this vast amount of second-hand material was found upon the Akropolis by the builders of the wall, and that a large proportion of it must have been transported with great labour from the lower city. In the greater land-slides which gradually brought about the complete destruction of the Akropolis, when the ancient walls and such buildings as there were on the summit fell crashing directly down through seventy metres or more of space, the masses of disintegrating natural material were so overwhelmingly greater in proportion than the mass of stonework wrought by man, that the latter seems to have disappeared almost entirely. One may believe that most of it lies buried and widely dispersed through thousands of cubic metres of débris which form the present slopes of the hill, much of it lying many metres below the surface. It does not seem probable that any considerable amount of this material will ever be brought to light.

While discussing the disintegration of the Akropolis hill it may be worth while to digress for a moment upon one of the possible causes for the annihilation of the upper city. In the sharp peak which still remains as the sole remnant of a once



mighty hill (Ill. 6 A), one may see two large cavities dug out by the hand of man and lined with cement to serve as cisterns. There were perhaps many of these, excavated in the huge bulk of the hill, indeed it may well have been honeycombed with them. If by any chance the cement lining of the cisterns became cracked so that water could filter down through the clay, making rifts in the structure of the hill, it is not difficult to understand how a single severe earthquake might have caused the destruction of the entire Akropolis. The small fragment of wall at the opposite end of the Akropolis (Ill. 6) seems to have belonged to the lower ring of walls. Brick was used with stone in its construction, and there are a few large blocks of marble. Erosion has almost severed this bit of wall from the rest of the Akropolis (Ill. 15).

THE COLUMNS: The twin columns which, rising out of a sloping field beside the Paktolos, have long marked the site of the more ancient city of Sardis, are of the Ionic order with unfluted, and consequently unfinished, shafts. A hundred years ago and more there were other columns standing near by, forming a group. As early as 1671 THOMAS SMITH found six columns in place.<sup>1</sup> In 1699 CHISHULL<sup>2</sup> also saw six complete columns, one with its capital displaced, probably just as we see it to-day, and the eastern doorway of the temple in situ, with its lintel still in place, "a vast stone which occasioned wonder by what art or power it could be raised". Fifty years later PEYSSONEL made his sketch which shows five columns, three with their architraves above them, and two detached, and also a part of the cella wall. Soon after 1764 CHANDLER<sup>3</sup> wrote. "Five columns are standing, one without the capital; and one with the capital

awry to the south. The architrave was of two stones. A piece remains on one column but moved southward; the other part, with the column which contributed to its support, has fallen since the year 1699". Then, after referring to CHISHULL's description of the great lintel of the doorway, he continues, "That fair and magnificent portal . . . has since been destroyed; but in the heap lies that most huge and ponderous marble. Part of one of the antae is seen about four feet high. The soil has accumulated round the ruin; and the bases, with a moiety of each column, are concealed;



Ill. 15. Fragment of Wall at Northwest End of the Akropolis.

except one which was cleared by Mr. Wood. The number in the front, when entire, was eight. The order is Ionic. The shafts are fluted, and the capitals designed and carved with exquisite taste and skill. It is impossible to behold without deep regret this important remnant of so beautiful and glorious an edifice; which however is, I believe, unnoticed by the antient authors now extant". CHANDLER makes a singular mistake here in stating that the shafts of the columns are fluted; for all the columns

<sup>1</sup> Cf. p. 4.  
Sardis Expedition I.

<sup>2</sup> Cf. p. 4.

<sup>3</sup> Cf. p. 5.



of the front row, including the two now standing, are unfluted. There are however two columns, the middle pair in the second row, which were fluted; but these were not standing in his day, though he may have seen their fluted drums which still lay about in 1910. The mention of WOOD refers of course to his work here before 1750.<sup>1</sup> The temple appears to have suffered considerable damage during the next half century; for COCKERELL, in 1812, found only "three columns standing"<sup>2</sup> with their capitals; but enough remained of its ruins to satisfy him that it was "of the kind called by VITRUVIUS Octastylus Dipterus — that the exterior columns of the peristyle were about 7 feet in diameter at the base, and that the peristyle was upwards of 260 feet in length".<sup>3</sup> According to this statement only one column has fallen during the past century.

In 1910, when the American excavations were begun, there was no remnant of



Ill. 16. The Columns with Snow-capped Tmolos in the Distance.  
View from the Northwest.

an architrave on either of the columns. The capital of the northernmost one was awry, moved slightly to the southward (Ill. 16). No part of the portal or any bit of cella wall was visible. To the south of the columns was a pit dug by MENDEL on one side of the stump of a column, the top of which had been exactly level with the soil. This was plainly the southeast angle column of the peristyle. West of this, at a distance of two inter-columniations, the stump of another column showed about 30 cm. above the sod. Near by was the much mutilated fragment of a capital. To the north of the two columns, five more stumps of columns of the front row protruded to varying heights. MENDEL had dug another pit between one of these and the

northernmost of the standing columns. The others were almost buried in fallen column drums. These were, of course, the ruins of the columns which had been the last to fall; for they were entirely exposed upon the surface. The ground sloped slightly upward from south to north so that the truncated column at the north end was higher than

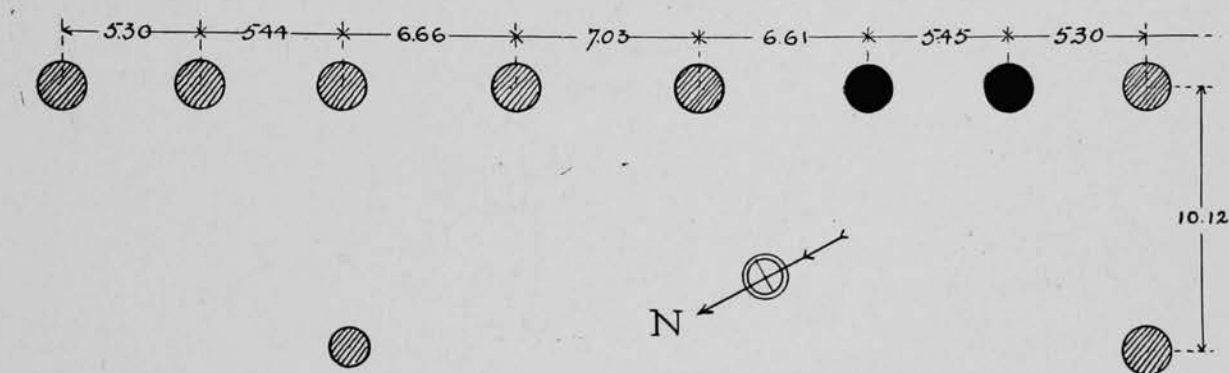
<sup>1</sup> Cf. p. 5.

<sup>2</sup> COCKERELL adds (*Travels*, p. 144): "the other two were blown up three years ago by a Greek".

<sup>3</sup> WILLIAM MARTIN LEAKE. *Journal of a Tour in Asia Minor*. London, 1824. p. 265, Note; p. 342.

the others. Westward from the third truncated column from the north end, the top of a similar column protruded almost level with the soil. To the west of this was another huge pit, with its corresponding heaps of earth, which I took to be remains of DENNIS' work. — On the side of this pit lay a great block of marble which appeared to be the end of an architrave that had rested upon an anta. Not far away lay two detached fluted drums, badly weathered, of a diameter much smaller than that of the other columns. The number of columns thus accounted for on the surface was ten, the eight of the front row, the second from the east end on the south flank, and one of an interior row on a line with the third column from the north end (Ill. 17). COCKERELL'S plan, given in LEAKE'S *Journal*, shows eight.

It would probably be impossible, and perhaps unimportant, to distinguish which



Ill. 17. Sketch-Plan of Columns at Sardis.

of the columns, beside those still standing, were those seen by the early visitors to Sardis. It was apparent that the soil had not increased in depth at this point since the collapse of the columns which were still standing a century and a half ago; and it was equally plain that, up to a certain period, all the marble that fell in ruins was either carried away for building purposes or converted into lime on the spot. The only fallen parts that we found were those of three columns which had collapsed since CHANDLER'S visit in about 1765. The remains of the cella wall, of the portal, and of the fifth column, seen by PEYSSONEL in 1750, had entirely disappeared. The uppermost drum of the truncated column on the north of the middle intercolumniation had been carefully chiselled at the top to a rectangular surface, which I believe was intended to serve as a cutting-block, or guide, for any other blocks of irregular shape that may have been dressed to quadrangular form. It would seem therefore that the upper half of this column had fallen during the period of quarrying in this ruin, that is, before the collapse of the three columns which were still lying as they fell. There were few fallen drums south of the standing columns, but the great mass of them was heaped up nearest to the three truncated columns at the north end and to the column of the second row directly west of the third of these. It seems probable therefore that the three which had fallen since 1765 were three of these four, and that the sixth, which was in place before the middle of the eighteenth century, was either one of those in front of the south anta or one of the two on the south flank. The standing columns, at the level of the soil, and the tops of the truncated ones,

measured almost two metres in diameter, from which one could argue that, if these columns had the proportions of height to diameter common in Ionic buildings, they must be buried to nearly half their height. This calculation implied a depth of soil of about eight metres at this point. At a distance of about 80 m. to the west of the columns, lying loosely upon the surface, were seven column-drums of varying diameters; some of them almost as large in scale as the two standing columns, but all of them fluted. It seemed probable at that time that these fluted drums had belonged to the columns of some other building.

Among the fallen details upon the surface two capitals were found, both in a sadly mutilated condition; these, with the two standing columns, make up the four columns with capitals seen by CHANDLER, and account for the capital of the headless column which he described. None of these capitals or fragments could have been an angle capital; so that we are safe in assuming that the corner capitals were among the first to fall at the east end, and were also among those broken up for building purposes or converted into lime at an early date. But it appeared later, in the process of excavation, that fifteen columns at this end of the building were standing to within a few centimetres of the surface of the accumulated soil, also that the southeast anta and a part of the south wall and the jambs of the doorway, were preserved almost exactly in proportion as they were deeply buried. Some of the pioneer explorers wrote of the antae and of the portal as being still in place, and others mentioned heaps of ruins. The excavations all showed that the entire middle section of the temple was broken up and carried away at least as early as the seventh century A. D. Many thick layers of marble chips and several lime-kilns, on deep levels where Byzantine coins abound, are sufficient proof of this. I have therefore come to the conclusion that such parts of the building as had collapsed became the prey of quarrymen and lime burners, and that these despoilers even excavated for marble after they had removed the fallen ruins; but that they hesitated, through fear or for lack of suitable appliances, to overthrow the towering columns or the gigantic walls. This theory involves the belief that practically the whole of the east end of the temple was standing throughout the greater part of the Middle Ages, and gradually became buried to the depth in which we find it to-day — a depth over and above that at which it was buried in some great earthquake at a comparatively early period.

One other point with regard to the details of the temple should be mentioned here. It is a point noted by various visitors to the site in times past, and has to do with a very conspicuous difference between the two capitals which are still in place. Unfortunately they are not equally well preserved; but an attentive examination of them at once reveals the fact that they are quite differently treated, not only in detail but in spirit. The capital of the northern column, on the right in the illustration (Ill. 7), which COCKERELL pronounced the most beautiful Ionic capital he had ever seen, has an open egg-and-dart carved upon its echinus, like the best Greek examples of this detail; the helix of the volutes is a sweeping graceful curve; the channel of the volutes is curved and deep; the volute band is ornamented in front with an acanthus scroll, and the bolster is adorned with a vertical scale pattern. The echinus of the other capital is carved with an egg-and-dart which is closed by a straight flat fillet





Plate I.



The Site of Ancient Sardis, View from the West.

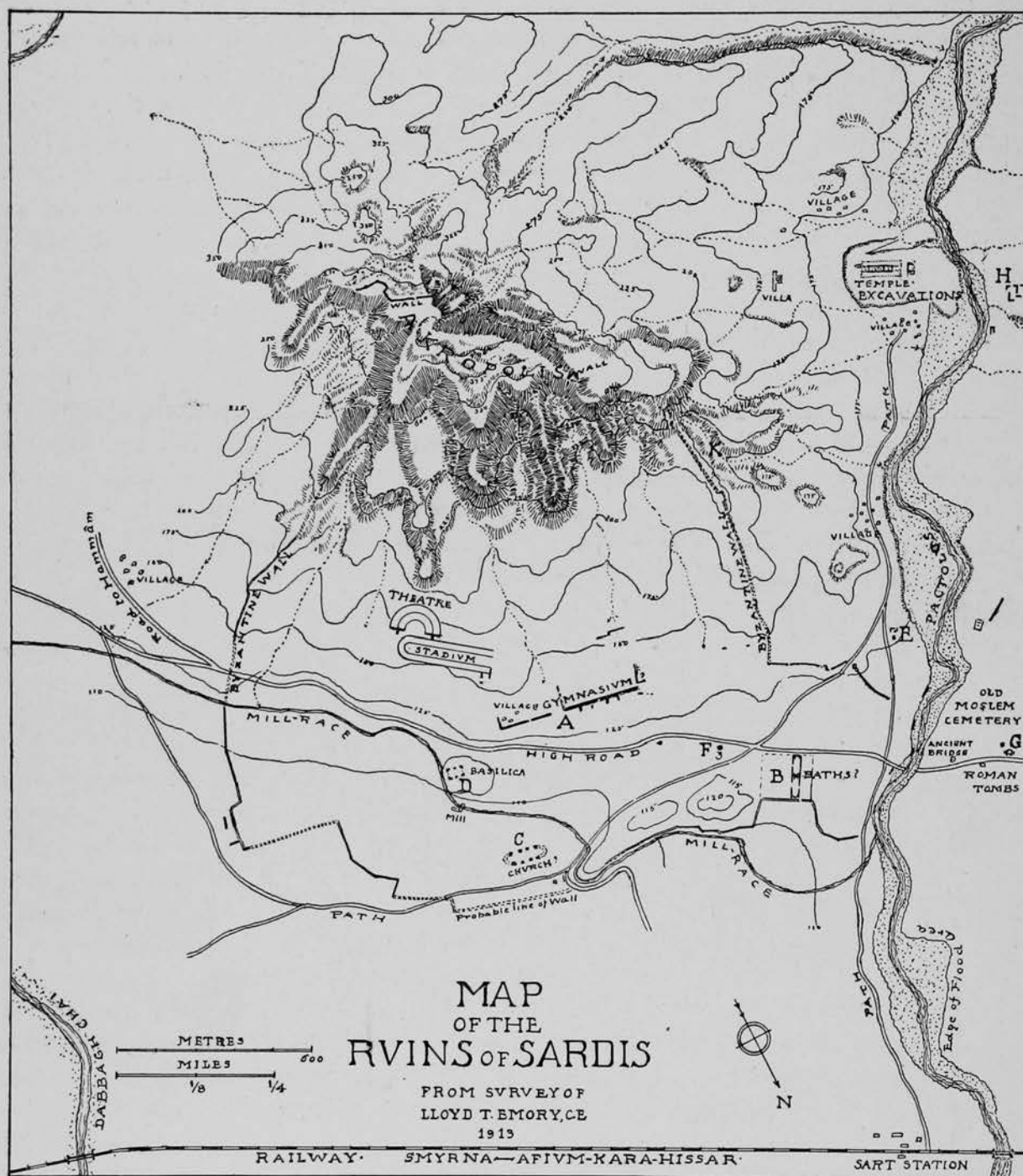
at the top, as in Roman examples, the curve of the volutes is more rigid, the channel is shallow and flat in section, the volute band has only a rosette in the middle, and the bolster is almost plain. One does not hesitate to call the first a Greek capital and the second a late copy. The whole effect of the former is one of compactness, its spirit one of freedom and naturalness, while the latter seems more spreading and more strained. This topic will be discussed at greater length in Volume II which deals particularly with architecture; here it will suffice to state that all the evidence of the excavations points to a re-building of a large part of the east porch of the temple between three and four hundred years after it was erected, a rebuilding in which the shafts of most of the columns were renewed, and in which some of the old bases and capitals were re-used while others were replaced by copies. It will be observed that the flutings of the uppermost drum of the northern column are carried down to the bottom of the drum; while the corresponding ones in the other column are stopped just above that point (Ill. 7). This may indicate that the former drum originally belonged to an older column, and was re-used; while the latter was certainly carved in this way as a guide to the complete fluting of the column, the flutings being stopped above the bottom of the drum to insure the safety of the edges of the arrises when the drum was being set in its place. This must have been the case in all shafts built up of drums; for the fluting of the uppermost drum would have been a difficult operation after the capital had been put in place.

CITY WALLS: There are above ground in Sardis no remains whatever that can be identified as the walls of the lower city of Roman times or earlier, although it is certain that the Hellenistic city<sup>1</sup> was walled in, and very probable that the Lydian city was also walled. HERODOTUS implies that the greater part of the old city was built of mud brick, and it is not impossible that the primitive walls were made of that perishable material. One would suppose that mud brick constructions sufficiently massive to have served as walls of defence would have left remains in mounds which could still be traced, but there are no such remains visible. It seems more probable that the early walls were made of stone, and served at least until the Roman period when they may have been increased in scope, and that, in Byzantine and early Turkish times, they were removed to their very foundations for the constructions of the walls of more restricted area which enclosed the city during the final years of its history, and for the later walls of the Akropolis. The circuit walls which exist in disconnected sections to-day are of very late and exceedingly poor construction. Although they would aggregate about two miles in length, and enclose a considerable space on the north side of the Akropolis, they seem hardly worthy of the name of city walls, being built of the poorest sort of rubble concrete, and having no great thickness. These walls may be traced down from a point high up on the slope of the northeast angle of the Akropolis (see Map, Ill. 18) a little below the spot where they must have connected with the fortifications of the citadel, which have disappeared in the general subsidence of that section of the Akropolis. From here the walls extend to the north, downward into the plain. They are

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<sup>1</sup> POLYBIUS, VII, 18.

traceable, in ruins and foundations, as well as in sections from three to five metres high, as far as the present high-road. North of the road the ruins continue in a straight course to a long section of wall, quite well preserved but of the poorest



Ill. 18.

quality, and extend onward in ruins again to the southeast angle of the city. Here there are considerable remains showing dressed stones and other signs of heavy construction. This may be the site of a great city gate, and it is not improbable that the old "Royal Road" passed out at this point. A thorough investigation here



might reveal a defended gate of the Roman period or perhaps even earlier; for, as yet, we have no means of knowing if the Hellenistic and Lydian city extended thus far on this side of the Akropolis. Beyond this, the walls must have turned abruptly to the west for a distance of about 300 m. and then have bent outward to the northwest and north; for along here there are distinct remains for about 200 m., ending at a point near the lower highway. From thence the traces of wall are very uncertain, extending in a westerly direction along the modern road as far as the bifurcation, beyond which the line of the wall is again taken up by an irregular section of retaining wall. Westward from this point there are traces, disconnected and lying at irregular angles, extending almost to the river. In this quarter, the city of the period of the walls protruded in a narrow extension toward the Paktolos, flanking the great highway which crossed the river by a bridge the abutments of which are still to be seen. The south wall of this extension is not more than 400 m. from the north wall. It is preserved in several long sections of extremely poor masonry aggregating about 300 metres, ending in a sharp angle, from which point the wall may again be traced, in foundations and in two ruined towers, extending up the hillside in a southeasterly direction toward the Akropolis.

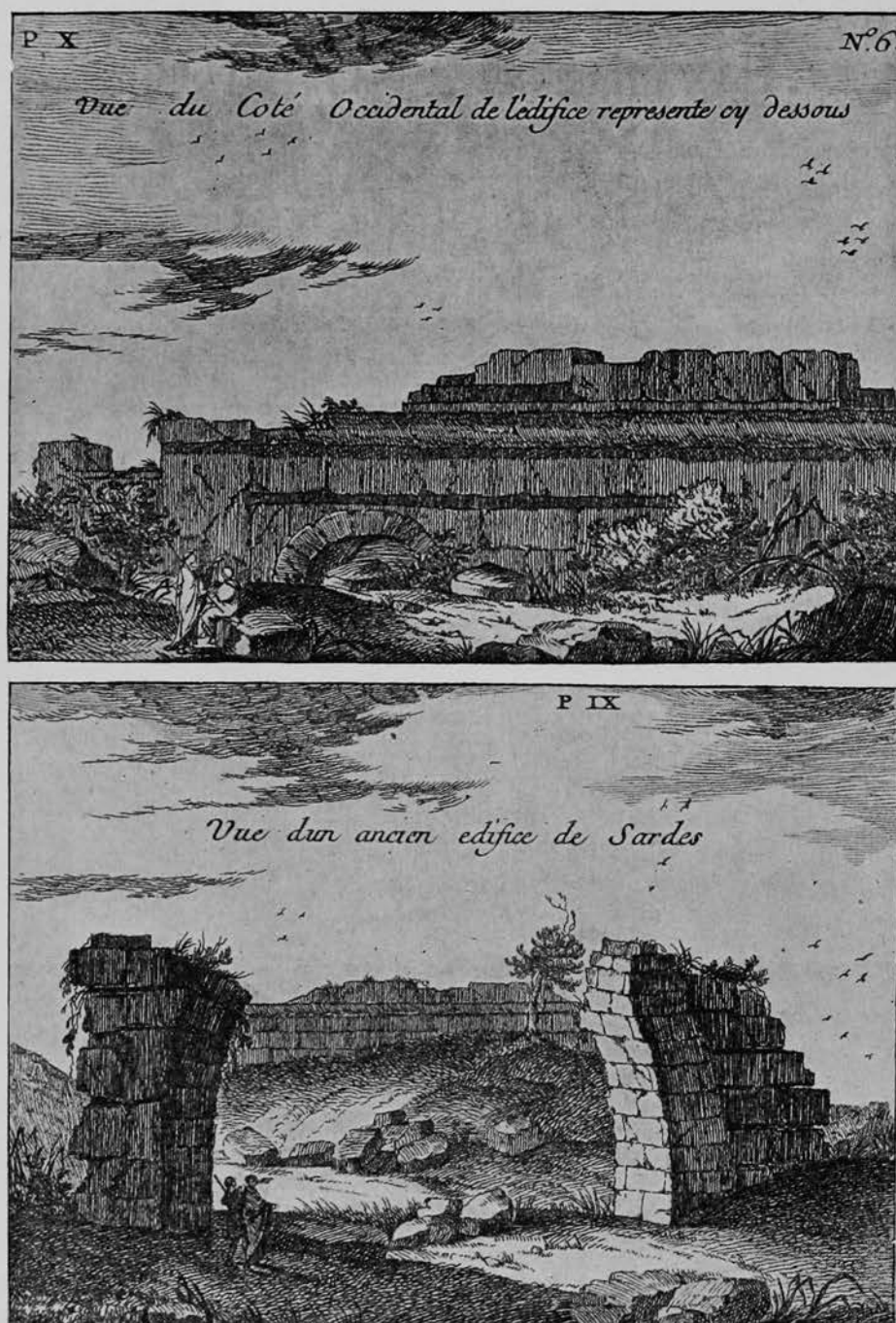
ROMAN REMAINS: Among the ruins of buildings on the north side of the Akropolis it is not easy in every case to distinguish upon superficial evidence between those of Roman and those of Byzantine origin, or, to put it differently, between those of the first three centuries of the Empire, and those of Christian times; for there are ruined edifices which, so far as plan and construction are concerned, might belong to either period. There are however two great structures which are undoubtedly Roman, and which probably belong to the period of the rebuilding of the city after the great earthquake of the year 17, under the Emperor TIBERIUS. These are the Theatre and the Stadium, both of them huge structures in concrete. The facing has been removed from all the parts now visible. The Theatre is quite deeply buried, but its general outline is plain enough even from a long distance (Ill. 4). The BACON letter<sup>1</sup> states that the stage buildings were used as a quarry when the railroad was being built, and trenches are still visible where the stone foundations were removed. The south side of the Stadium was built against the hill-side directly in front of the Theatre; but the curved end toward the east and the whole of the north side were erected upon a great series of concrete vaults which are in place, though for the most part filled up with earth and débris. Just below the north wall are the ruins of a moulded arch in marble which would be interesting to excavate (Ill. 19). To the northwest of this group are the ruins of an extensive building (A in Ill. 18) which has been called the Gymnasium because of the large agonistic inscription<sup>2</sup> found in it about 1905. It was constructed in rather poor concrete, but was probably faced with marble. It now contains a small village, and its plan could not be traced without clearing away the houses, hovels, and stables which fill the interior. This building is probably not so early as the Theatre and the Stadium. Much farther west, in the narrow westward extension of the city described above, and on the north side of the

<sup>1</sup> See p. 7.

<sup>2</sup> See *Denkschr. Wiener Akad.* LIII, 1908, II, pp. 19—20, n. 27.



main road, are very extensive remains of a building over 100 m. long (B in Ill. 18), built of alternate layers of concrete and courses of brick, with remains of spacious arches and wide vaults. Its foundations are set upon a massive substructure faced



Ill. 19. PEYSSONEL'S Drawings of Roman Buildings at Sardis.

with large blocks of white marble, and there are fragments of good mouldings lying on all sides. Nothing short of thorough excavation can disclose the purpose or the age of this building. I was unable, from superficial evidence, to determine whether it and its substructure were of the same date or not. It would be interesting to ex-

cavate them for architectural results; but they may also contain important remains of sculpture or of mosaic. There are no other remains that can be identified even tentatively as Roman, except some massive foundations which protrude from the slopes of the Akropolis hill well above the highway.

The most interesting of the buildings which have been assumed to be of Byzantine origin is a ruin about 80 m. long on the northern limits of the later city (C in Ill. 18). This consists of six colossal piers of white marble, four in a row and one on the return at either end. Three of these piers appear in the foreground in Ill. 4. The foundations of two more similar piers can be traced between the two at the ends, which gives a plan consisting of two rows of four piers each. The piers are somewhat crudely put together, but they show no signs of second-hand material. Each carries a mass of fine brickwork containing the springers of great arches or vaults. The building has been identified as the Church of Sardis by some of the visitors of the early nineteenth century. I should hesitate to pronounce it a ruined church without more convincing evidence. Southeast of the foregoing remains, and about 300 m. from them, are six large piers, in two rows of three, also built of white marble and carrying fragments of brickwork (D in Ill. 18). But this building is certainly later than the other, and is probably very late; for the roughly built marble piers are composed almost entirely of broken architectural details of classical buildings, and the brickwork is of the poorest variety with a core of coarse rubble concrete. A smaller ruin of the Byzantine period, and one that might be easily overlooked in passing, is situated just beyond the junction of the river road with the road that crosses the main highway and runs off to the northeast (E in Ill. 18). Here, in a mass of rather good brickwork, one discovers the crowns of several small domes and half domes. I presume that excavations would show this to be a small church of the later Greek plan with a larger central dome and four smaller domes at the angles of a square about it. Across the river a long section of retaining wall of coarse concrete is visible, and at many points fragments of these crude, late walls protrude from the ground.

INSCRIPTIONS: Apart from the number of inscriptions that have been found built into the walls of the Akropolis, many have been copied in the ruins of the lower city, and most of them have been published. It is hardly necessary to add that none of these inscriptions is in situ. Several that were copied and published long ago have now disappeared. A considerable number of inscribed stones of small or medium dimensions were built into the walls of the poorly constructed houses of the little villages which have sprung up on the site of the city. One of the longer inscriptions (*C. I. G.* 3467), carved on a tall pedestal (Ill. 20), lies in the middle of a field not far from the main highway (F in Ill. 18), another large inscribed block is now standing in the "Gymnasium". Practically all these epigraphical remains were known before the American excavations were begun; but many of them had been hastily copied by travellers, and unsatisfactorily published. All of them are to be republished with fresh copies and photographic reproductions, wherever possible, in the Publications of our Society. A large majority of the inscriptions are in Greek, and of the Imperial Roman epoch, or later; probably not one is earlier than the first century of our era. A few of them are in Latin, but not one in Lydian script was known among

the ruins or had been found upon the surface. All the moveable inscriptions, whether complete or fragmentary, have now been brought to the excavation house for safe keeping.

### 3. TOMBS.

The vast grave areas in and near the site of ancient Sardis were unknown before the American excavations were begun. Bin Tepé, the so-called royal cemetery far across the Hermos, was of course known to all readers of HERODOTUS, and had



Ill. 20. Inscription lying in a Field Northwest of the Akropolis.

than for the interment of the dead. If any traveller had crossed the river, and had climbed up toward any one of a number of the red clay perpendicular faces that stood out plainly on every hand, he soon would have found much to suggest the presence of ancient tombs. Apart from the fragments of broken sarcophagi lying in the bottoms of the little ravines which intersect the hills, there are even more unmistakable signs, such as holes, large and small, in the faces of smooth, almost vertical cliffs (Ill. 21). Some of these holes were large enough to permit a man to crawl into; but they were so high up that they could not be reached without a ladder; others were merely narrow slits, like half-open eyes. The large holes would have been found by the climber to be choked up a short distance from the outside, and the small ones would have turned out to be holes, originally of the same size as the others, only more completely choked. He would have conjectured that these holes in the cliffs were passages leading into chambers of some sort, and indeed a more minute examination of the steep face of hard clay in another part, or higher up, above the holes, would have revealed the rear wall and perhaps part of the floor of a chamber which is now merely a narrow ledge on the cliff's side. A little study of the site would have made the situation plain. Erosion has been busily at work on these hills since the tombs

been examined by excavators, but it was natural to assume that there were less remote burial places for the less distinguished Sardians. These however had not been sought, or at least had not been mentioned, by earlier investigators. Nevertheless there were indications obvious to the casual observer, that the clay hills across the Paktolos, opposite to the twin columns (Ill. 7), had been burrowed into by the ancients; and it might have been taken for granted that these burrowings were for no other purpose

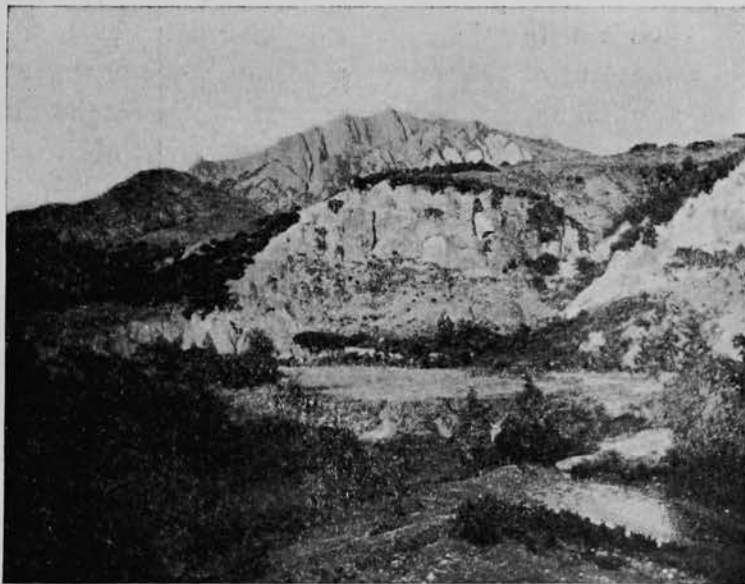


were first hewn out of the hard packed clay. These cliffs were originally slopes, but have been worn away. The higher tombs have been wholly, or almost wholly, destroyed, those just below them have had their approaches carried away, leaving the long shafts, or corridors, appearing as holes in the cliffs, and the eroded material has probably buried very deeply the entrances of tombs still lower down. Such conjectures were proved to be well founded as soon as the excavations of the tombs began. A later chapter in this Part is entirely devoted to descriptions of the forms of these tombs.

The tomb areas were found to be very extensive, not only on the west side of the river, honeycombing every cliff and the sides of every ravine for a mile or more in the direction of the mountain, but also on the east side of the river, beginning not more than half a mile above the temple (Ill. 22). Later on, tombs were discovered even in some of the hillsides about the



Ill. 21. View in the Nekropolis.



Ill. 22. Cliffs honeycombed with Tombs along the Paktolos above Sardis.

base of the Akropolis, and all of them, near and far, gave evidence of belonging originally to the Lydian period. We may add that built tombs of the Roman and Byzantine periods have been found in many quarters, especially beside the great highway.

#### 4. AQUEDUCT.

A more complete description of the aqueducts and water systems of ancient Sardis will be found elsewhere in these Publications; here I wish only to mention briefly the superficial remains of a great aqueduct of the Roman period visible at many points on that shoulder of the Akropolis which projects southward and eventually connects with the foot of the mountain. The shoulder in question



slopes slightly down from the point where it joins the Akropolis to the point where it connects with the smooth sides of the foothills of Tmolos. Its ridge, or crest, is very narrow just below the Akropolis, affording bare passage for a path, and it falls steeply into ravines on either side. As it extends toward the south, the ridge widens out at the summit, but both sides are gashed with deep gorges some of which are almost inaccessible. These open ultimately into the bed of the Paktolos on one side and into the Dabbagh Tchai on the other. On this crest of the shoulder, a short distance below the Akropolis, one encounters long stretches of half-buried masonry. At some points the mountain path follows along the line of this masonry. Here and there are seen comparatively high substructures built of solid concrete, here and there are sections of large tile pipes embedded in masonry, and at two or three places are found square structures like the foundations of towers. A more minute examination shows that these long stretches of masonry are the ruins of the *specus* of an aqueduct. The *specus* appears to have been lined with *opus signinum*, and to have carried the water itself when first built, and later, probably after it had fallen into disrepair, to have been provided with at least two lines of large terra-cotta pipes. The tower-like structures were unquestionably either *castella* or *piscinae* like those found at intervals in all the aqueducts of the Roman Campagna. In the direction of the city, the line of the aqueduct is cut off and entirely disappears in the deeply eroded western slope of the shoulder near the Akropolis hill. Along the crest it may be traced for long distances, usually following the contours, but at more than one point it vanishes on one side of a hill and reappears on the other, showing that it was tunnelled through. Its last appearance on the shoulder is to be seen at the extreme south, where it reaches the north side of the valley dividing the clay formations of the Akropolis from the solid stone slopes of the mountain. This valley was bridged by a row of piers and arches that must have been almost thirty metres high. Abundant remains of the piers are to be seen in the low ground. Across the valley the line of the aqueduct is taken up again, and follows the slope of the mountain side in an easterly direction, until it reaches the edge of the ravine of the Dabbagh Tchai, where it turns, at a great height above the water, and follows the side of the ravine for miles up into the mountains until it strikes the level of the stream. It is plain then that this remarkable example of ancient engineering skill was constructed for the purpose of adding the waters of the Dabbagh Tchai to those of the Paktolos for the supply of Sardis, and of bringing the water into the city at a high level for greater facility in distribution. The aqueduct, as it appears upon the surface, is a work of the Roman period, with repairs and changes of Byzantine times. It may be that thorough examination will show that the original undertaking was inaugurated in Hellenistic or even Lydian days; for HERODOTUS<sup>1</sup> mentions an aqueduct at Samos as one of the greatest works of the Greeks.

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<sup>1</sup> III, 60.



Ill. 23. East Bank of the Paktolos showing Cross-section of Débris.

### CHAPTER III.

#### THE EXCAVATIONS — SEASON OF 1910.

The negotiations for the securing of permission to excavate at Sardis were concluded with O. HAMDY Bey at the Museum in Constantinople in the summer of 1909; the actual *firmân* was granted by the Porte through the offices of the American Embassy early in 1910. The autumn and winter were spent by the members of the expedition in America in making arrangements for the journey, and in securing and assembling the elaborate equipment necessary for the carrying out of a large enterprise in a country where little or nothing beyond food is to be bought. Much of the heavier equipment, such as the narrow-gauge railway, the waggons and the locomotive which were to be run upon it, and the crane for the lifting and removal of heavy objects, were ordered in England and Germany through Messrs J. G. WHITE and Company of New York, and were to be shipped directly to Smyrna. Other parts of the outfit were secured in London. The camp, i. e. the tents, camping furniture, and utensils, which I had used on the Princeton Expeditions in Syria, were brought up from Jerusalem by GEORGE D. CAVALCANTY, the dragoman of my Syrian journeys, and three camp servants, known and tried in Syria, all Christian Arabs, were to serve our new household in Asia Minor. The excavating party of the first season consisted of four members, with myself as director, Mr. CHARLES F. COOK, C. E. engineer in charge, Mr. CHARLES N. READ, C. E. assistant engineer, and Mr. HAROLD W. BELL,

cataloguer and in charge of such small objects as should be discovered. Professor DAVID M. ROBINSON came over for a few weeks from Athens, where he was connected with the American School of Classical Studies, to copy newly discovered inscriptions, and study some of those already known in the region of Sardis. Mr. W. H. BUCKLER joined our party for the last six weeks of our work.

The engineering party sailed from New York for Smyrna by the Mediterranean route taking the bulk of the lighter equipment with them; I was obliged to go by way of London and Constantinople for the purpose of signing contracts for the heavy equipment in the former, and of making final arrangements with the government in the latter. The entire party assembled in Smyrna in March. Here the camp and servants had already arrived, and, after a few days spent in making necessary purchases, the excavators started for Sardis. The position for the camp was chosen on high ground up in the valley of the Paktolos, about 100 m. to the northeast of the columns, and a slightly greater distance east of the village (Ill. 6). The encampment consisted of a large double tent for general living purposes, a smaller tent for the engineer's office, three sleeping tents — two for the regular members of the expedition and one for their assistants — and a kitchen tent. A fourth sleeping tent for guests was added later in the season. All these tents, with the exception of that for the kitchen, were provided with wooden floors; and wooden racks for books, equipment, small finds and the like, were built on all sides of the large living-tent and the engineers' office. Several days were spent over the task of hauling materials and equipment from the railway station to the camp, and making the camp fit for habitation. The lack of any semblance of a road from the station to the village, and the difficulty of securing carts and ox-teams, considerably delayed the work. But finally word was sent out that labourers were desired, and, on March 29th the excavation was actually begun. I had been fortunate in securing the services of a veteran foreman for the opening weeks of the first campaign. He was GREGORIOS ANTONIOU of Larnaca in Cyprus, who had served under HOGARTH and EVANS, and boasted an acquaintance with almost every English and American archaeologist who had worked in Cyprus or Crete within the past quarter of a century. GREGORI had picked up two or three fellow-countrymen in Smyrna, or on the way, but his other workmen were Turks of the immediate vicinity. His experience had been almost entirely in tomb digging, for which he had distinct natural ability as well as years of training. The unearthing of a great building rather appalled him, and he seemed to feel little interest in the engineering problems involved; but he had worked with Turks before, and had employed unskilled labour, so that he was extremely valuable to us in securing men and in breaking them in to their entirely new and strange task. On the morning of March 29th about thirty labourers were taken on for the beginning.

#### 1. EXCAVATIONS AT THE TEMPLE.

The general form and surface conditions of the land in the immediate vicinity of the columns have been described above (see Map II). It will be remembered that the columns stood in the middle of a large barley field, which sloped gently from a



point high above the temple to the edge of the river where it fell steeply into the bed of the stream. At one place a more or less recent change in the actual water course had undermined the bank, and through a series of landslips had produced a perpendicular face affording a practicable cross-section of the strata of débris which had buried this part of the city (Ill. 23). Near the bottom of this cross-section was a bed of hard-pan; the level above this would naturally represent the lowest possible stratum within which one could expect to find remains of human occupation. This we called "level number one". Above it the perpendicular face rose to a height of about five metres. Using this cross-section as a guide, we began operations about fifty metres to the north of it upon a part of the bank that was not perpendicular, but steep and grassgrown, 140 metres directly west of the two columns. Here a cutting was made about thirty metres wide, beginning upon level No. 1 and directed eastward toward the columns (Ill. 24). The thirty labourers were divided into three groups,



Ill. 24. Second Day of the Excavations

the pick-men who loosened the soil, the shovellers, and the basket carriers; the earth to be removed was for the most part soft loam and sand, and the work proceeded rapidly upon two terraces. While the actual excavation was getting under weigh, a survey was being made of the entire tract of land between the two ravines that bounded the temple field on the north and south, extending from a knoll below the Akropolis down to, and including, the bed of the Paktolos (see Map II).

As soon as the sloping grassy bank had been cut away, and the east face of the upper terrace had begun to encroach upon the more level field, a series of

difficulties arose out of disputes between ourselves and the owners of the property, not so much over the price to be paid for the land as over the damages to the standing barley. After the preliminary haggling, unavoidable in the Orient, the owners were not disposed to ask unusually exorbitant prices for the land; the chief difficulty was to discover who the actual owners were. We proposed to purchase the entire field that was being surveyed; many months passed before we were able, by process of law, to find the legal owners, only one of whom proved to be among the original claimants. With the barley it was a different matter. We were buying green barley and cutting it for our animals, in a field near by, and for this we were paying a normal sum; but for the barley in the temple field we were expected to pay the cost per bushel of the probable yield for the year. We finally decided to buy no land until the deeds were actually produced by the owners, and for the barley we made a compromise by which we purchased from day to day as much as was destroyed in excavation, leaving the indeterminate remainder to be harvested later in the spring by the owners in the ordinary manner. YAKUB Effendi, our Imperial Commissioner, was of service to us in these negotiations. When once these difficulties had been settled, and after the first pay-day had passed and we had shown our ability and willingness to meet this first financial obligation, there were no further delays, our neighbours became our friends, and cordial relations with the community were established.

The work of excavation had hardly begun upon the lowest level before signs of



Ill. 25. Row of Marble Bases, the first objects to come to light.

human occupation appeared in a stratum about a metre and a half above level No. 1. This stratum soon produced remains of a pavement and fragments of cut stone. The lower level was at once abandoned, and work was pushed forward on level No. 2. The first objects found in situ upon this level, beside some rectangular slabs of pavement in limestone and sandstone, were bases composed of two or three quadrangular blocks of white marble, very highly finished, and diminishing in size from the bottom upwards. The first

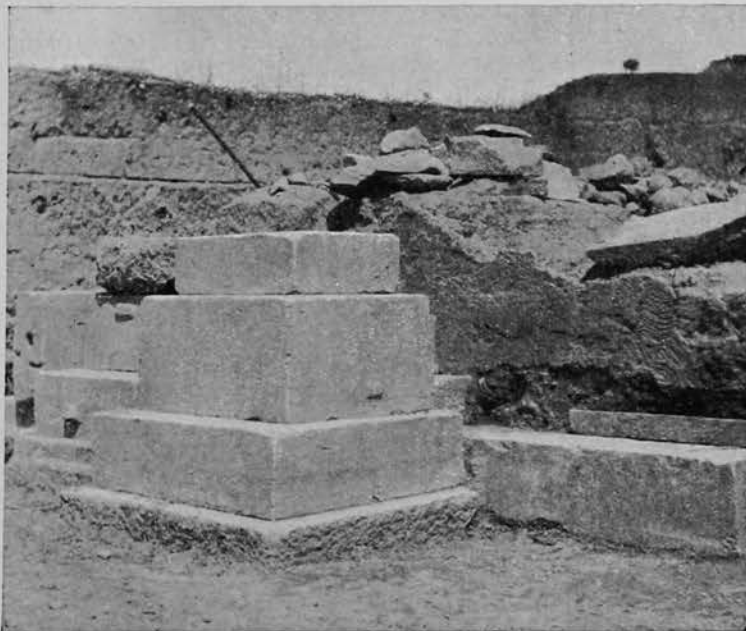
three or four of these to come to light appeared to be in a row extending eastward (Ill. 25). From the size and shape of several of them it was at once apparent that they had carried stelæ of various types, and indeed the uppermost stone in two or three bases showed a rectangular socket for the reception of the tenon in the bottom of a stele. Others were of such a shape that they could have supported only statues; but no fragment

of a stele or a statue could be found and none of the bases was inscribed. In the course of the work two or three detached bases of large size, about 10 m. to the north of the row first discovered, came to light. The digging was pressed forward at this point, six carts drawn by horses relieved a number of basket-carriers, and presently there appeared, directly behind a large marble base, a short section of stuccoed wall lying north and south with a flight of six steps adjoining it on the north (Ill. 26. See also plan in Ill. 35 forward.) The wall was about 1.75 m. high, and, with the steps, was built of large rectangular blocks of friable purple sandstone, a natural deposit of which is to be seen in the river bank about half



Ill. 26. Marble Bases at South End of Steps.

a mile down the stream. The lowest course was a projecting one of marble, not laid in the wall itself, but against it, and the stucco was brought down to this.



Ill. 27. Bases at North End of Steps.

The stucco was of a very hard quality, but had been detached from the wall in many places by the action of moisture. It was apparent that the building was of early date; for the stucco was in all essentials like some of the oldest known examples of this material. It very soon became plain that the short wall turned eastward at its south end. While it was being followed up in the excavations, the row of bases to the south continued unbroken, and the steps were found to extend 15 m. to the north, where they terminated in another

short section of wall with marble bases in front of it (Ill. 27). Here then we had a broad flight of steps flanked by solid structures, like broad parotids, with stelae



bases placed against them. It seemed likely that this was the west end of a very ancient temple. The limestone pavement of the building at the top of the steps was carefully cleared, and the walls were found to be preserved in places to a height of 60 to 70 cm. above it. After a little, the northwest angle of the building was turned, and here was discovered a long row of marble stela bases placed directly against the north wall of the building (Ill. 28). Some of these bases presented new designs and two were moulded; but the profiles of the mouldings were not Greek or Roman, and we presumed that they must be Lydian; one showed the lower part of



Ill. 28. Stelae at North End of Lydian Building.

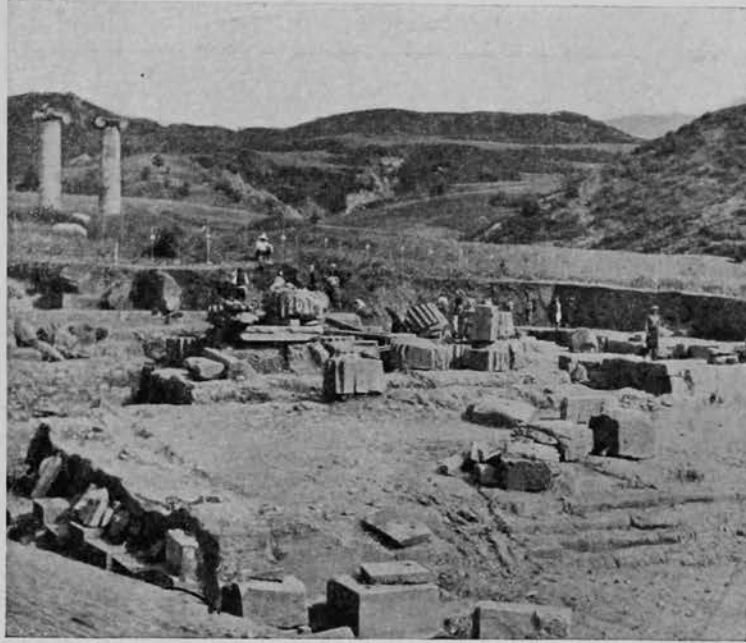
a stele well leaded into its base. On the south side, the long detached row of bases presented a small rectangular base of more classical design, with a plain die, and with upper and lower mouldings. A small and beautifully carved angle antefix in marble was found beside one of the bases (Ill. 25) and a fragment of a tapering column about 40 cm. in diameter at the bottom. But in all this digging no fragment of pottery appeared on or near the level of the pavement. The only objects found were spherical and ovoid

balls of sandstone, from 20 to 25 cm. in diameter, which looked like ancient missiles. A few of these may be seen on a stele base in Ill. 26. When the work along the flanks of the building had progressed about 10 m. on either side, we came upon rough walls of rubble concrete projecting to the north and south. I am now inclined to regret that they were not spared; but they were very crudely constructed and were difficult to keep intact, and, since they completely barred further progress, I had them removed after they had been surveyed.<sup>1</sup> To our surprise the stucco walls ended abruptly on the line of the rubble walls which projected on either hand, and we discovered that we had reached the rear of what we had supposed to be a temple, and were beginning to excavate a long east wall of stucco over 2 m. high. Thus the plan of our building was found to be that of an oblong stoa, 21 m. long and 10 m. deep, rather than that of a temple (Ill. 29. See also Ill. 35 forward.)

From the day when we abandoned level No. 1, we were digging in earth from four to five metres deep. The work was carried on upon two terraces of about equal height. This created a new tentative level which we called No. 3. Work on level No. 2 was conducted in about two metres of light earth mixed with sand and often

<sup>1</sup> These walls later were found to have been concrete casings of column foundations which had been removed.

showing the action of water; the upper terrace consisted for the most part of loam, with signs of successive layers of cultivation. There were no well-defined stratifications in the entire five metres of depth, no level of hard packed earth, or of potsherds, or of other objects which may be taken as indicating populous occupation. Yet level No. 3 must have coincided more or less closely with a surface which had been exposed for a long time before it was buried in the two metres of loam found to-day. Below level No. 3 practically no coins were discovered nor any pottery fragments that could be dated. Within the first few days a marble globe, about 45 cm. in diameter, was found about half a metre above level No. 2. The globe was encircled by a wreath of olive leaves in relief, and bore only these words in Greek: "*Stratonike's, daughter of Demetrios*", which, as Dr. ROBINSON<sup>1</sup> believes, probably refer to the famous daughter of DEMETRIOS POLIOREKTES who captured Sardis in 287 B.C., and wife of SELEUKOS who became ruler of Sardis in 281. Near the top of the steps of the oblong building lay, as if it had rolled into that position (Ill. 30), a large cylinder of marble, probably the base of a statue. It bears a long inscription<sup>2</sup> of the first century B.C. in honour of one IOLLAS mentioning as awarded to him many crowns as well as statues of bronze, of gilt bronze and of marble, and many painted portraits. Besides these larger objects little else was found in the lower level except long pins of bone and ivory with heads of various shapes and sizes. On the upper level however, and above



Ill. 29. Lydian Building. View from the Northwest.



Ill. 30. Cylindrical Base with Greek Inscription, soon after it was found.

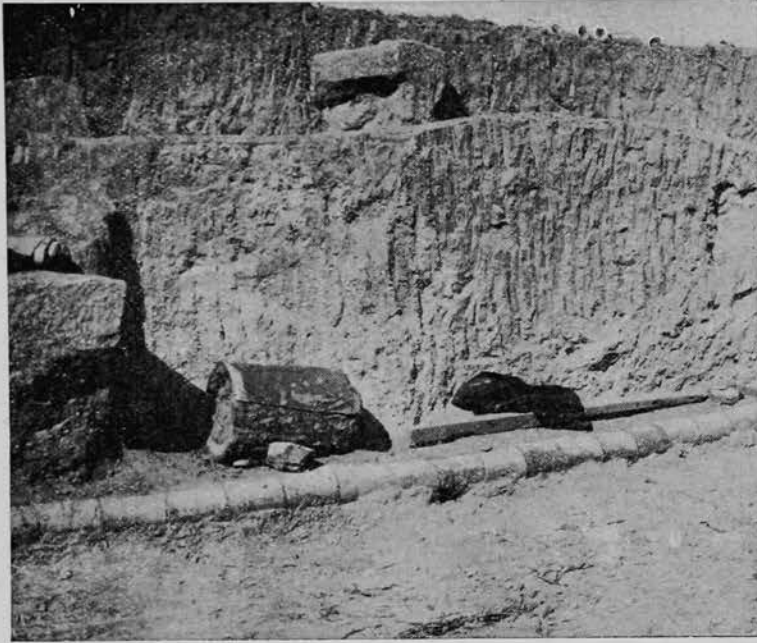
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<sup>1</sup> *A. J. A.* XIV (1910), p. 415.

<sup>2</sup> *A. J. A.* XVII (1913), pp. 29-31.

it, many coins came to light; the earliest being those of the Emperor CONSTANTINE THE GREAT. Within 60 or 70 centimetres above the level, coins of VALENS, THEODOSIUS,



Ill. 31. Byzantine Waterpipes of Terra-cotta.

HONORIUS, LEO, JUSTINIAN and HERACLIUS were discovered, and, above these, a metre or more below the surface, numerous concave late Byzantine copper coins. Upon these same general levels with the earlier and later Byzantine coins were found fragments of glazed bowls and dishes of various shapes and colours, showing crude designs, some geometrical or floral, and some pictorial.

Throughout both levels, i. e. from 50 cm. below the surface to a level about a metre above No. 2, an astonishing number of Byzantine waterpipes of terra-cotta were unearthed

(Ill. 31). Long, continuous, stretches of these pipes were encountered, running in all directions, and in every part of the excavations. The pipes themselves varied in diameter from 10 to 32 cm., and were composed of long and short sections; all were well made, with carefully fitted flanges, set in the hardest cement (Ill. 32). Some were corrugated, others plain. Several of the pipes of smaller diameter were found to have settling-pots of terra cotta (Ill. 33) of large diameter, at intervals along their course. All these pipes and settling-pots were necessarily removed, and have been preserved. A complete survey was made from day to day, so that the course of each pipe, in so far as the excavations have been carried to date, is on record.



Ill. 32. Large Terra-cotta Pipe crossing the Lydian Building.

Soon after the size and plan of the oblong building had been determined, about the middle of April, we came upon a roughly cubical mass of marble blocks with its



lower courses encased in concrete, 9 m. south of the southeast angle of that building (Ill. 34; A in the plan Ill. 35). The blocks were large and of irregular sizes with roughly cut exterior faces, but joined with the utmost precision. It was plain that they were not intended to be seen, and it was therefore assumed that they were foundations. Presently a similar mass of marble blocks (Ill. 36) came to light about 8 m. to the northeast of the other (B in plan). There also the lower courses were encased in concrete on two sides. Then a third mass of marble blocks (C) partly encased, was unearthed directly east of the first, and again a fourth (D), due north of the second, this one surrounded with a concrete casing, and showing only its



Ill. 33. Water-conduit and Settling-pot.

uppermost course of marble blocks. Following the concrete casing toward the north we came upon the upper course of a fifth mass (E), retaining one half a large plinth



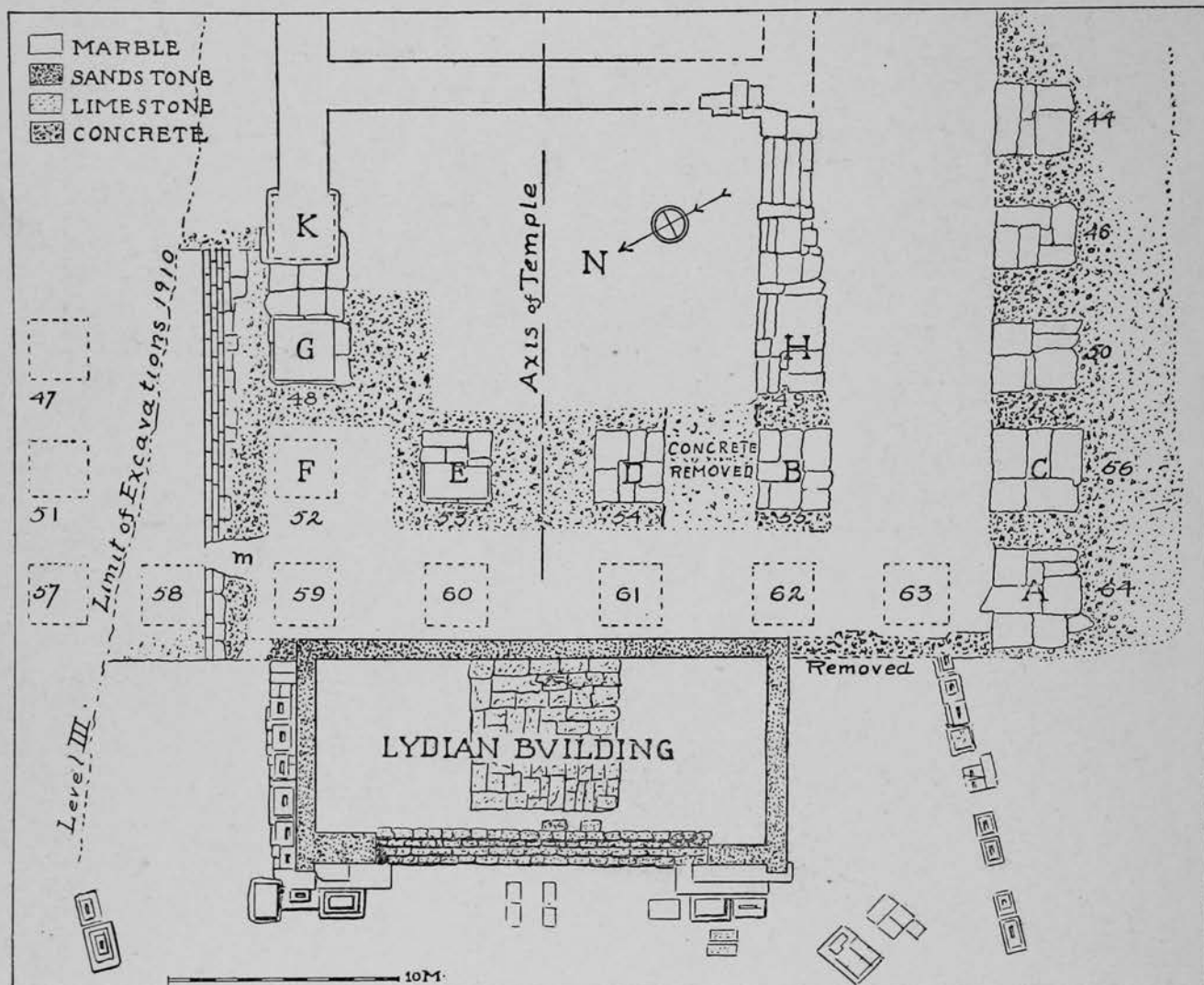
Ill. 34. First Appearance of Marble Foundations. Pier A.

block (Ill. 37), smoothly dressed, proving it to be the foundation of a column. Upon the discovery of the first two or three of these massive marble foundations it had not seemed probable that they were to be regarded as parts of the great temple, two columns of which were standing erect nearly 100 m. to the east; but as the number of these bases multiplied, since it was plain that they were foundations for columns, and since their alignment with the standing columns was perfect, it gradually became evident that we were working in the western end of the temple, the eastern end of which was

represented by the twin columns. Nevertheless the plan of this end of the building

was developing in a manner most confusing. We presumed that the first mass of marble encountered (A) was the southwest angle of the great peristyle; the foundation of the column (C) adjoining the angle on the south flank had come to light, but no corresponding foundations on the west end had been discovered; all the other bases belonged to the inner row, i. e. were on the line of the second base from the southwest angle (Ill. 35).

There now appeared in the excavations, as the digging progressed, a wide passage



Ill. 35. Plan of Lydian Building, and Foundations at West End of Temple.<sup>1</sup>

between the rear wall of the Lydian Building and the concrete casing of the three column foundations that stand in a row 5 m. to the east of it. At the north end of the east side of this passage, at the point where another column base should have been found, there was only a deep recess in the concrete (F), and, to the north, the passage terminated in a wall of concrete (m). This marked the northern limit of the excavations for the time being. At the south we continued to uncover the bases of the south flank of columns, which presently numbered four, all backed with concrete to the south, and having concrete between them, but showing on the north side their marble

<sup>1</sup> The numbered squares represent the missing column foundations as shown in Plate II.

structure. North of this row of foundations a passage 8 m. wide was opening up in the digging. The column foundations in the row extending northward from the second base on the south flank were 8 m. distant from it — a space too wide for a single intercolumniation — and to the east of this we came upon the foundation of an anta wall (H), suggesting that the plan of the temple was pseudo-dipteral. This was confirmed as the digging proceeded eastward at this point, with a row of column foundations spaced about 5.02 m. on centres on one side, and the continuous marble foundations of the anta and cella wall on the other, 8 m. distant. The concrete mass extending outside the bases of the south flank sloped to the south, and



Ill. 36. Second Marble Pier, B. in Plan.

upon it were discovered a row of marble blocks aggregating about 10 m. in length, which had constituted one of the outer steps on this side of the temple.



Ill. 37. Plinth Block on Pier E.

It was now found necessary to abandon, in part at least, the excavations on level No. 2, and to continue the work chiefly upon a new level, No. 3, that of the platform of the temple. However, it was deemed wise to carry on the digging upon the lower level, among the marble foundations, because of the possibility of discovering the substructure of an older temple, or other building, that might have antedated the great temple. With this end in view the space between the foundations of the bases of the

south flank of columns and the cella wall, i. e. the space below the wide south pteroma of the temple, was cleared out for some distance down to level No. 2, and a break was made through the concrete between the base (B) in front of the anta,



and that adjoining it to the north (D) (Ill. 38) in order to facilitate the clearing out of the space between the antae down to this lower level. Then, as the entire width of



Ill. 38. Breach between Piers B and D.

the face of the excavations was found to be too narrow to include the whole width of the temple, this space was extended a little to the north, and not without difficulty because the slope of the surface was already becoming rapidly steeper at that side, and the excavations correspondingly deeper.

At this juncture the arrival of our railway equipment was announced from Smyrna, and, as soon as this was installed, work on the northern extension of the cutting was greatly accelerated (Ill. 39). It was not long before the substructure of the northern anta wall was reached from the inside, and before the lower course of the anta itself (K) was uncovered. It then was seen that what had appeared as a long anta wall in the foundations on the opposite (south) side was in reality the foundation of a shorter anta extended to form the base of the column at (G); for we found, not only the uppermost course of the foundation of the north anta with the line of the anta base clearly marked upon it by incised lines, but the plinth of a column (G) directly to the west of it (Ill. 40), showing that there had been three columns in the row extending westward from the anta. And yet there was no sign of the foundations of the other column of the inner row, nor any sign whatever of any of the columns of the front row save only that at the southwest angle.



Ill. 39. The First Waggon in Operation.

But by this time indications were beginning to appear which pointed at least to a tentative solution of the problem of the missing bases. It was becoming more and more evident that the concrete casings which accompanied so many of these column foundations had been poured into trenches dug about them at some time after they were built. In some cases the casing inclined outward toward the top. It was also apparent, from the abundant deposits of marble chips at levels somewhat above the pteroma level, that extensive breaking up of the temple had been carried on here in the sixth and seventh centuries of our era, as was shown by coins. The sides of the recess in the concrete wall which extended along the western face of the inner row of bases were examined and were found to retain the impressions of marble blocks which had been in place when the concrete was poured in. It then became plain that the marble-breakers, not content with the ruins which lay upon the surface, had actually excavated for marble. This theory once established, it was not difficult to account for the disappearance of the foundations of certain parts of the building. Those of the four

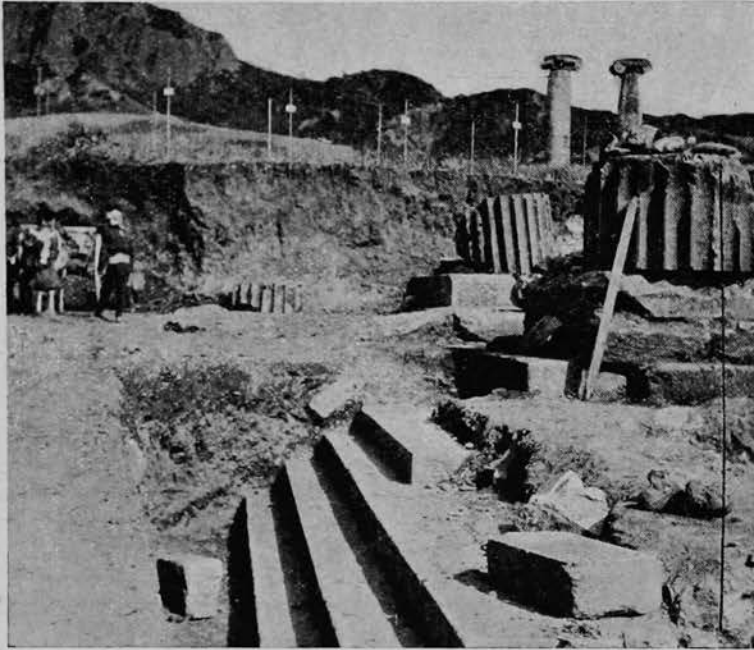


Ill. 40. Plinth at F. and Fluted Drum in process of Excavation.

middle columns of the front row, (Nos. 59, 60, 61 and 62 of the Plan and Plate II), had been laid against the rear wall of the Lydian Building. On the other side they had been made secure by concrete poured into a trench dug between them and the inner row, and apparently were considered to be sufficiently strengthened by this means, for no concrete was found between the columns. Hence the foundations of at least five of the columns of the western row were among those most readily dug out, first because they were the least deeply buried, and secondly because they were not encased in concrete. The two remaining columns of this row were still unaccounted for because the excavations had not yet reached their level.

A slight lowering of the middle terrace on the north side revealed a most unexpected detail in the form of a flight of five marble steps, beautifully made, beginning at the northwest angle of the north anta and extending, in its two lower steps, to a point 1.50 m. west of the outside line of the outer row of columns as established by the foundations in place at the south end of that row. These steps (Ill. 41) were of course within the columns of the northern flank — columns which had not yet come to light, but which were confidently assumed to exist

if the temple were to be symmetrical —, and led downward from the pteroma level. Their position was very perplexing as no similar steps appeared on the south side.



Ill. 41. Steps adjoining Piers F and G on the North.

ing from four to six tons each (Ill. 42), taxed the resources of our engineers, for our lifting crane could not be brought into use. We did not wish to drop them to the lower level where they obviously did not belong, and the pteroma level was at this time being excavated in search of earlier foundations. It was finally decided to place them upon the column bases of the inner row and the concrete masses around them, and upon the north anta, where they still remain (Ill. 43). The wall of the north anta was found to preserve its bottom course intact; and presently the west wall of the cella was reached, showing foundations of the usual depth at both ends and slight foundations in the middle, and with the bottom course of the wall itself quite intact except at the extreme south end (Ill. 44). The outer face of the ends of this bottom course, i. e., the parts above the deep

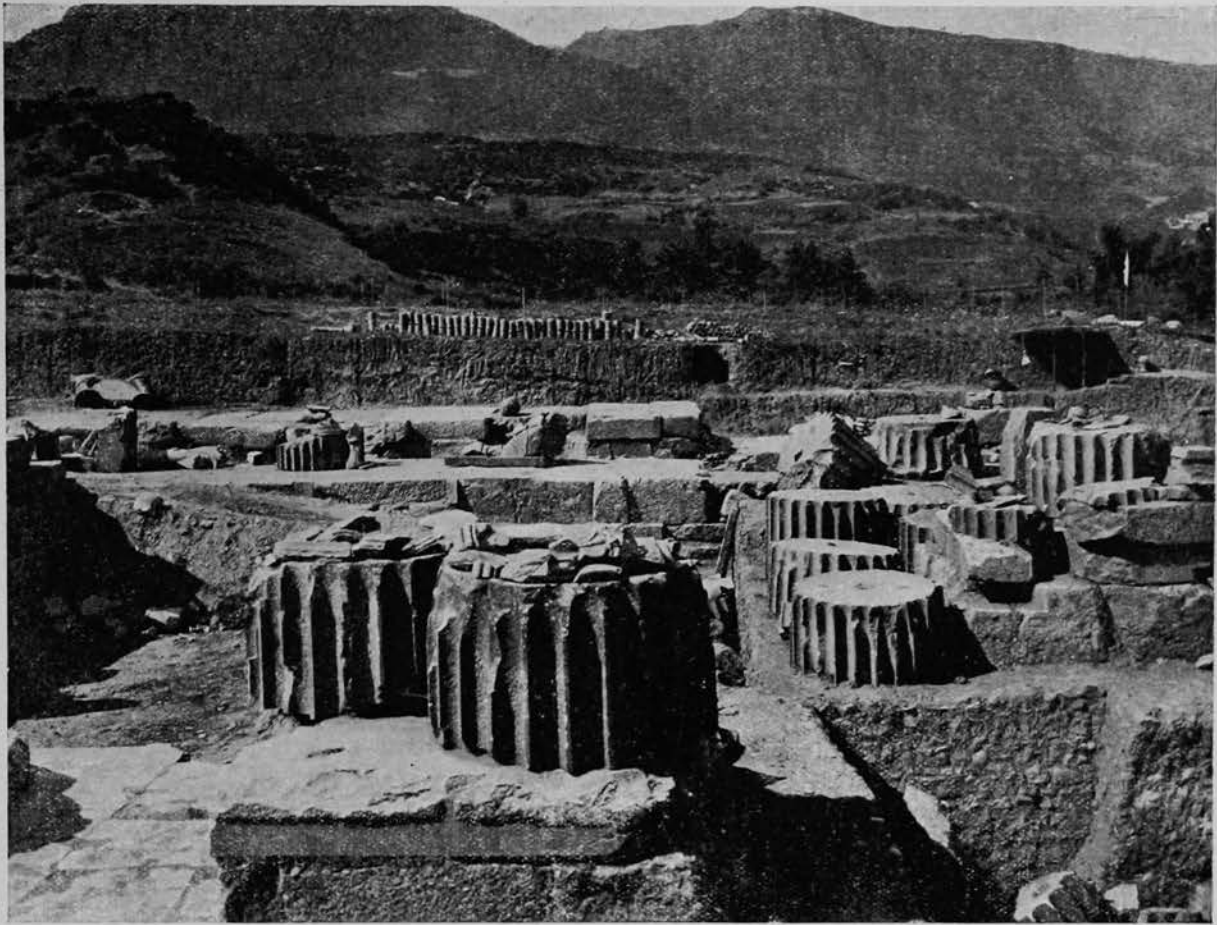
They marked the northern limit of the excavations for the year 1910, and remained an enigma which has not yet been cleared up to the satisfaction of all who have studied the problem.

A little before the first of May the eastward extension of the upper terrace reached the spot where a number of fluted column-drums lay upon the surface, as described on page 27. Directly below these, buried in hardly more than a metre of soil, were other fluted drums of two different scales, twenty or more all told. The removal of these drums, weigh-

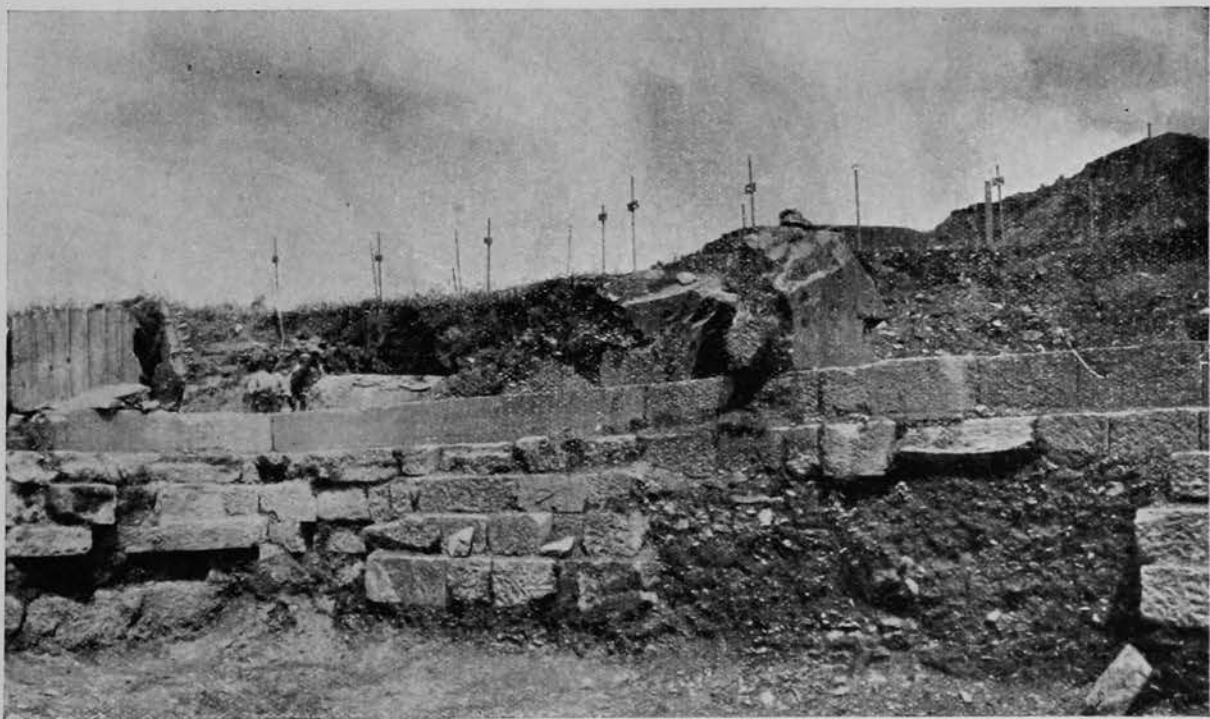


Ill. 42. Moving Column-drums to solid Foundations.





Ill. 43. Foundations and Column-drums at the West End of the Temple. View from the North.



Ill. 44. Excavation in front of West Wall of the Cella.

foundations, are highly finished, while the faces of the middle stones, those above the lighter foundations, are much rougher in finish. The light foundations suggest that there was a doorway in the wall, and the rougher stones above them led us to suppose that there were one or more steps before the opening.

The west wall of the cella had hardly been passed before great difficulties were encountered in the clearing out of the interior, for it was discovered that the west end of the cella had been converted into a cistern at some time after the partial destruction of the temple. The west wall and parts of the side walls had been removed to their lowest course after the cistern had been abandoned, but the filling of rubble concrete 1.50 m. deep, which underlay the cement floor of the cistern and part of the floor itself, still remained. This rubble filling contained fragments of sculpture of the Roman period and pieces of late inscriptions in Greek. The floor, of a cement made pinkish in colour by the admixture of crushed pottery, was a Byzantine variety of *opus signinum*, and is the floor mistaken by DENNIS for the pavement of the temple (cf. p. 7). We soon discovered that the interior had been entirely cleared before the cistern was made; for we found only the marble foundations of two interior columns 10 cm. below the level of the original pavement, which was of marble and had likewise been removed.

By the end of May two short lines of railway had been put in operation, one on the north side upon level No. 3 and one on the south side upon the lower level; the former was extended toward the middle of the cella to facilitate the clearing away of the rubble and concrete, the latter ran across the front of the Lydian Building and up through the south pteroma. In other parts of the digging carts were still used. But at this time for various reasons work in the excavations began to slacken. Labour was growing scarce as the harvests ripened, and we were obliged to concentrate all effort upon the completion of the house which we had begun to build well up on the rising ground to the east of the temple. Nevertheless a few labourers were kept at the temple, and, though the work progressed slowly, two important discoveries were made. The excavation of the north wall of the cella revealed, at first, one course above the foundations, then two courses, both highly finished on the exterior and interior, then a heavy torus moulding on the outside (Ill. 45), and finally a high third course, its inner face almost covered with a long inscription in Greek. This was the unique "Mortgage Inscription",<sup>1</sup> which established several facts with regard to the building; first, that it was the Temple of Artemis; second, that we were working in the treasury, or opisthodomos, of the temple; and finally, that this part of the temple was in use at least as early as the closing years of the third century B. C.<sup>2</sup> Just within the southernmost limits of the excavations an Ionic capital in nearly

<sup>1</sup> A. J. A. XVI, 1912, pp. 12-14.

<sup>2</sup> The mortgage document, mentioning ANTIGONOS, must have been made within the lifetime of his donee, say within 50 years after 303 B. C. But the mortgage inscription is probably still more recent by at least 50 years. M. HAUSSOULLIER, kindly informs us that, assuming Sardian epigraphy to have been uniform with that of Ionia, he would date our inscription "dans les environs de 200, avant ou même après". This agrees with the views of WILAMOWITZ and WILHELM that the date proposed in A. J. A. xvi, pp. 22-23, is much too early (see G. G. A. 1914, p. 89 note; J. O. A. I. xvii, 1914, p. 78), as well as with the following note written by Sir W. M. RAMSAY in 1914: "My view is that the inscription, on account of its importance, was engraved on the temple wall about 200 B. C., but that it was already a document of old times. It may probably have been engraved on a stele at first, and this was considered unsafe." Neither M. HAUSSOULLIER nor Sir WILLIAM RAMSAY doubts that the ANTIGONOS of l. 2 was the king who reigned from 306 to 301.

perfect condition was discovered upon the third level. This capital has been pronounced one of the most beautiful of its order known (Ill. 46). It is almost identical with the northernmost of the two that are still in place, but is a little more richly and delicately ornamented and on a slightly smaller scale. It has the same open egg-and-dart in its abacus, the same graceful scrolls and deep channels, the same leaves on its bolster, the same high relief carving on the volute band a little less well preserved, and, in addition to these beautiful details, inverted palmettes of most delicate design are executed upon the eggs of the echinus on one side.

Among the objects of interest discovered after the excavation of the great temple began were numerous fragments of sculpture, many inscriptions mostly fragmentary, and a quantity of coins almost all later than the fourth century after CHRIST. Just below the pteroma level, in the space between the antae, was found a large fragment of a figure that appears to have been sculptured in high relief, and to have been sliced off from its background (Ill. 47). The fragment includes the drapery, from shoulder to knee, and the left arm of a stout male figure slightly more than life size. Near by this another example of sculpture was discovered in the shape of a small headless draped



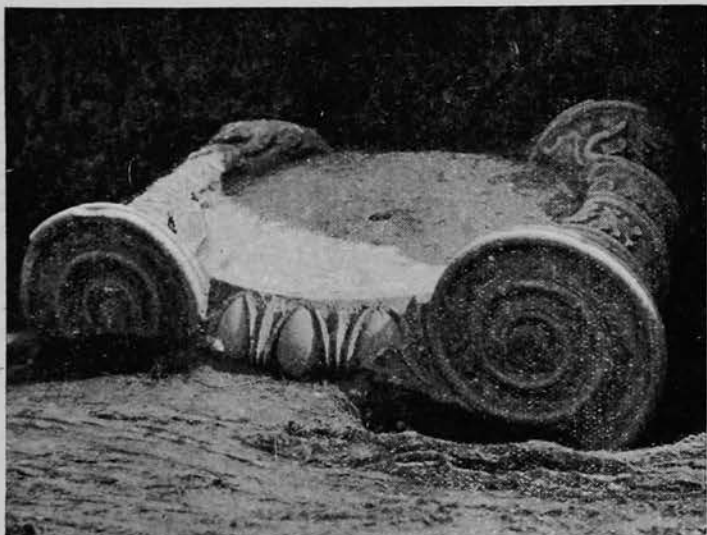
Ill. 45. North Wall of Treasury Chamber.

female figure in the round (Ill. 48), a little over a metre high, badly executed and severely weathered. In the rubble filling of the treasury chamber there came to light a life-size, headless, draped, male statue of a very common Roman type; the three pieces in which it was found fit perfectly together, and compose the body from neck to ankle. A socket where the neck should be shows that the head was inserted according to the late Roman fashion. Two marble feet were found in the same place, one probably belonging to the statue described above, the other of far finer quality with an openwork sandal of real beauty in execution.

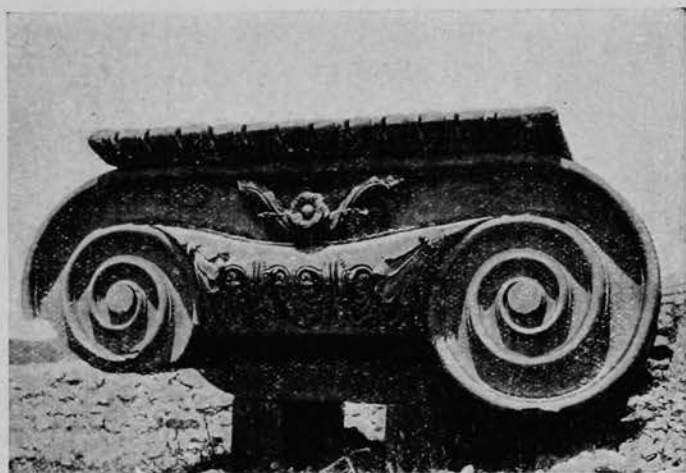
As has been already pointed out, finds of potsherds of any kind were rare in all the earlier stages of the excavations and on all levels. But when the removal of the earth below the level of the south pteroma of the temple began, in a depth of about two metres, between the foundations of the southern flank of column substructures and the foundations of the cella and anta wall, small fragments of pottery, seldom more than 2 cm. long, began to come to light in considerable quantities. A close examination of these fragments, as they appeared in the vertical face of the bank of earth which was being cut back, showed that they represented a great variety of fabrics and several different periods, all mixed together without any



semblance of stratification. It was soon apparent that all this earth was a filling, part of which had been excavated from below level No. 2, while the pits for the



Ill. 46a. The First Capital as it came to light.



Ill. 46b. The First Capital set upright.

lowest foundations were being dug, whereas other parts came from higher levels, and in many cases from more or less distant places in the vicinity. This later turned out to be true of all the earth upon all levels above level No. 2 in the immediate neighbourhood of the temple. Very deep pits and trenches had been excavated for the foundations and walls of the building, greatly disturbing the stratifications below level No. 2, while the excavated earth with its fragments of pottery had been mixed with earth from higher and later levels, mingling potsherds of widely different ages, and had been used as a filling between the foundations of the columns and those of the walls, and even between the rows of columns at the west end and between the antae. At a later period, when the deep trenches were dug about the old marble foundations for the insertion of concrete filling, the earth was once more disturbed and the pottery fragments still more mixed.

Long before the first season closed we had begun to find that it was becoming somewhat difficult to describe accurately the provenience of any particular object discovered in the excavations. The importance of keeping a record of the original place of finding of objects of all kinds, but especially of coins, was fully recognized; but it was often a lengthy process to write out in the "find-book" a description with reference to stationary objects, of the level, or height above a given level, of the spot in question. We therefore devised a scheme which greatly facilitated this task. In connexion with the detailed survey which was being made, the field of the excavations was divided up into squares by lines two metres apart. Upon these lines, on either side and across the end of the excavations, stakes were set up near the edge of the bank. The stakes were placed in pairs, one behind the other; those on the sides bore

numbers, those at the end letters (Ills. 41, 43 and 44). By this means it was easy to locate oneself at any particular point within the excavations. Thus, when an object was discovered in the earth, one had only to take his stand at the point where it was found and look toward the numbered stakes in one direction and the lettered stakes in the other, taking a sight upon the front and back rows of stakes, and to put



Ill. 47. Relief Statue found in West Porch of the Temple.



Ill. 48. Statue found at West End of the Temple.

down in the "find-book" the number and the letter, noting whether he was upon a line or between two lines, and the note would show the place upon the map within a square metre. Then an observation of the level, and the height above the level, would complete for each object a sufficiently accurate statement of provenience.

## 2. EXCAVATIONS IN THE NEKROPOLIS.

While the work was progressing on the site of the great temple, excavations on a smaller scale were undertaken in May, under the supervision of Mr. BELL, among the tombs in the Nekropolis across the Paktolos. Digging was begun in the steep, irregular, cliff-like slopes of a ravine on the south side of the hill directly opposite to the temple excavations, where there were unmistakable evidences of ancient burrowings in the hard-packed clay as described on page 35 (Ill. 21). The first tombs to be opened

here were high up on the slope, and were, with one exception, of a single type. This consists of a narrow passage, or dromos, longer or shorter according to the amount of erosion that has taken place on the slope, open to the sky at its beginning, and covered over at its end, where there is a doorway about six feet high closed by a large slab of stone or several smaller slabs. The doorway opens upon a chamber hewn out of the solid clay with pointed, double-pitched ceiling, and a couch, or double couch, also hewn in the clay, on either side of a narrow passage. At the end of the passage is a double couch, often a little higher than the others and approached by steps, or another doorway leading into a second chamber like the first<sup>1</sup>. The exceptional tomb, in place of a couch or a doorway at the end of the first chamber, had a stair descending to another passage which terminated in a chamber of the usual form. All of the tombs which were opened this first season were completely filled with finely pulverized soil which had drifted in; all had been rifled, probably in very early times, at least in the Greek or Roman periods of the history of Sardis; but several contained pottery, beautiful in form and good in quality, though entirely without painted decoration. With the vases in some of the tombs were found small bronze objects, such as flat mirrors well made but undecorated, rings and other ornaments, and, in one tomb, a bronze ring with an Egyptian scarab. Alabastra of the form common in Egypt were found in more than one tomb. In one of the obviously unrifled tombs three gold necklaces were found. The gold work is of exceptionally fine quality, one necklace being made up of delicate flowerlike units, and another representing peppercorns with berry, flower and stem. All this gold work appears to belong to a period considerably earlier than that of any of the objects unearthed in the temple excavations. In one tomb there was a sarcophagus of terra-cotta, of excellent workmanship though without ornament; the sarcophagus itself was sunk in the top of the couch, its high curved cover extending above the surface. It is plain that inhumation was practised here, and that the majority of the dead were laid upon the couches without coffins; but the discovery of a large vase filled with charred human bones, and of fragments of similar urns, showed that cremation was also practised, probably at some later period when the old tombs were opened for the reception of the urns without disturbing the original contents.

The most important discovery made in connexion with the excavation of the tombs was that of a stone slab bearing our first Lydian inscription. The slab was probably not in its original position, although it was carved to represent a door of four panels and was in use in the doorway of a tomb (Ill. 49); for the doorway was much larger than the slab, which had been used with other slabs of different material and of cruder form to close the aperture. But it was undoubtedly not far from its original place. The importance of this find lies chiefly in the light which the document throws upon inscriptions in similar letters previously discovered elsewhere than in Lydia and in other parts of Lydia itself, and assumed to be specimens of the ancient Lydian language. Most of these other inscriptions have been fragmentary, like the "Croesean" inscription from the old Temple of Artemis at Ephesos, now in the

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<sup>1</sup> Plans of these tombs are given in Chapter VIII.



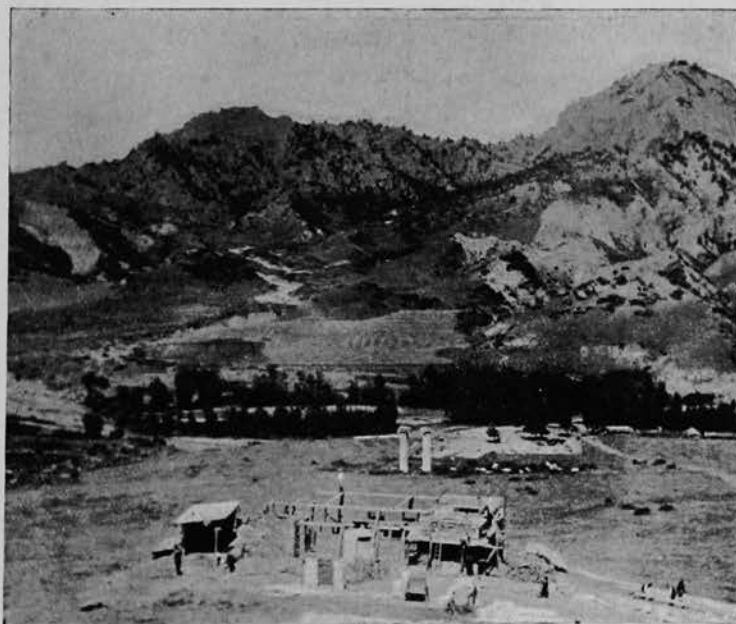
British Museum; the bilingual inscription on a column-drum from Pergamon now in Berlin, and several fragments found in Lydia by KEIL and VON PREMERSTEIN. The discovery of this complete text, as the first, and for a long time the only inscription from the tombs of Sardis, in characters already believed to be Lydian, was all but complete proof that this was actually the language of CROESUS. A photograph of this inscription and a commentary upon the text will be found in Volume VI of these Publications, Part I, Chapter III.



Ill. 49. Lydian Inscription found in Nekropolis.

### 3. THE BUILDING OF THE HOUSE.

Two months spent in tents had convinced the excavating party of the impracticability of tent life. As the dry season advanced it became more and more difficult to keep the tent pegs securely in the ground, and high winds often prevailed. Tents frequently were blown over during the day, and

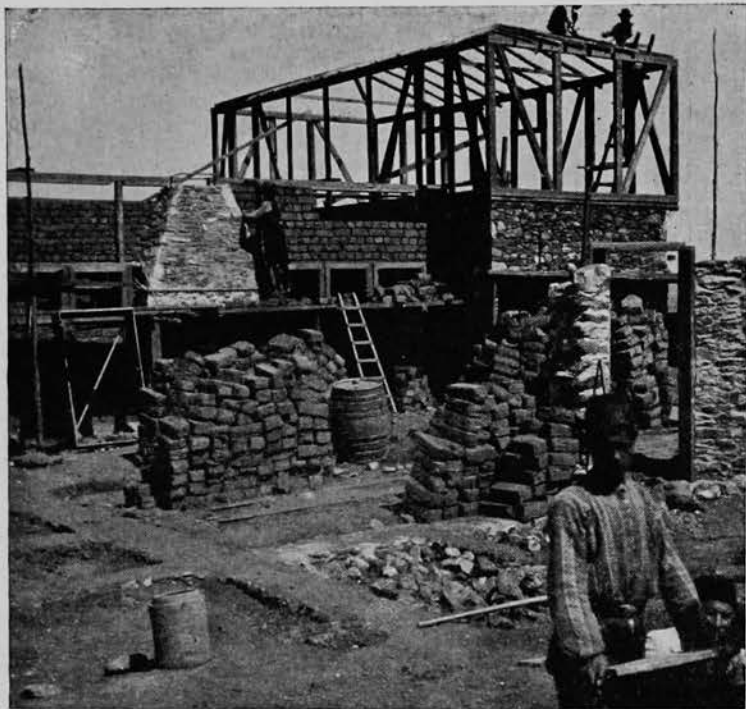


Ill. 50. The Excavation House in Process of Erection. View from East.

many nights were spent in anxiety lest our shelters should be wrecked. A windstorm of several days' duration, blowing from the direction of the excavations, had filled all our belongings, our clothing, our food, our books and papers, with fine sand. Then too the number of fragile and precious objects was increasing, and the shelves in the great double tent were quite filled with antiquities, so that the overturning of that tent would have involved serious loss. We decided to build a house.

The site selected was in the highest part of the trapezoidal field of the excavations (Ill. 6), almost directly below the Akropolis, at the foot of a small conical hill, not unlike a tumulus in shape, but really a part of the fallen Akropolis. This site gives a fine view to the west overlooking the excavations

toward the Nekropolis Hill (Ill. 50), to the southwest up the valley of the Paktolos, and to the northwest far out over the plain of the Hermos, including the river, the long level ridge of Bin Tepé, and the mountains far beyond.

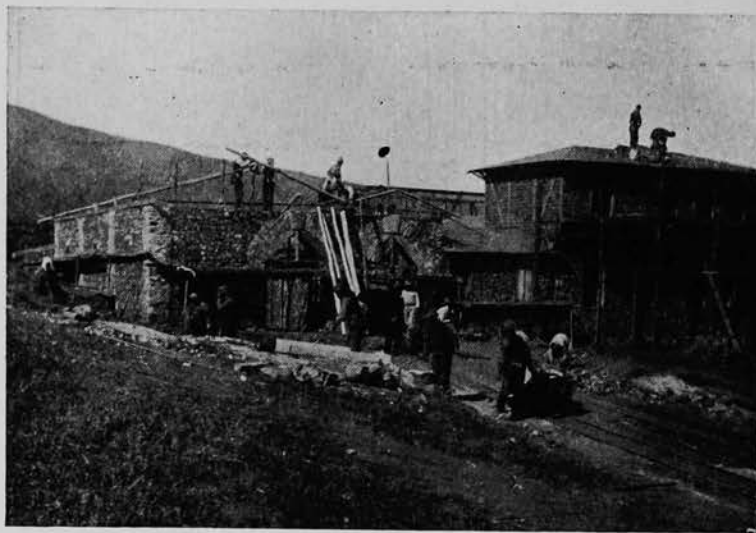


Ill. 51. The Excavation House on June 16th, 1910.

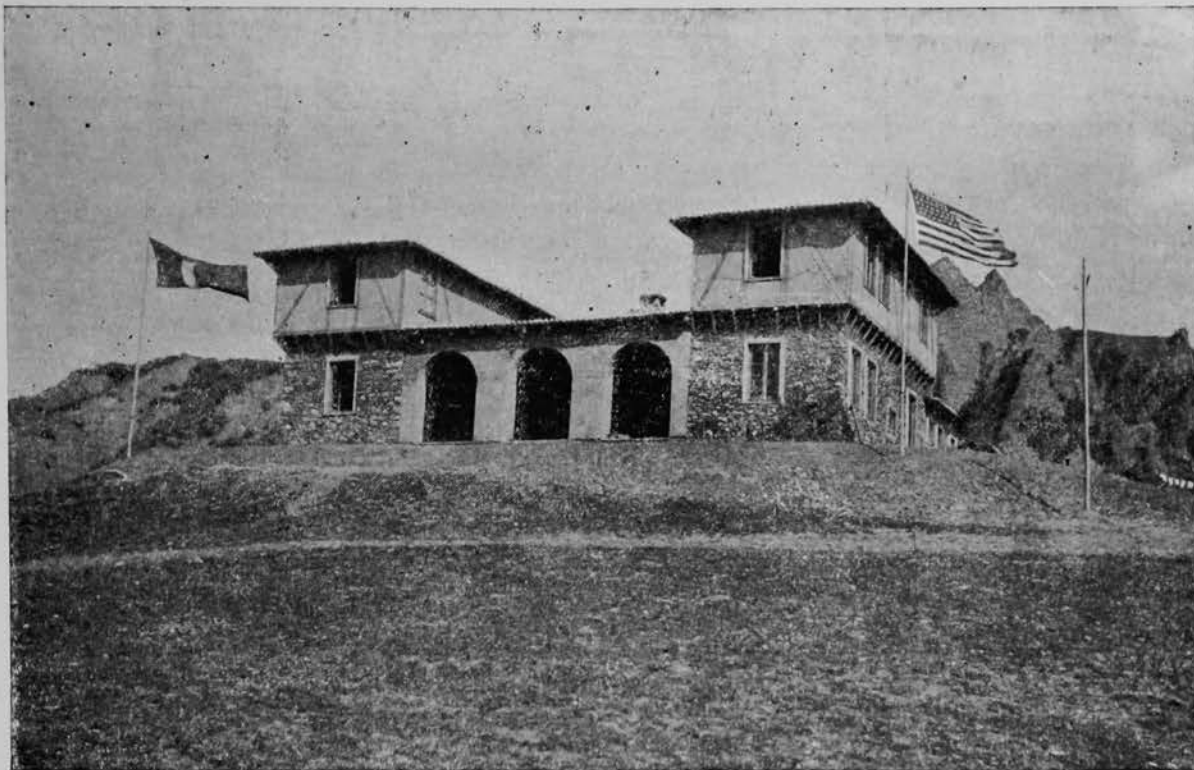
The plan included a large court-yard, with living quarters in front, toward the west, a long storehouse for antiquities on the east, kitchen and servants' quarters on the south, and small bedrooms on the north. The main block of the building was to comprise a large living room one storey high with two-storey wings at the ends to contain an office and seven bedrooms. The rest of the structure was to be one storey high. A broad arch was to afford access to the court yard, and an arched loggia was planned to connect the two wings, extending in front of the living room.

We decided to build this

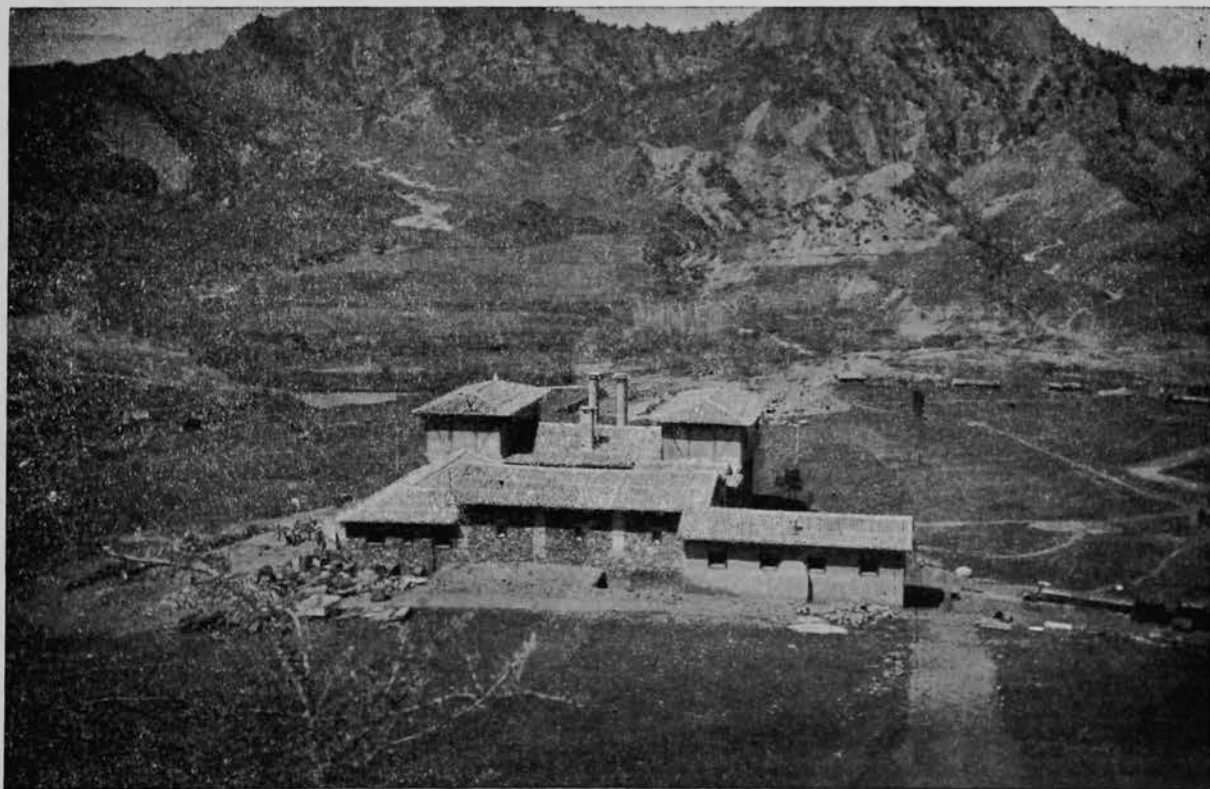
house so far as possible with the aid of local labour, and to employ native building material (Ill. 51). The excavations for the foundations were made late in May, and the house was rushed rapidly to completion. The lower storey of the two wings, all the walls of the store house, and the arched entrance to the court yard were built of stone from the river bed, laid in mud plaster, with the exception of the outer and inner arches of the two entrances which were laid in mortar (Ill. 52). All the other walls were made of mud brick manufactured on the premises. The upper storey is a frame structure of roughly dressed timbers with considerable over-hang, filled in with mud-bricks, the roofs are all of poplar trees boarded over, and covered with tiles which were baked in the plain within sight of the house. Nothing was brought from a distance except the boards for the roof, the



Ill. 52. The Excavation House on June 22nd. View from N. E.



Ill. 53. The Excavation House on July 9th. View from S. W.



Ill. 54. Excavation House, View from the Knoll to the East.



floors and interior woodwork, the frames and glass for the windows, and the hardware. The great chimney with a large fire place in the living room was built of stone laid in mortar, including many ancient architectural fragments found on the surface. The court-yard wall of the "museum" is studded with fragments of inscriptions brought in from various places in the neighbourhood. The loggia is composed of three arches of mud-brick (Ill. 53). These, and all the mud brick walls, including those between the timbers of the upper storey, and all the interior wall surfaces, were plastered over with mud mixed with lime and a little ochre to give a yellow tint. This surface was rubbed down almost to a polish in the native manner. The court-yard was paved with small rounded stones from the river bed in a simple pattern of white and black. Later on, a pair of small columns with late Ionic capitals, all found lying detached in the excavations, were placed in the middle of the courtyard.

We were unable to find native Turkish labour for any of this work except the heavy unskilled part. The skilled labour was all brought from the neighbouring town of Salihli. The stone-masons and brick makers and layers were mostly Cretans and Greeks from the Islands; the wood-workers Greeks of the vicinity. Among them were some excellent craftsmen, and the building was brought to completion with almost incredible swiftness and thoroughness. The labourers of all classes showed the greatest interest and enthusiasm; they thought that they were building a truly American palace, while we thought we were planning a very Oriental but simple habitation. Perfect harmony prevailed among the workers, and their relations to us were most pleasant. The Turks seemed to take it for granted that they could perform only the hard manual tasks, while the Greeks and Cretans did all the work requiring skill. They said that it always had been so, and always would be, and when I asked our Turkish neighbours why they did not have their sons learn trades so that they could command the higher wages of the Greeks, they replied that they were content to be simple farmers, and that the Greeks had always done these things for them. This was almost five years before the war and the attempted expulsion of the Greeks from Asia Minor. It seems likely that the Turkish communities are just as dependent on the Greeks, in these matters and many others, to-day as they were then, and will remain so for many generations. I should not be so strongly convinced of this had I not done my best to find Turkish skilled labourers in the town of Salihli, a place of ten thousand inhabitants.

By the end of the first week in July the building was finished (Ill. 54). Much furniture, such as cupboards and chests of drawers, had been made on the spot by our wood-workers. All our other furniture and all the antiquities were moved into the new quarters and we were ready to lock the doors for six months. Only the kitchen-range and waterpipes, the shower-bath and other plumbing fixtures, remained to be brought and put in place the following year. Probably few houses of the extent and solidity of this Excavation House have been built in less than nine weeks. Following a fashion set by more experienced excavators, we called the new house the Villa Omphale, after the most distinguished of the mythical heroines whose history is bound up with that of ancient Lydia.

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Ill. 55. The Excavations in the Snow of 1911.

## CHAPTER IV.

### THE SEASON OF 1911.

#### 1. EXCAVATIONS AT THE TEMPLE OF ARTEMIS.

In the closing days of January 1911, the members of the expedition arrived in Smyrna to encounter the most severe winter weather which that city had known in nearly forty years. Intense cold and heavy snow had almost paralyzed the life of the city. The sufferings of the poorer element of the population were very great; even the well-to-do found it impossible to keep their houses warm. The train service was suspended on account of snow, and almost all transportation was at a stand-still. Nevertheless we were determined to make the journey to Sardis, and, on the first of February, we started by train.

The personnel of the party had changed a little since the first campaign.

Mr. WILLIAM H. BUCKLER had come out as assistant director in charge of inscriptions and of the excavation of tombs. Mr. COOK, whose services had been invaluable during the first season, was detained by business from coming out the second year, and his place as chief engineer was taken by Mr. STOEVEER with whom was associated Mr. CHARLES N. READ, C. E. as assistant engineer and Mr. WILLIAM R. BERRY; Mr. BELL again was in charge of the catalogue. FAKRI Effendi was the Imperial Commissioner.

The journey to Sardis was accomplished under great difficulties, consuming seven hours in an unheated train with the thermometer at 20 degrees Fahrenheit. Throughout the trip we could observe how the country people were suffering from the unusual weather, and we saw that the olive groves as well as the fig trees for which the region is so famous, and the orange and lemon gardens had been destroyed as if by a blight, for all were black and shrivelled.

We found Sardis colder even than Smyrna, as might have been expected owing to its greater altitude and its distance from the sea. The deep snow impeded the transportation of our goods from the station to the house; but finally we were able to install sufficient bedding for the night.

More snow fell within forty-eight hours, making the depth about two feet on the level; the excavations were all but buried (Ill. 55). Several days were consumed in putting the house in order, and in transporting things from the station. Game was plentiful, some of our party went shooting over the snowclad hills, and by them and by the natives our larder was kept well supplied with woodcock, partridges and other birds.

It was apparent from the first that work at the temple would be delayed for several days; but an extensive campaign at the Nekropolis had been planned, and the steep hill-sides where tombs abound were less deeply covered with snow and more sheltered from the cold winds. Moreover tomb-digging of the kind required at Sardis offers a more protected form of work, and therefore the excavation of the tombs was begun without delay, and all efforts were concentrated upon it, until digging at the temple site could be resumed on February 16th. Work at the tombs however continued without interruption until the end of the season.

At the temple we started by clearing away the snow which had drifted deeply in places, and by putting the railway equipment in order. Then, with an increased force of labourers, work was begun on a general plan of widening the excavations as well as pushing them eastward. The entire width of the main excavation in 1910 had been only a little more than 50 metres, not sufficient to embrace the entire width of the temple, and a little less than one third of the actual area of the temple had been unearthed. It was planned now to cut back the north and south faces of the digging so as to embrace both flanks of the temple, with sufficient space on either side for the accommodation of three lines of railway on three terraces, one for each of the three levels upon which it was necessary to work owing to the increasing height of the east face. The execution of this plan was begun with a force of an hundred labourers, and continued for several weeks. The entire opisthodomos, or treasury, of the temple was soon cleared (Ill. 56). The dividing wall between this and the cultus chamber was found to have been destroyed almost to its foundations.



This had been done in connection with the conversion of the entire cella into a reservoir; for the cement floor was found to be continuous on one level through the treasury and the cultus chamber. But the original floor of the cultus chamber had been over a metre higher than that of the opisthodomos. The rubble and concrete filling in this latter division of the temple was almost two metres deep below the cement pavement, and the two interior columns here had been removed to their



Ill. 56. Interior of Treasury Chamber, looking North.

foundations, which were about 10 cm. lower than the upper level of the marble pavement which had been destroyed.

In the long cultus chamber, the removal of the interior features had been even more complete. Here, not only the columns, but in some cases, the upper courses of their foundations had been taken out. The plinth of one of the columns was found practically in place, several piers were complete, but others had had their uppermost courses removed, and the iron clamps that held them together, with their leading, were disclosed. The cutting away of the rubble and concrete filling below the bottom of the cistern was a slow and toilsome operation, and the filling contained almost nothing of interest. But above the cement bottom various objects came to light, objects which apparently had been thrown into the cistern at the time when it was abandoned, and are not necessarily to be considered as having been within the temple. The most interesting of these, and at the same time one of the most disappointing, was a colossal head in a completely ruined condition (Ill. 57) preserving only the throat, bearded chin, mouth, and part of one cheek. With it were found

many fragments of locks of hair which, with the beard, strongly suggest the technique of the Pergamene sculptures. This defaced male head is the more interesting because



Ill. 57. Colossal Head found in the Cella.

it was found not far from the spot where Mr. DENNIS found a colossal female head (Ill. 2) in the trenches which he dug at the temple site in 1882, as described on p. 8. The concrete bottom of the cistern is the same pink plaster pavement which DENNIS took to be the original pavement of the temple, which in fact was not in place but had been originally almost two feet lower down. The coins found in or near the bottom of the cistern were of the ninth century or later, giving an indication of the period during which the cistern was used.

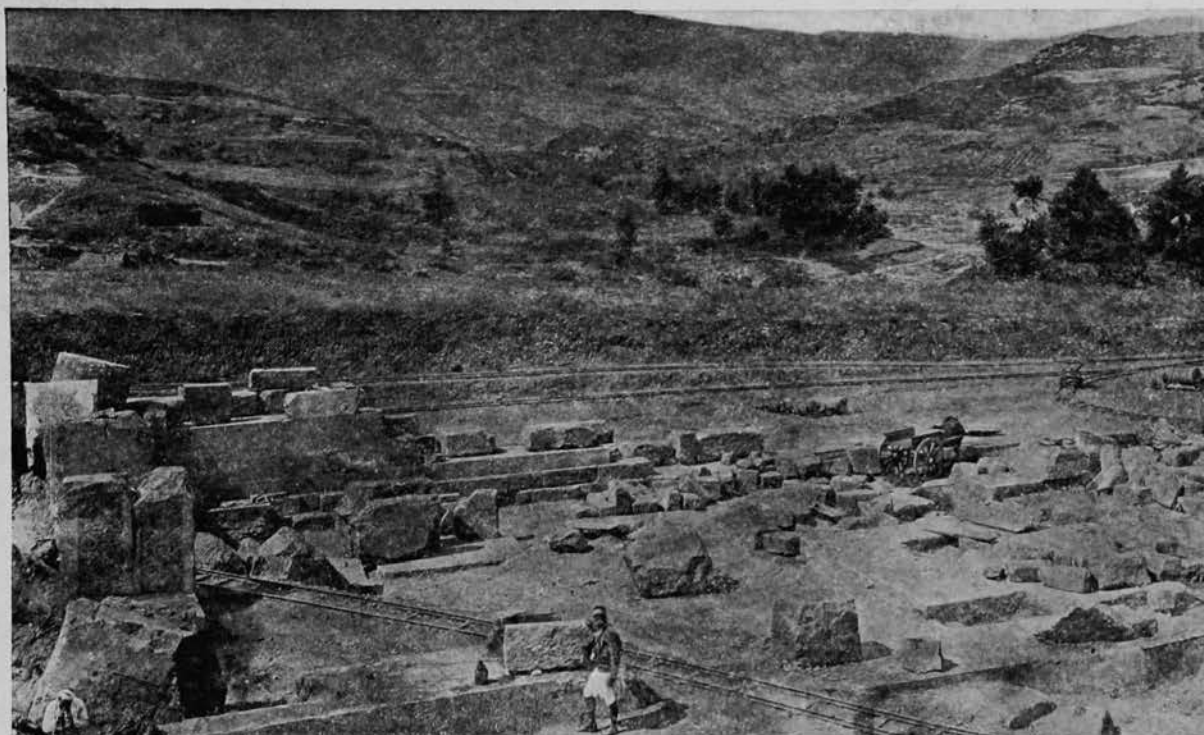


Ill. 58. Fragment of Ornament found in the Cella.

Between the second pair of interior columns from the west end of the cultus chamber a solid mass of concrete was found below the concrete level of the bottom of the cistern and surrounded with the ordinary filling of broken stones and rubbish. Next to this, toward the east, directly east of the second pair of column foundations we discovered one entire course of well fitted marble blocks extending from wall to wall, which had constituted the foundation of a light wall or barrier dividing the naos into a larger and a smaller compartment. The wall, if such there was, could not have been very high; for this one course below the pavement level was its only foundation. At the same time a few interesting, though small, bits of architectural ornament were found; but it is impossible to know if these were connected with the barrier. One is a fragment of a large egg-and-dart moulding with a tall slightly curved

band above it carved with anthemions of anthropomorphic design (Ill. 58).

Beyond this, and on a lower level, we came upon a massive structure about six metres square, composed of blocks of purple sandstone, like that which appears in the walls of the Lydian Building, laid in two heavy courses, the stones of which were bound together at intervals with iron clamps. This massive structure (Ill. 59) occupies a position corresponding to that of the "basis" discovered by D. G. HOGARTH in the Artemision at Ephesos. It probably was a construction of similar purpose — perhaps the basis of the great statue of Artemis —, and like that at Ephesos undoubtedly



Ill. 59. Interior of the Cella, from the Northeast; "Basis" at extreme Right.

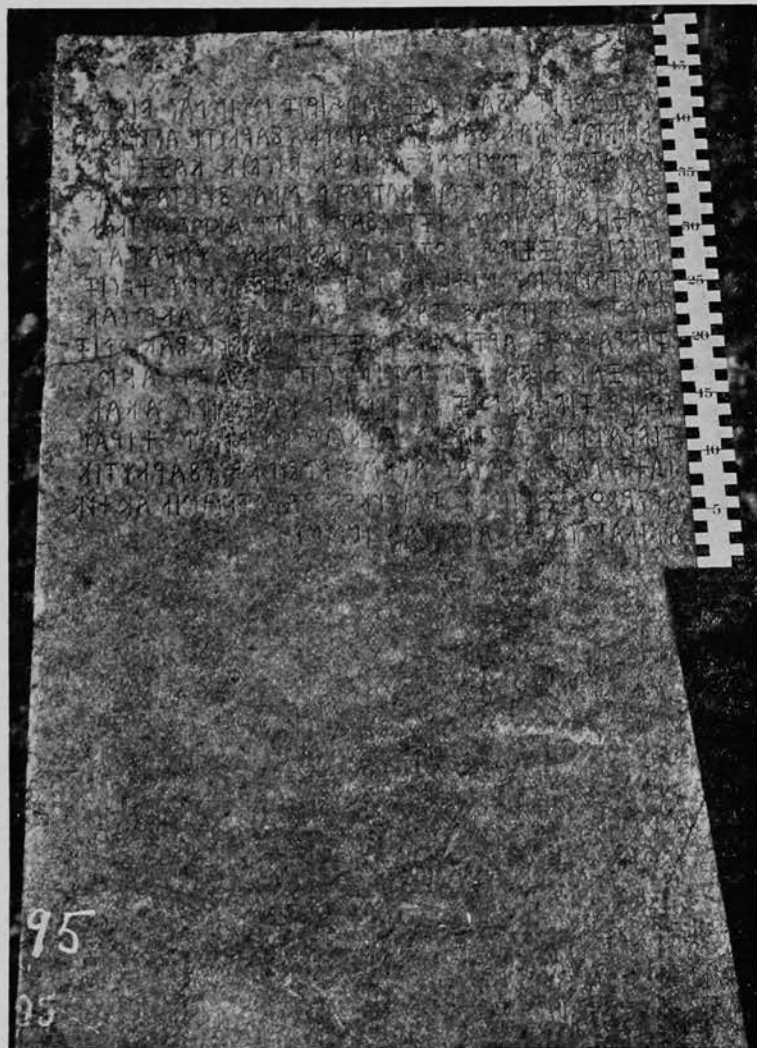
belongs to an older temple than the one built of marble. This indeed was the first definite sign of an earlier temple of Artemis at Sardis.

While this work in the ruins of the temple, at the east face of the excavation, was going on, the cutting back of the sides progressed well but a little less rapidly. As I have said above, there were three lines of railway, on three terraces, at either side of the temple area; a fourth was added presently at the far eastern end. All the lines converged to one level near the line of the beginning of the excavations, and ran out upon a common dumping ground. The lowest lines on either side were continued on the old level No. 2 and were used comparatively little except for widening the space on either side of the Lydian Building. Two of the other lines were laid upon the level of the temple platform, and the remaining two from one to two metres higher. The south side was cut back easily, for that was the lowest part of the field of excavations; but the field sloped rapidly upward from the southwest toward the northeast angle, as described on page 16, and the north side was worked with much more difficulty. The soil here was far deeper and increased in depth toward the east,



where the upper lines of railway had to carry off, as the season advanced, from three to seven metres of accumulated soil, most of which consisted of earth and sand washed down from the Akropolis and held nothing of archaeological value.

The lower levels however contained much that was important; in level No. 2, known as the "Lydian" level, a row of bases for stelae was discovered on the north



Ill. 60. Stele with Lydian Inscription.

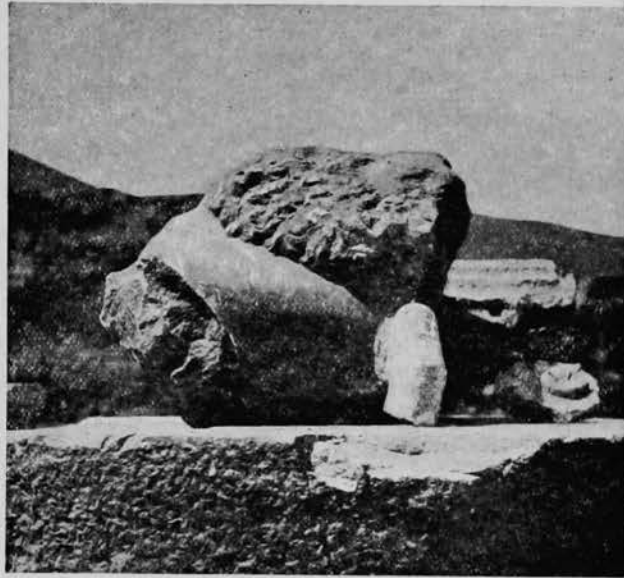
side of the Lydian Building and about 8 metres from it, extending 20 metres toward the west, and almost exactly parallel with the row of bases discovered on the opposite side. Directly in front of one of these bases, and lying flat, face downward, on a level with the top of it, was a complete stele bearing a long Lydian inscription which justified the name we had given to the level and the building. The stele, (Ill. 60) of well dressed crystalline marble, had fallen forward when the level of earth about it had accumulated to the height of its base, about 85 centimetres. The tongue at its foot, which had been inserted into a socket in the top of the base, remained intact, and the base had been split in two at the time when the stele fell forward; but the lead which had held the tongue firmly in place was not discovered, suggesting that the

stele had been overthrown intentionally at some distant date by persons in search of lead. Nevertheless other stelae-bases still retain the tongues of stelae well leaded in; in most cases only the stelae were carried off, and the one just mentioned was the only one left. It seems improbable, from many indications, that these stelae-bases were all buried at the time of the completion of the present temple. It is quite possible that this stele was originally provided with an ornamental top, an anthemion perhaps, executed in a separate piece of marble and fitted over the top of the tall upright slab; for fragments of such top-pieces have been found in the excavations.

On a much higher level, and a little to the south of the flank of the temple, another mutilated colossal male head was brought to light, even more disfigured than

the other (Ill. 61). It shows the neck quite completely all around, but the beard and all the features have been intentionally battered away, leaving a shapeless mass of marble. Near by was discovered part of a hand of the same giant scale as the head and, later on, the upper joint of a huge thumb; these fragments showing conclusively that the heads belonged to colossal statues which probably stood near the temple and were broken up in the process of lime making. Lime-kilns in considerable numbers were disclosed on at least three different levels, one showing many early Byzantine coins, one with coins of the late concave type, and the other not far below the surface.

Greek inscriptions also continued to appear, chiefly on the north side of the temple, none of them in situ, and none shedding any light upon the building. Fragments in Greek of the early imperial period were found, together with broken bits of sculpture, in the rubble filling beneath the concrete bottom of the cistern in the temple cella.



Ill. 61. Second Colossal Head Found in the Cella.

A tall statue base, or perhaps only a rectangular stele,<sup>1</sup> with a Greek inscription upon it, and two stones which had been parts of a wall, not ordinary temple wall, bearing texts in Greek of the imperial epoch, were discovered lying loosely between the steps at the west end of the north side of the temple and the foundations for columns in front of them.<sup>2</sup> Some of these inscriptions refer to priestesses of the temple, and may prove useful in reconstructing its history.

As the work advanced it became evident that large parts of the north side of the temple, such as walls and columns, had been standing during the Middle Ages, and had fallen, or had been thrown down, during comparatively recent centuries, to be covered by the later deposits of débris washed down from the Akropolis. Details of these parts, some of them weighing several tons, were now found suspended, as it were, in loose earth, high above the solid level of the temple platform, constituting great obstacles to excavating and a constant menace to the safety of the labourers. But fortunately more elaborate equipment was on the way, and its arrival in Smyrna was announced before these obstacles had caused serious delay.

In addition to an extra supply of steel waggons, we had ordered a locomotive engine and a powerful crane to take the place of the simple lever-jacks which had done all the lifting during the former season. The arrival of this new equipment at the station of Sart involved fresh problems. Our first consignment of rails, sleepers, and waggons had been brought to the excavations by ox-teams and horse-carts; we

<sup>1</sup> See *A. J. A.* XVII. 1913, p. 358, no. 6.

<sup>2</sup> *ibid.* pp. 354-355, nos. 4, 5.



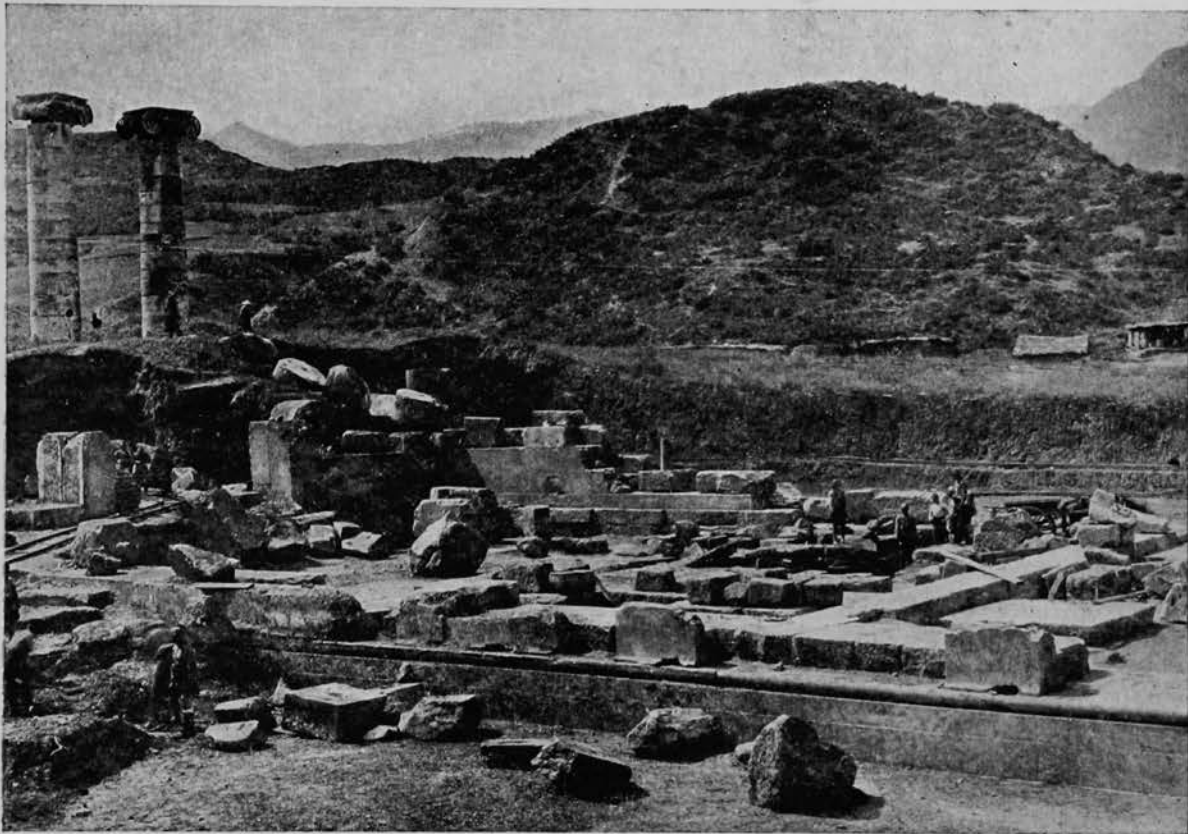
proposed to transport our new, much heavier, equipment, the locomotive and the crane, by building a temporary railroad from Sart along the river to the excavations, and to compose trains made up of the steel waggons in which all the other things could be brought up. But it soon appeared that the construction of a railway, however small and temporary, would interfere with the Turkish railway *Régie*, and would involve us in interminable troubles. After considerable discussion it was decided that we might be permitted to build an hundred metres or so at a time, and move this section along, so that at no time would there be a complete railway connexion between the station of Sart and the village near the ruins. The engineering staff of the excavations, without any outside assistance, constructed the road bed along the Paktolos from Sart to the excavations, assembled the parts of the locomotive and the crane, put the waggons together, made up a train and loaded it with the extra rails and other equipment. This train, by the power of the locomotive, was moved forward a little over an hundred metres; then the labourers would pick up the line in long sections and move them in front of the train, bolting them together, so that the train could make another stage on its forward journey. Exactly ten days were consumed in this entire operation, and on the eleventh the locomotive, adorned by the labourers with evergreens and flowers, brought the train triumphantly into the excavations, amid shouts and rejoicings on the part of the inhabitants.

With the new equipment installed, plans were immediately put in operation to set free the entire temple structure by the end of the season if possible. The number of labourers was increased to nearly two hundred and fifty. It never had been planned to use the locomotive for the ordinary hauling of trains of waggons. The loaded waggons went down by gravity, each in charge of an "arabagee", or brakeman, and it proved not only more expeditious, but more economical, to have them hauled back by horses, in trains of from five to nine waggons according to the steepness of the grade. The main use of the locomotive was to move the heavy crane from place to place about the works for the lifting and carrying away of the huge blocks of marble which were daily becoming more numerous toward the eastern end of the temple. With these out of the way, the progress of the excavations was much more rapid. By the first of June, the space for eighteen of the twenty columns on the north flank had been cleared, and the north wall of the cella was found to preserve its lower courses and its heavy exterior base moulding as far as the anta, where two more courses were discovered in place. While the work was proceeding along the north wall, near its eastern end, a mass of marble blocks was excavated lying about a metre above the pteroma level (Ill. 62). It was evident that these blocks were from the cella wall and that they were in process of being broken up for lime when, for some cause now unknown, this destructive work was abandoned. One of these blocks was slightly tilted up against another, and, close under the sharp angle thus formed, we came upon a compact mass of copper coins. The coins, 216 in all, had been contained in a sack; for the imprint of its fabric was still plainly visible in the corrosion on the outside of the mass. This sack of coins was undoubtedly a hoard which had been secreted beneath the marble block, perhaps by one of the labourers engaged in the work of breaking up the temple wall. When the corroded mass had been separated



the coins were found to be in a good state of preservation. All were Byzantine coppers of the end of the sixth and the beginning of the seventh century. The earliest was a coin of JUSTIN II, dated 569, the latest was one of 203 coins of HERACLIUS, dated 615.<sup>1</sup> Therefore it would seem that the deposit was made late in 615, or very soon after, and this would fix the early years of the seventh century as the first important period for the intentional destruction of the temple.

The cella was entirely cleared out (Ill. 62), revealing the foundations of ten interior columns, five on either side in the cultus chamber, and the lower part of the jambs



Ill. 62. Interior of the Cella. View from the Northwest.

of the great east portal, with the walls on either side of it, rising to a height of four or five metres. The threshold of the portal is set over a metre higher than the level of the pteroma, and must have been approached by steps. The doorway had been walled up with old bricks laid loosely in clay, probably against a bank of earth which buried the temple at this end, when the cella was converted into a cistern; for this wall of brick had almost completely disintegrated before it was hidden in the later deposits. The south wall of the cella, which was preserved only in foundations in the part excavated in 1910, rose gradually course by course during this year's digging until a splendid anta five metres high was reached. The foundations of seventeen of the twenty columns of the south flank were now visible, the eighteenth

<sup>1</sup> cf. H. W. BELL in *Sardis*, XI, p. viii.

being represented by a column preserving almost half its original height, the nineteenth by another complete foundation pier, and the twentieth by a second truncated column which marked the southeast angle of the peristyle. Between the sixth column from the east end and the cella two monolithic limestone shafts of two small columns were found standing erect upon crude bases. Their rough foundations, laid on soil over a metre above the pteroma level (Ill. 63), showed that they had no connexion with the original structure of the temple.

The advance had been rapid on all sides up to this time, but from the first of June onward far greater obstacles and difficulties were encountered than ever before,



Ill. 63. The South Wall of the Cella, near the East End.

so that the possibility of extricating the entire temple before the close of the season seemed more and more remote. Not only had the depth of the excavations increased to about ten metres, but the masses of fallen building blocks and ponderous architectural details were becoming more numerous and more confused (Ill. 64). Then too there remained that great aggregation of fallen column-drums upon the surface to the north of the two standing columns. These we had decided to keep as near their original positions as possible; we wished to place them near the bases of the columns to which they belonged. They presented a difficult problem of temporary removal while the earth below them was being excavated. The entire east end of the temple plainly had been the last to be demolished; the dismembered details still visible had fallen within a century and a half. But we were finding that many other parts, including walls and columns, had collapsed a century or more earlier, and were hardly more



than lightly buried beneath the surface, which meant that they were still several metres above the solid platform of the temple upon which they were finally to rest. Near the southeast anta, just below the surface, lay complete the gigantic block of architrave



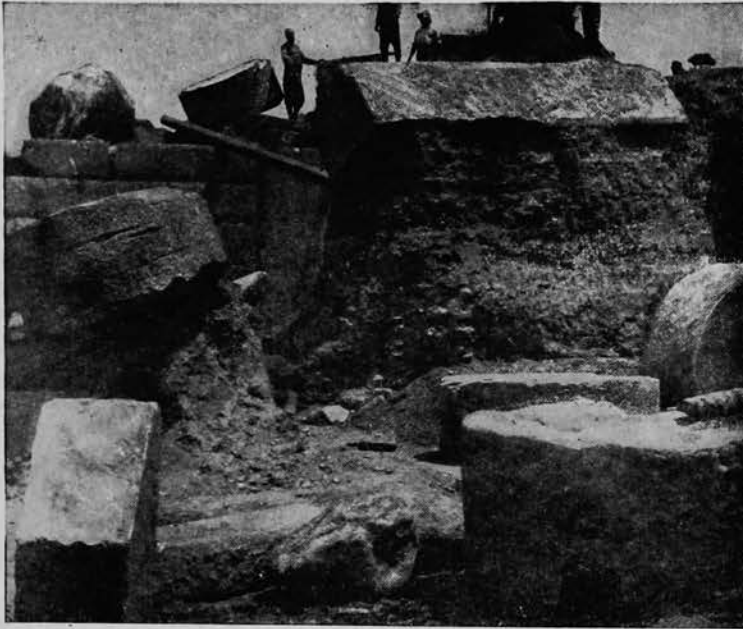
Ill. 64. Excavation in the East Porch. View from the North.

which some of the earliest travellers had seen in place upon the two standing columns (Ill. 65). This is a piece of marble 5.53 metres long and weighing twenty-five tons. The capacity of our crane was twenty tons, quite sufficient for ordinary purposes, but useless for this block. We decided to leave it temporarily upon a sort of high island and excavate around it. The space between the antae and all the area of the east porch was found to be full of enormous drums of fallen columns, broken capitals and architraves, and precious details of the great portal (Ill. 66), all suspended in loose earth. Several of the great drums were set upon the top of the south anta wall and the west wall of the cella (Ill. 67); a fine moulded block from the cap of the anta was placed upon the part of the anta which remained, and a big piece of architrave was set upon the north anta: all this before the level of earth was lowered around them, so that they were either slid or rolled into position.

By the end of the season which closed on June 28th more than half of the east porch of the temple had been cleared out nearly to the pteroma level, and the



base of one of the standing columns had been at last revealed (Ill. 68). Directly east of the southeast angle column and the one next to it on the north, and almost flush with the outer faces of the two columns, a high brick wall was encountered with



Ill. 65. Great Architrave Block found near Southeast Anta.

a doorway in it between the columns. In the space directly before the temple portal, between the antae, the huge consoles and other features of the portal were found somewhat mutilated, but sufficiently well preserved to warrant a complete restoration of the great entrance — more complete perhaps than is possible of any doorway of its age and style with the exception of that of the Erechtheion. East of the north anta a column preserved to half its height was unearthed, and to the east of this a similar truncated column. On a line

with this, on either side of the main axis, and in front of the portal, two highly finished fluted columns began to appear (Ill. 69). These beautiful shafts, standing to about half their original height, are of slightly smaller scale than the others. They have torus bases carved with delicate overlapping upright bay leaves, above two deep scotias. These bases are set upon cubical pedestals a little higher than the level of the threshold of the main portal; but the pedestals were not completely excavated (Ill. 69).

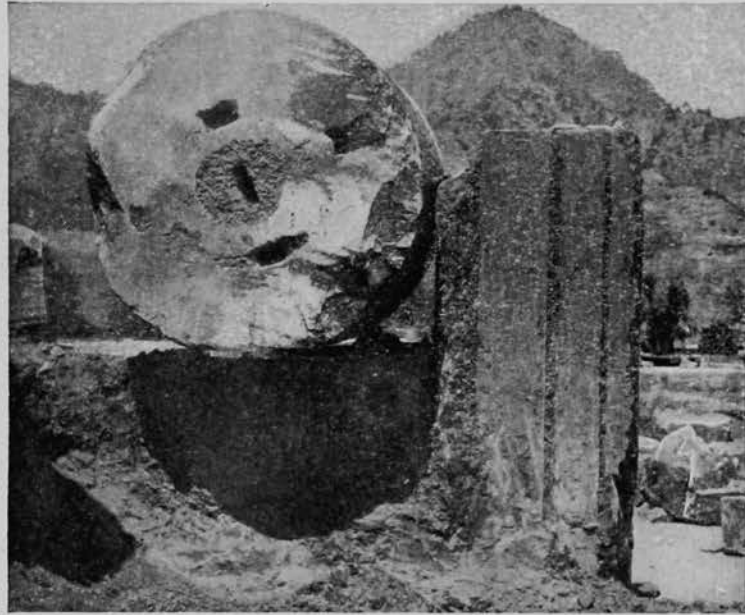
After removing many obstacles, like capitals and broken drums of columns and great fragments of architrave, and working against a sheer precipice of earth nearly ten metres high, we reached the base of the more southerly of the two standing columns



Ill. 66. Fragments at East Portal.

on June 17th and one column could be seen in its entirety (Ill. 68). This was the

second time in many centuries that this base had seen the light, for it was excavated on one side by MENDEL in 1904. But directly beyond this, and immediately above the two fluted columns mentioned above, lay the troublesome piles of column drums — the wreck of the five remaining columns of the east porch —, and work had to be halted at this point. A scheme was then set on foot to solve the problem of removing the mass of fallen drums that lay on the surface. A line of railway was laid directly to the east of them, and was brought around far beyond the southeast angle of the temple, and along the southern edge of the excavations to a dumping place at the river-side. A trench was dug beside the railway line at the east of the temple, and the earth was thrown into the waggon



Ill. 67. Column-drum set on East Wall.

and carried away. Then the rails were taken up and laid in the bottom of the trench, the earth on either side was cut away and another trench was excavated into which the track was again lowered. This process was repeated until a wide and deep excavation extended all across the east end of the temple in front of the heaps of fallen drums (Ill. 70). It was planned to roll the drums one by one into this trench, which would place them well to the east of the temple, to excavate the area below their old resting place, and then roll them back and downward to the bases of the columns where they were to remain. But the end of the season had come, and the execution of the plan had to be deferred until another year.

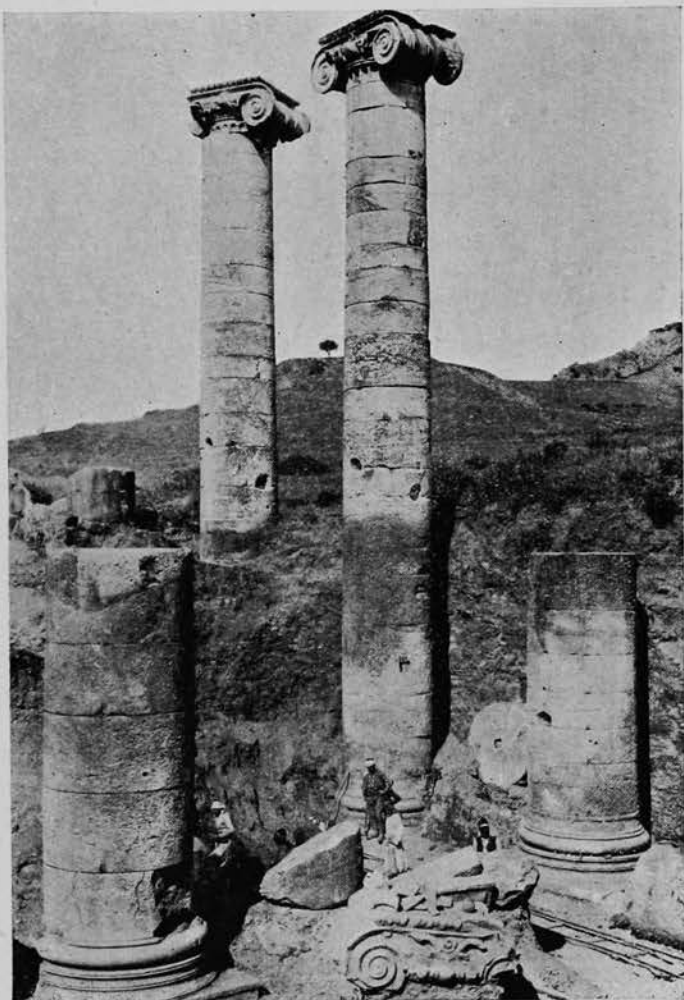
Although the excavation of the temple was not complete at the end of the campaign of 1911, various facts with regard to it had been made plain. The temple was preserved almost exactly in proportion as it had been deeply buried. The plan of the building was now clear, a pseudo-dipteros, (that is, a plan providing for two rows of columns all around, but omitting the inner row of columns on the sides), with eight columns at either end and twenty on the sides, the east and west porches being three columns deep, with a broad, deep space between the antae uninterrupted by columns. It was further evident; first, that the present temple was never entirely finished in the matter of small details, though it was in use at least as early as the end of the third century when the long inscription was engraved upon the walls of its treasury; second, that the almost completed temple was undergoing repairs at the time of its final ruin, and that these repairs amounted almost to a reconstruction of the columns of the east porch, where many had been taken down and their shafts



rebuilt, usually to receive old capitals, but in some cases to be provided with new ones, poor copies of the old, the new shafts remaining unfluted; third, that the western end of the temple, the part least well preserved, had not experienced such elaborate

repairs if any at all, for here the details of the columns are all highly finished; and fourth, that the demolition of the building had not been brought about solely by natural causes, but by the hand of man intentionally and slowly during many centuries.

It was hardly to be expected that statues or inscriptions in considerable numbers would be found in a temple which had been cleared out to serve as a cistern, and which was the site of numerous lime kilns the main food for which would be just such objects. Many of the fragments of sculpture and inscriptions had been found in the filling below the bottom of the cistern; although a few of these things, like the Lydian stele, had been discovered on the lower levels and in situ. Coins were found in abundance throughout the season and served, as formerly, as guides to the age of different levels. They are for the most part of bronze, Hellenistic, late Roman, and Byzantine; for the

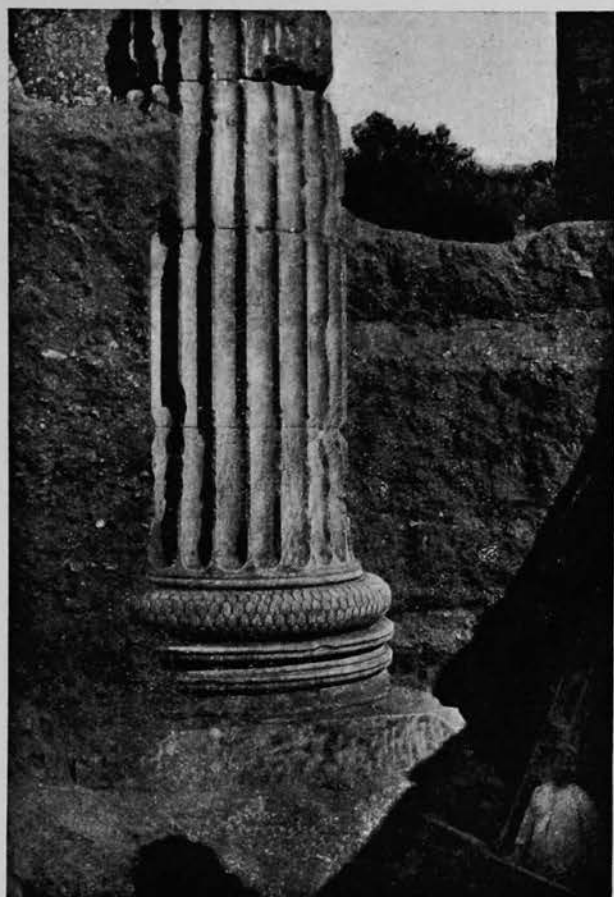


Ill. 68. Base of one of the Standing Columns appearing for the First Time.

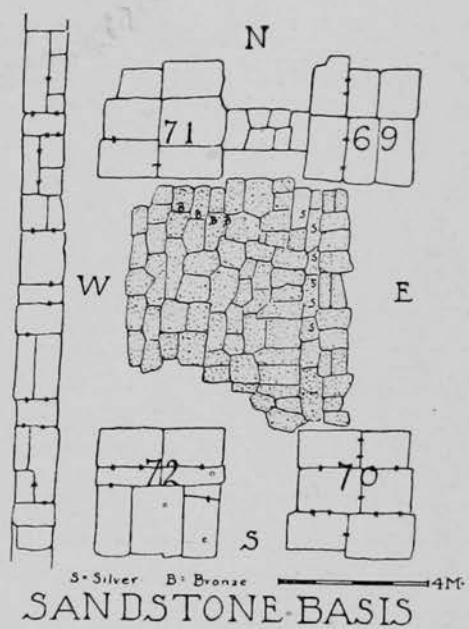
dearth of Roman imperial coins earlier than Constantine continued through the season and is not without significance in relation to the history of the temple.

A very important find of coins was made, in the "basis" in the middle of the temple cella, by Mr. V. EVERIT MACY who had come out to visit the excavations. As soon as the "basis" was discovered (cf. p. 65) it was decided to explore beneath it in search of a temple-deposit like that unearthed by HOGARTH at Ephesos. Mr. MACY was deputed to conduct this investigation as soon as the cella had been entirely cleared. In the removal of the two courses of sandstone, coins of silver and copper began to appear. Silver tetradrachms, to the number of fifty-four, were found in the vertical joints between the stones of the upper course of sandstone all along the eastern side of the "basis", as if at the foot of the pedestal of the statue (Ill. 71). These tetradrachms were for the most part unused, and as fresh as when they had come from the mint. They bear the superscriptions of ALEXANDER, ANTIGONOS,

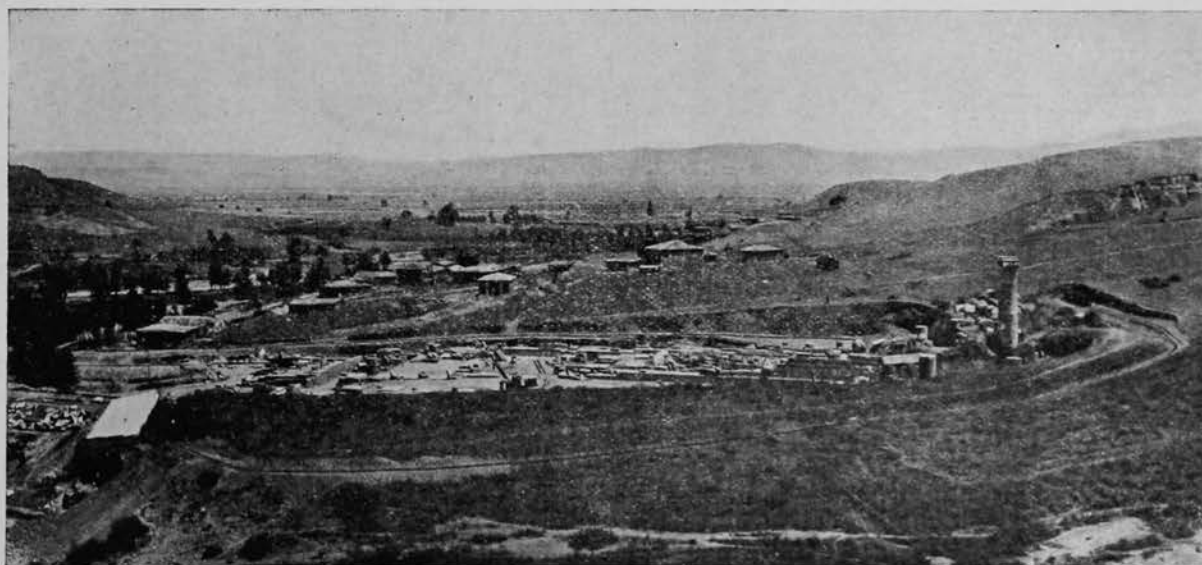




Ill. 69. A Fluted Column coming to Light.



Ill. 71.



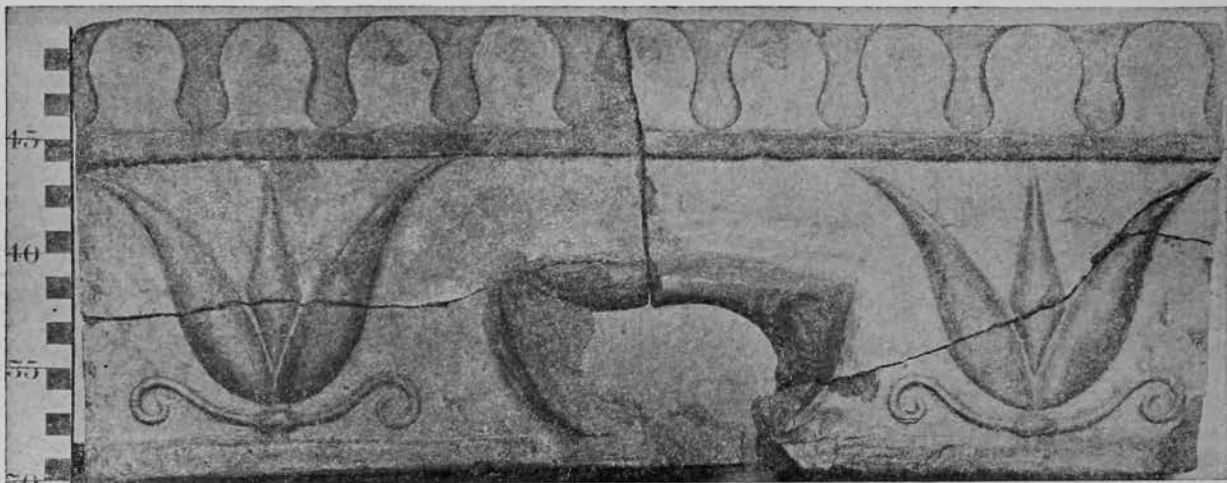
Ill. 70. View of Excavations from the South, at the Close of the Season of 1911.

DEMETRIOS, SELEUKOS, ANTIOCHOS, LYSIMACHOS and PHILETAIROS. Copper coins of early Hellenistic date seventy-two in number were found in other vertical joints between the upper courses at the northwest angle of the "basis". A silver coin of CROESUS was discovered between the two courses of the basis, one of two coins of that monarch found in five seasons' work at Sardis. The question as to whether or no these coins are to be considered as an intentional temple-deposit is to be discussed in the volume devoted to the history and structure of the Temple of Artemis. A deep excavation below the basis, carried on by means of trenches over three metres in depth, failed to reveal any evidence of temple-deposit here; layers of sand and gravel mixed with small pieces of very ancient pottery, and a few fragments of bone including a camel's tooth, constituted the upper strata, and sand and gravel the lower, on the level of the river.

Large numbers of architectural details, such as capitals, bases, fragments of architraves, the jambs, cornice and consoles of the portal, and pieces of the crowning moulding of the cella wall came to light in the process of excavating the temple as described above. In addition to these were fragments of minor details, like marble tiles from the roof, both tegulae and imbrex tiles of unusual dimensions, showing that they were originally over a metre long, and highly finished. These afford additional proof that the temple was in use at an early date; for letters upon them, which probably served as guides to the tile layers, are of an old form.

## 2. EXCAVATIONS ACROSS THE PAKTOLOS.

In connexion with the excavation of the tombs in the hillside directly across the river from the temple, some low, crude walls were encountered near the edge of the bluff which rises precipitously from the stream (H in Ill. 18). These walls appear to be the foundations and lower courses of houses the upper parts of which were built



Ill. 72. Moulded and Coloured Terra-cotta Sima, from Excavations on Nekropolis Hill.

of sun-dried bricks, with roofs and certain other details in terra-cotta; for a great quantity of large roof-tiles was found, made of a fine quality of clay and very well

baked. Some of the flat tiles and many of the imbrex tiles were ornamented with painted decoration which was burnt in, like the glaze commonly seen in Lydian pottery found in the tombs near by.



Ill. 73. Coloured Terra-cotta Tile from Excavations on Nekropolis Hill.

The tiles of the eaves are turned up in a tall sima ornamented with designs in relief interrupted at intervals by water spouts (Ill. 72). Some of the simas are decorated in geometrical patterns, others in conventional designs of lotus. There are fragments of tiles which may have been friezes decorated with animal figures, such as lions (Ill. 73), and horses with chariots, all drawn in an archaic manner and very well executed. All these designs were painted in bright tints and most of them preserve their colour. These tiles probably date from two or three different centuries, and all are ancient, certainly older



Ill. 74. Terra-cotta Fragments from Various Parts of Sardis.

than the fourth century, belonging, in all probability, to the sixth and seventh centuries



before CHRIST. One of the most interesting of the tiles found at Sardis was not discovered in any of our excavations, but was brought in by a boy. It had changed hands so many times that it was impossible to learn its exact provenience; but it bore marks of having been embedded in a wall, probably a late wall in which mortar was used. Its interest lies in the fact that it is part of a tile similar to one published by RADET<sup>1</sup> in 1909. Both tiles were originally oblong; RADET's tile contained a relief of the winged Artemis with wings spread out and curling up at the tips, and the design is contained within a rectangular raised frame. The design on our tile (Ill. 74) represents a male figure in combat with a bull-headed human being, and is not unlike a group of THESEUS and the Minotaur. It is set in an almost square frame like the other, and attached to one side is the tip of Artemis' wing which, with compared measurements, shows that it was cast from the same mould as the other. A more complete discussion of the Lydian tiles found at Sardis, with measurements and detail drawings, will be found in another part of the present Publications.

### 3. EXCAVATIONS ON THE NEKROPOLIS HILL.

A vigorous campaign of tomb excavation was carried on throughout the season of 1911 on the slopes of the Nekropolis Hill across the Paktolos, under the supervision of Mr. BUCKLER. Over two hundred tomb chambers were opened, with an average of six burials in each. The chief site was the slope directly above the river, facing the temple, which came to be known as Nekropolis A; but tombs were also opened in small groups on the north and south of this first hill, and in other places in the deeply eroded valleys of the great Nekropolis mountain behind, which seemed to promise an almost endless field. Each tomb was given a number, and every object found was catalogued not only with this but also with its serial number, as pottery, bronze jewelry, etc. Thus, although the objects are classified for storing away, it is always possible to find out the entire contents of any given tomb.

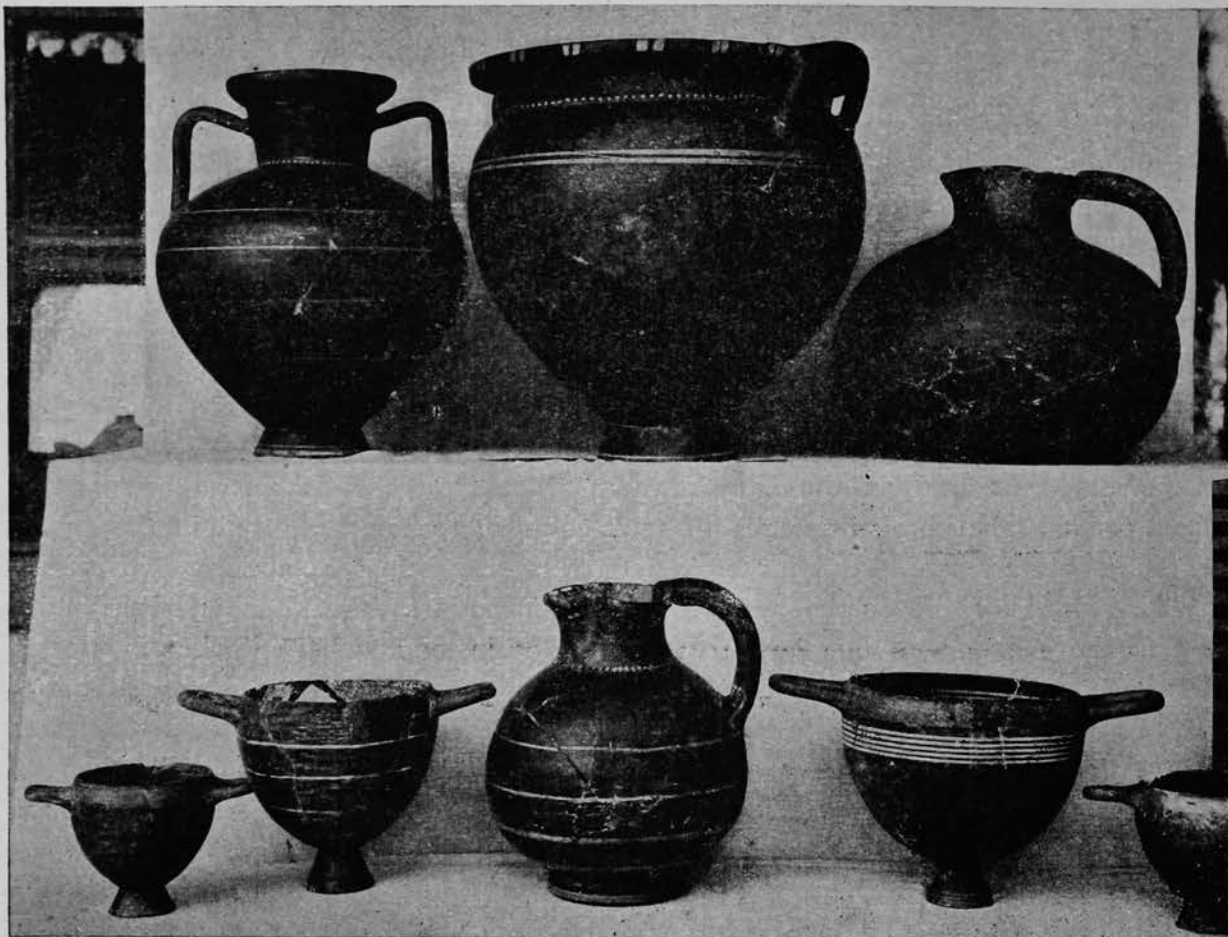
Most of the burial places proved to be of the type described on page 56, with a long dromos ending in a door, and one or two chambers with couches on either side, and at the end, of a passage through the middle. The roofs of most of them had originally been of the double-pitched variety; some of the interiors may have been plastered. It appears that all, or most, of the tombs were made at an early period, probably under the Lydian supremacy, and had been cleared out and re-used, from time to time, during several centuries. This is evident from an examination of the fragments of pottery which are found in the soil on the slope below the entrances. The tombs were cut out of the sloping hillside, in the hard-packed clay, in from three to six tiers one above the other, and were reached by narrow roads running along in front of each tier. But the contour of the slope has changed much during the centuries, and no trace of the roads, or narrow terraces, is now visible. The entrances to the tombs of the upper tiers are hardly concealed, while those of the lower tiers

<sup>1</sup> RADET, G.: *Cybébé. Étude sur les transformations plastiques d'un type divin.* (Bibliothèque des Universités du Midi, Fascicule XIII) Bordeaux, 1909; pl. I.

have been deeply buried by erosion. In the débris which covers the entrances, and often on the floors of the passages leading to them, one finds sherds of several different epochs; for instance, fragments distinctly resembling geometric ware, pieces of "Rhodian" vases or wares copied directly from the "Rhodian", bits of Corinthian pottery and of black-figured, red-figured, and plain black Attic wares, corresponding to pottery of the ninth to the fifth century found in Ionia and in Europe; as well as sherds which clearly belonged to the early Hellenistic period. In several tombs large urns filled with charred bones were found, with inscriptions written upon them in ink,<sup>1</sup> that cannot be earlier than the first century B. C., but none of the objects found can be dated as late as the Christian era. The masses of loose fragments on the slopes contain also broken masks of terra-cotta in archaic style and in the style of the fourth century, together with broken terra-cotta figurines of at least two different periods. None of the tombs has been rifled in modern times; most of them were filled to the ceiling with fine dust that had drifted in, or had been washed in, through the cracks around the door. But practically all of them had been cleared out for re-use at least once in their history, and many of them two or three times. All the objects of various kinds found in the tombs are to be described in special volumes of these Publications, each devoted to a single class. There follows here a brief general description of the more important objects discovered during the season of 1911.

Only one tomb was found to contain the early kind of pottery which we had come to call Lydian, because it resembled none of the known wares, and this had escaped clearing out and a second occupation for the reason that the floor of the tomb directly above it had collapsed and fallen through at an early period, crushing all of the pottery and rendering the lower tomb useless. Most of the fragments of the pottery, however, were recovered, and, after they had been sorted, showed that there had been upwards of fifty objects, large and small, of widely different quality, in black, yellow and red clay, and in a great variety of shapes. Many of these were put together and made a fine showing (Ill. 75 A and B). One large amphora, ornamented in bright red and dull yellow bands, and resembling "Rhodian" ware, bears animal figures well drawn in broad black outlines; a smaller jug, of yellow clay, is adorned with concentric circles in brown lines. In addition to these there are vases corresponding to the amphora, the krater, the skyphos and the oenochoe in shape, covered with a thin black glaze apparently laid on with intentional carelessness so that the red shows through the brush-work in places, and decorated with thin horizontal stripes of white and neck-ornaments of white dots. There were also objects in a beautiful pinkish clay shot through with minute particles of mica, but undecorated. One of these was a tall "fruit stand", over sixty centimetres in diameter, of graceful shape, and one was a strainer undoubtedly used to make the *yaghourt*, or the *kaimak*, for which Lydia is still famous. Another large "fruit stand" was made of black clay covered with a heavy black shiny glaze, almost like the best Attic ware, and even more lustrous. Nothing except pottery was found in this tomb, which was a single chamber without couches. No tombs were discovered containing unbroken or un-

<sup>1</sup> see *A. J. A.* XVIII (1914), pp. 12-24, nos. 14-19.



Ill. 75 A. Lydian Pottery from a Tomb in the First Nekropolis.



Ill. 75 B. Lydian Pottery from a Tomb in the First Nekropolis.



disturbed pottery of the black-figured or red-figured wares represented on the slopes by quantities of sherds. Most of the unrifled ones held only three types of pottery, one unglazed, one coarsely glazed in black with painted decoration in white or yellow, and the third a yellow unglazed ware with delicate drawings in black and brown, with a few specimens of unglazed moulded bowls of various charming designs, all of which types are known to be Hellenistic. In the latest period, about the first century B. C., when incineration was practised to some extent at least, and when large vases of charred bones were placed in the tombs, it was not deemed necessary to clear out the space completely; for these cinerary urns were often found standing on couches strewn with remains of bodies that had not been burnt, in tombs containing pottery of an evidently earlier date.

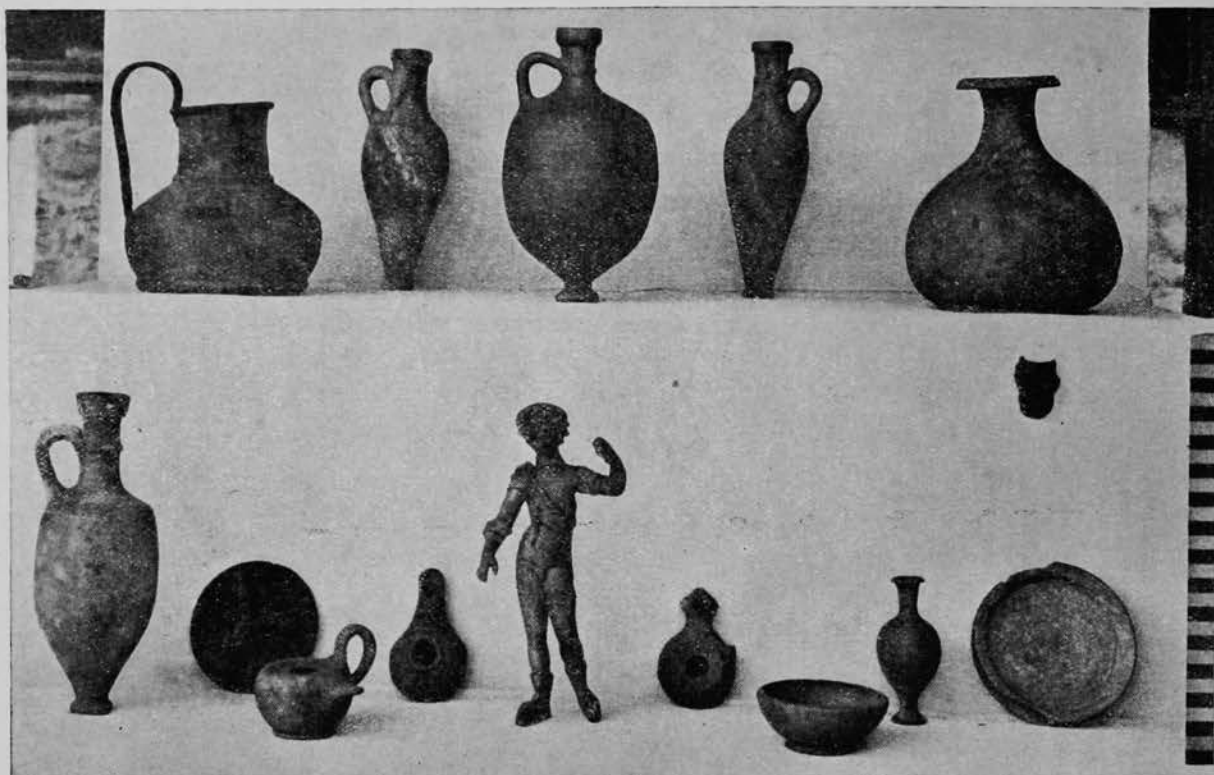
The terra-cottas, though not numerous, are of two sorts, figurines and masks. The figurines appear to be of the Myrina fabric; one which was almost complete is a female figure, probably Aphrodite, represented at the bath. At her feet is a water jar, and she is wringing water out of her hair. Only the face of this figurine is missing (Ill. 76). Another figurine, broken but easily mended, represents a boy, nude but for a bit of drapery over one shoulder and arm; he wears a wreath of flowers and leaves, and his feet are shod with high boots (Ill. 77). The other figurines are fragmentary. The masks are mostly in pieces; but two have been put together. One is a beautiful archaic female head, bust and arms (Ill. 78), with much colour still preserved, especially in a design on the diadem; the other (Ill. 79) is of the 5th century, but the face is the only part moulded in detail, the head-dress and drapery being treated almost as in an Egyptian sarcophagus, or one of the Sidon sarcophagi of Hellenistic anthropomorphic type.

In a number of instances sarcophagi of terra-cotta, beautifully made, but usually broken, were found in tombs with other burials which had no coffins. Only one of the terra-cotta sarcophagi was found in a complete state of preservation, and this was unearthed on the eastern slope among the ruins of a crushed tomb, and only a little below the surface (Ill. 80). It is large and heavy, made in two pieces; the cover has slanting sides and ends, and is decorated with raised bands like metal work. It was tightly sealed, and was slightly broken in the opening. It contained only a little white dust.

In three tombs stone sarcophagi were found (Ill. 81), and in one, a marble cist filled with ashes and charred bones. A sarcophagus, however, is no indication of particular wealth or dignity on the part of the occupant, if one is to judge by objects found with the dead; for more jewelry and other signs of opulence were usually



Ill. 76. Hellenistic Figurine in Terra-cotta.



Ill. 77. Objects in Eronze, Pottery and Terra-cotta, from Hellenistic Tombs in First Nekropolis.



Ill. 78. Coloured Terra-cotta Mask.



Ill. 79. Terra-cotta Mask.

found on the simple couches than were discovered in sarcophagi, even in tombs in which one or more sarcophagi were used.

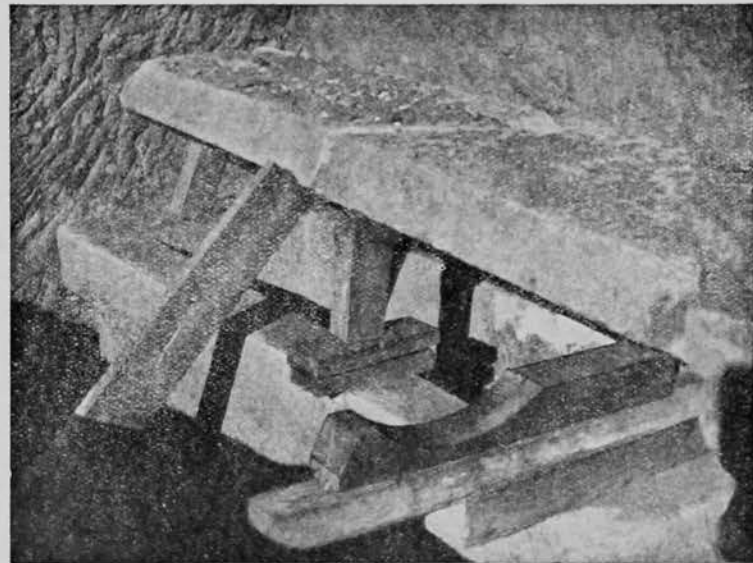
Two marble stelae were found inside tomb chambers; these had been painted but the colour designs had disappeared. The forms of letters written on these stelae, inscriptions written on certain vases, and coins found in several tombs, are all aids to dating the Hellenistic pottery and other objects.

Besides the pottery, vessels in other materials — that is, silver, bronze, and glass — were found in the tombs, but in far smaller numbers. Little jugs and vases, moulded bowls, and deep saucer-like vessels and a small ladle, all of silver, are among the larger objects in this metal brought to light. One of the bowls, a libation bowl, with a depression in the bottom for the insertion of the end of the middle finger, is richly ornamented with a repoussé design of lotus buds (Ill. 82). Another bowl and the small ladle in it, both of silver, were the only objects found in one of the large stone sarcophagi (Ill. 81) discovered on the south slope of the first tomb hill; the handle of the ladle terminates in a crook, at the end of which is a beautifully wrought calf's head. Smaller finds in silver are little dishes, ointment-stirrers, rings and mountings for seals. All the silver articles, with one or two exceptions, are corroded with a deep purple incrustation which is quite beautiful. Certain objects in this metal have completely disintegrated. They are found in the earth quite whole, but with every particle divided from every other, so that they cannot possibly be saved.

Little glass was found this year, although the few specimens discovered are of unusual beauty, one of them being a complete specimen of figured glass of that early kind commonly known as Phoenician; the others are small bottles highly iridescent. Alabaster of the most delicate manufacture were found in large numbers, but many of



Ill. 80. Sarcophagus in Terra-cotta, from First Nekropolis.

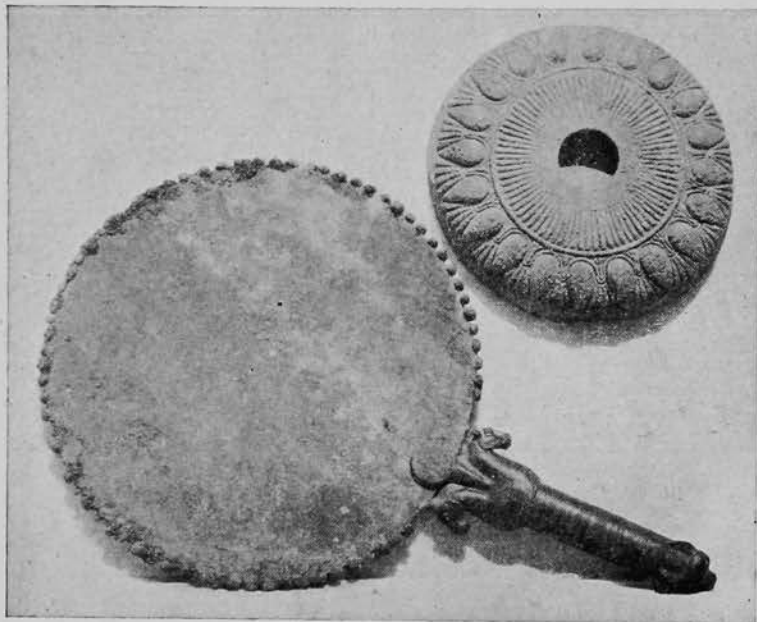


Ill. 81. Sarcophagus in Limestone.



them are in fragments, suggesting that they were broken in connexion with burial rites.

Bronze vessels were seldom found together with pottery, and never with good pottery. A number of bronze jugs, one or two of which had been gilded, with swelling



Ill. 82. Bronze Mirror and Silver Libation Bowl.

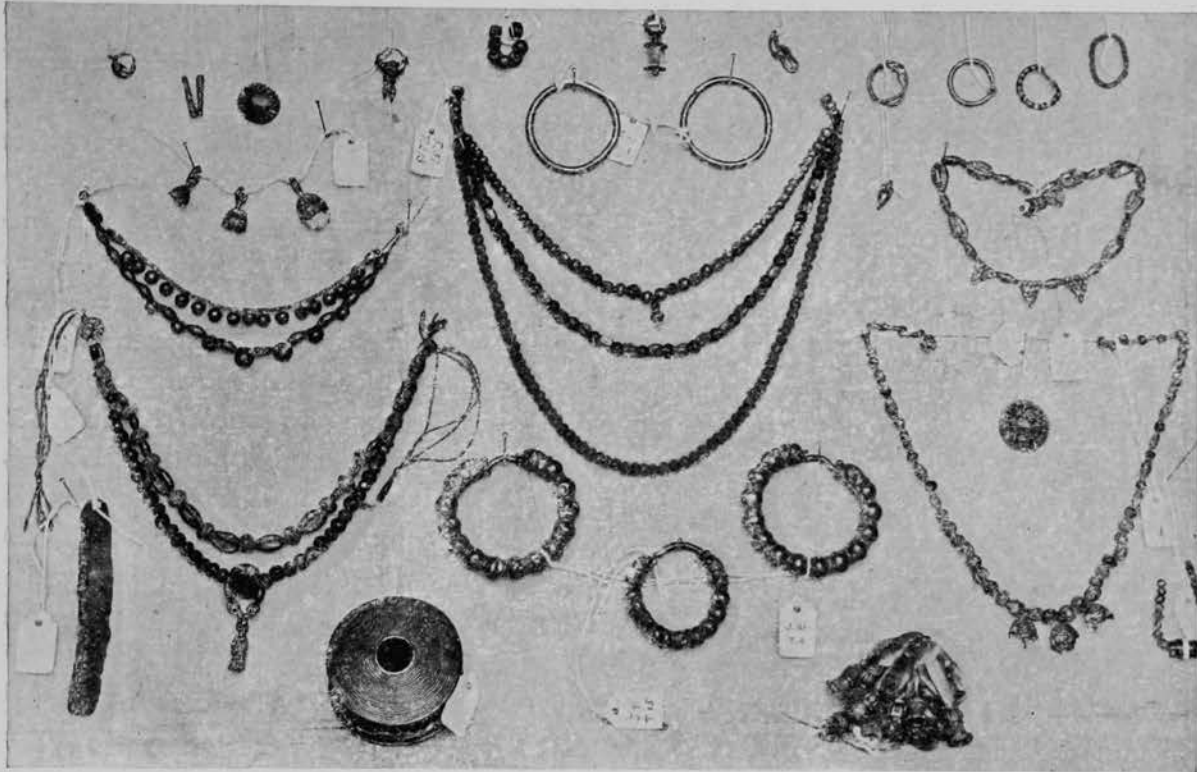
bodies, high handles and small necks, were discovered in tombs in which little else was found (Ill. 77). Some of these bronze vases have ornamented lips, either beaded or decorated with a delicate egg-and-dart moulding; the handles are gracefully turned. One has the head of a Silenus in relief, executed in good style, at the point where the handle joins the body of the vase; others have inverted anthemions at this point. Bronze was most commonly found in the form of mirrors, usually simple discs with slightly up-turned rims to

receive a cover, many showing holes and nails where handles of wood or ivory were attached. One very beautiful large mirror (Ill. 82) has a pearled rim of bronze and a handle composed of concentric rings of bronze, iron and silver, terminating in a calf's head and supported on either side by archaic horses' heads.

Jewelry, that is, personal ornaments of gold and engraved gems, was found in most unlikely places, and seldom in tombs with good pottery or with bronzes, excepting mirrors. The objects in gold are ear-rings, large and small, a bracelet, finger-rings, and necklaces of gold beads in many different designs, often accompanied by carnelian beads, but all were found unstrung. The resemblance between some of this gold work and the well-known Etruscan jewelry is worthy of remark. Many of the ear-rings are large rings (Ill. 83) three to four centimetres in diameter, composed of globular units separated by narrow beaded bands, and terminating on either side of the opening for the ear in two lions' heads beautifully wrought in a very archaic manner. Between the heads is a slender bar of gold swung on a pin at one end, and having an eye in the other which slips between two other eyes in the upper and lower jaws of one of the lions, where a detached pin was inserted to hold the ear-ring in place. A bracelet of later make was found, together with other objects, by Mrs. V. E. MACY, in a crushed sarcophagus, barely hidden below the surface on the east slope of the first tomb hill, part of a chamber tomb that had fallen in and had been almost washed away by erosion. The sarcophagus was not of the ordinary type, which is of red clay as described above, but was made up of dark grey clay, with a rounded, or half-cylinder shaped, cover decorated with broad raised bands which were studded as if with large nail-heads: The bracelet was a

simple, heavy ring of gold with a large chalcedony. The stone is set on a swivel, and bears a well cut intaglio (Ill. 84) of Hermes and Athena.

The finest of the necklaces was composed of units of two kinds, one representing



Ill. 83. Some of the Jewelry and other Gold Objects found during 1911.

a closed flower like a thistle bud, the other a corrugated stem. These were strung alternately, as may be seen in the photograph (Ill. 85) which gives only the faintest notion of the real beauty of the ornament. Another necklace was made up of gold beads moulded to resemble cowrie shells; others are strings of larger or smaller beads covered with fine globules of gold — often called granular work — which gives them a wonderful lustre (Ill. 83).

The engraved gems, or seals, are perhaps the most interesting objects discovered in the tombs. While a small number of these stones date from the Hellenistic period, and were drawn from Greek models, like the large intaglio of Hermes and Athena mentioned above (Ill. 84), the majority are earlier, and belong to the class often called Graeco-Persian, represented in small numbers in collections in European museums, and supposed to have been cut for Persian nobles by Greek artists. Most of them are of chalcedony in conoid form set in gold or silver, some are of carnelian in scaraboid



Ill. 84. Cast of Hellenistic Intaglio.

shape, set in rings of gold, and mounted on a swivel (Ill. 85). The mounting of the conoid type often consists of swans' necks and heads brought down the sides from a ring at the top, by which the seal was affixed to the belt or to a necklace (Ill. 85).



Ill. 85. Gold Necklace, Rings, and Seal from Lydian Tombs.

The designs, depicted with excellent technique, are griffins, or bulls and lions represented singly or in combat, and kings or gods enthroned or fighting griffins or lions, and harpies or sphinxes symmetrically facing each other (Ill. 86 A). An impression from the conoid seal in Ill. 85 is the goat-headed chimaera shown in Ill. 86 A; one of the intaglio of a crouching lion in Ill. 85 is also shown in 86 A. One beautiful seal, in a hard yellow and purple stone, bears a scene in which a bull is being borne to earth by a lion while the sun and moon are represented above them (Ill. 86 A). An enthroned king, on a seal of chalcedony, appears to be a specimen of local art; for it bears no re-

semblance to either the Persian or the Assyrian treatment of this subject (Ill. 86 B). Gems of this sort can be dated within quite narrow limits, and they may serve to fix the date of objects found with them, though it may be argued that a seal found in one of our sieves might have escaped one or more clearings-out of a tomb in ancient times when sieves were probably not employed.

The last week in June was devoted chiefly to putting the house and the excavations in order for closing. A small addition had been joined to the north side of the "museum" for the accommodation of our military guard, which consisted of IBRAHIM the sergeant of gendarmes and one or two privates. In this guard we had a feeling of perfect confidence; for the sergeant had now been with us for two seasons, and had proved himself most trustworthy and useful in many ways. The two other gendarmes were changed from time to time.

A deep trench was dug above the excavations to prevent the winter rains from doing serious damage to them. The locomotive was put into the house which had been built for it, together with much of the smaller equipment. The crane was



housed in (Ill. 86 c) and the great inscription on the wall of the treasury of the temple was tightly covered with planks. All movable objects, even statues and inscribed blocks



Ill. 86 A. Casts from Lydian Seals.

Ill. 86 B. Casts from Lydian Seals.

of considerable weight, were placed in the store-house, or in cupboards in the dwelling. Only the gold and silver articles were packed up to be taken to the Imperial Ottoman Museum in Constantinople, for we were unwilling to assume responsibility for objects of intrinsic value.

Just before our departure, our attention was called to two interesting fragments of Byzantine carving in a native house far up on the mountain side. The two pieces fitted nicely together (Ill. 86 D) to complete the sculptured design at one end. The original was a marble slab over two metres long with one long side bevelled. Low relief ornament was applied to the flat surface of the slab and to the bevelled edge. The carving on the flat surface stops just short of the ends, but the decoration of the bevel extends the entire length. It was not



Ill. 86 c. Crane with Engine boxed in.

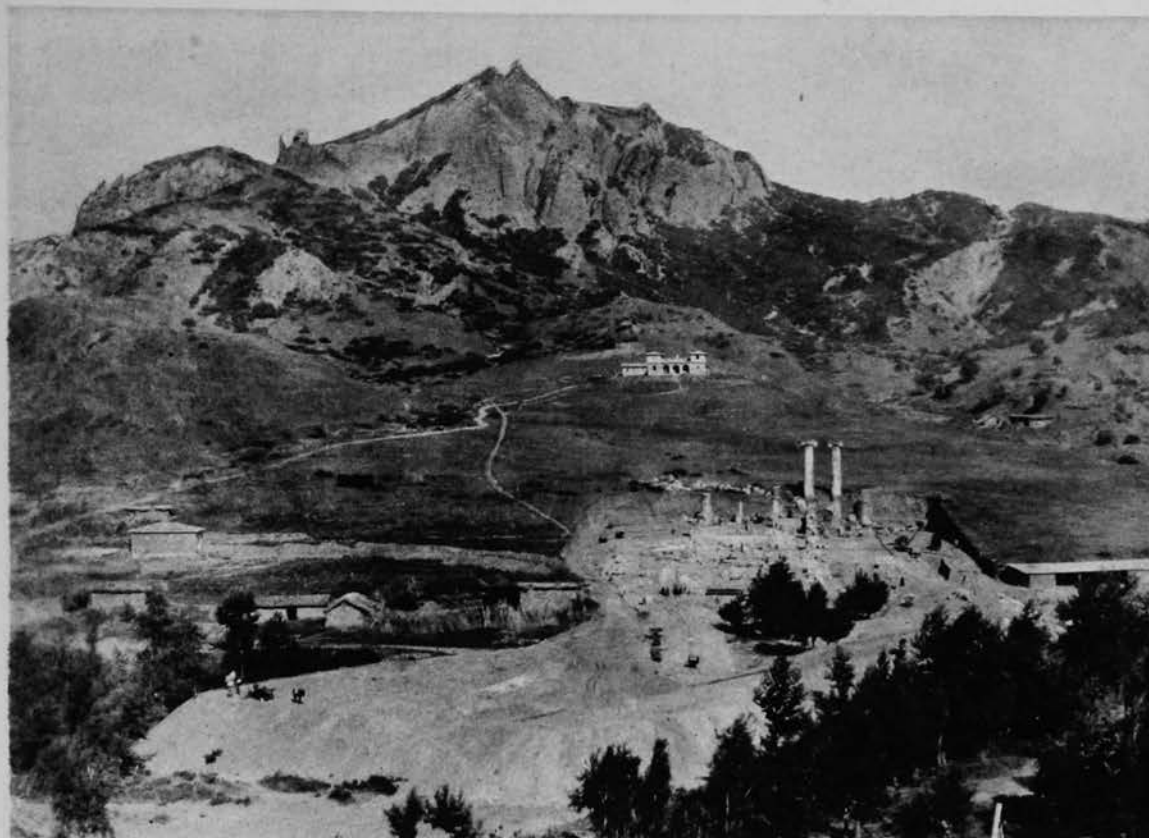
possible to determine the original purpose of the slab, but the arrangement of the reliefs suggests that it formed part of a ceiling, or soffit, of some feature such as the

ciborium over the altar of a church. If both sides were bevelled the slab might be thought of as a sarcophagus cover, and, indeed, it may have covered a stone coffin



Ill. 86 D. Byzantine Carving from the Mountain above Sardis.

which was placed against a wall. There are no distinctively Christian symbols in the decoration, although the pattern of the central disc roughly forms a cross. The ornamental discs bound by interlacing fillets, which decorate the bevel suggest the Christian ornamentation of Syria of the fifth and sixth centuries; but the pine-tree forms and the interlaced strap decoration resemble later decorative types. The slab was brought to the excavation house for safe keeping.



Ill. 87. The Excavations at the Beginning of the Season of 1912.  
View from the West.

## CHAPTER V.

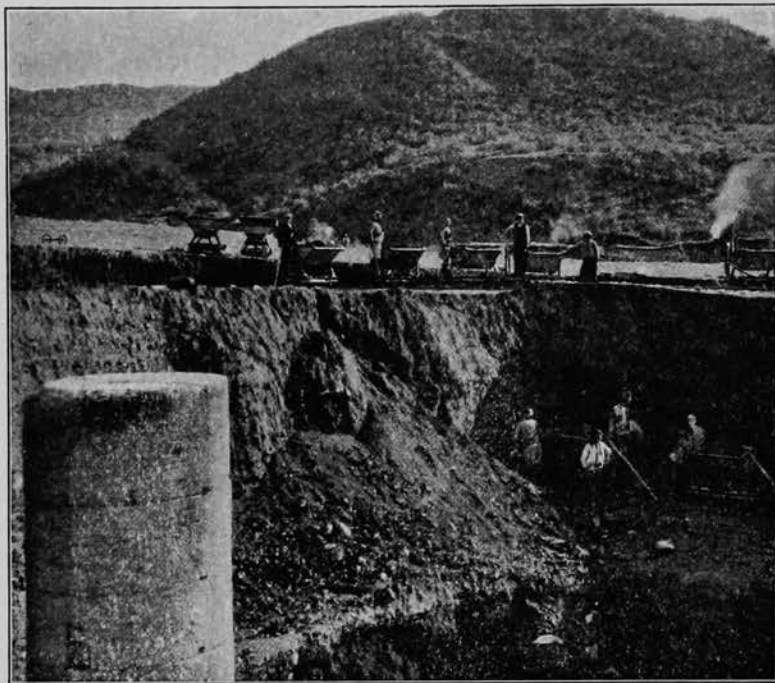
### THE SEASON OF 1912.

#### I. EXCAVATIONS AT THE TEMPLE OF ARTEMIS.

The task of our third campaign, which began early in February, was that of completing the excavation of the northeast angle of the temple, and to this end all efforts were bent from the opening day. Progress in this quarter had been held back, as described in the foregoing chapter, by the heavy drums which lay on the surface of the ground, representing the ruins of the upper halves of four columns that had collapsed during the last century and a half. A plan for their removal, without injury, had been devised toward the end of the last season (cf. p. 73) and was now to be executed with all possible speed. This work when finished would result in greatly lengthening the area of the excavations toward the east, where the soil and débris would be almost fifteen metres deep; but it was planned, at the same time, to widen the area considerably on the south where the depth of earth diminished rapidly toward the river (Ill. 87), as well as on the north side where the height of our cut was still rising with no prospect as yet of any corresponding rise in the original levels.



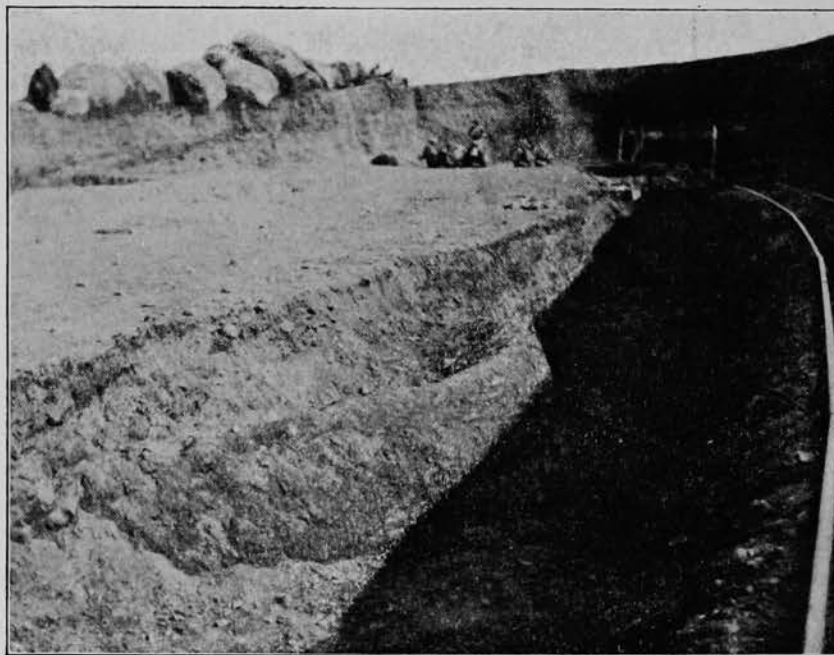
The railway, which at the close of the last season had been laid out on the surface east of the heaps of column-drums, and carried around the southeast angle of the excavations (Ill. 88)



Ill. 88. Southeast Angle of Excavations, February, 1912.

to a high dumping place in the river bed well to the southwest of the temple, did its work rapidly as planned the year before. This plan, it may be remembered, was to construct a wide deep trench by repeated lowerings of the track into cuttings made beside it (Ill. 89); and then to roll, or slide, the drums eastward into the trench, to remain there until they might be slid once more in the opposite direction to their final resting place at the bases of the unexcavated columns to which they belonged. In a

comparatively short time the drums were isolated upon a high "island" (Ill. 90) between the new trench and the main excavations. At the core of this island were the unexcavated columns standing to over half their original height, but showing only their uppermost drums above the surface. In all this earth, amounting to many thousand cubic metres, we found no antiquities of any sort, merely soil above, and a deep accumulation of sand and gravel below, which represented the disintegration of the Akropolis.



Ill. 89. The Eastern Trench, with the Half Dome appearing.

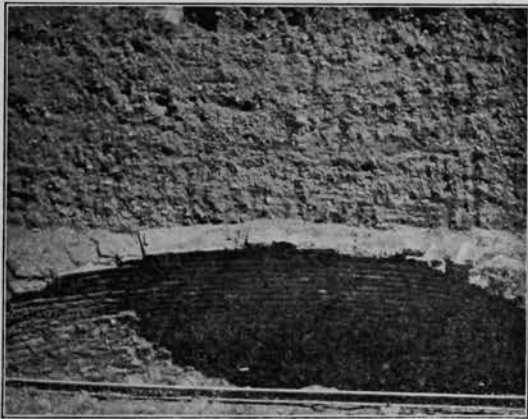
Before the new trench was completed, however, a curious brick construction of spherical shape began to emerge from the bottom of it. This construction is barely visible, as it first appeared,

in Ill. 89. It was soon apparent that this was part of a dome or half dome (Ill. 91) the crown of which had fallen in. It may be recalled that, at the end of the season of 1911, a high brick wall with a doorway in it had been encountered directly east of the two southernmost columns of the front row of the temple porch (Ill. 68). The domed structure that was now appearing stood directly east of this wall. It looked as if we had found the eastern, apsidal end of a small brick building. This discovery threatened to delay the progress of the excavations, and plans were immediately made to extend them still further to the east, in order to clear this newly found building and still to carry out our original scheme for the disposal of the great drums. But, as the excavations were deepened at this point, there presently



Ill. 90. The "Island" of the Column-drums.

appeared a second domed structure, directly west of the first and on axis with it, not more than eight metres distant. Here there emerged another half dome smaller than the first, completely preserved, and, over its arch, two piers which had once separated three windows. At the same time work on the lower level had brought to light two side walls projecting eastward from the wall discovered last year. These walls, all in brick, and preserved to almost their original height (Ill. 92), terminated on either side of the smaller half dome. To our astonishment it was found possible to continue the deepening of the trench and the lowering of the railway line between the two half domes, so that before long the trains of waggons were passing between two distinct and separate apses, one behind the other, a larger apse partly ruined, with three windows in it, and a much smaller apse complete, with one window (Ill. 92). It was now clear that we

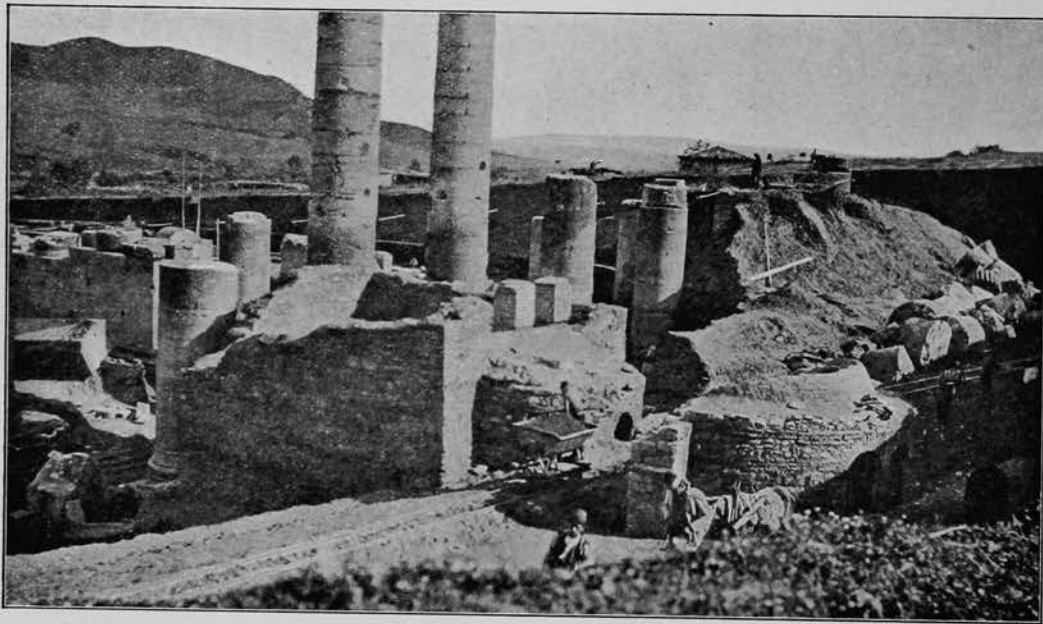


Ill. 91. The Half Dome, from inside.

had come upon a little church, almost perfect but for its roof, the first unmistakable church building to be found in Sardis. It was evidently also of very early construction, a fact which greatly added to its interest by recalling the reference in the Apocalypse to the Church of Sardis as one of the Seven Churches. Considering that the temple of Artemis, destroyed in A.D. 17, might still have been in ruins when the author

of the Book of Revelation was writing, it is noteworthy that the church is set on a level almost as low as the temple platform, so low indeed that, before excavation, the topmost brick in its walls was two or three metres below the surface<sup>1</sup>. All things considered, this little church was an important find, even though it may not be permissible to refer to it as *the* Church of Sardis, to whose "angel" the Evangelist was commanded to write. Work on the lower levels about the church, and in clearing out its interior, was necessarily slow, and several weeks passed before some of its most important features saw the light.

Meanwhile the high "island" of the column drums was beginning to disappear, and one day at the end of March the engineers began to slide the large drums down from their lofty resting place into the bottom of the great trench (Ill. 92). It was



Ill. 92. The Church and the East End of Excavations.

found possible to replace only two or three of them upon the truncated columns where they belonged, owing to bad fractures in several drums; but within a few days the entire collection lay at the bottom of the trench, and the heap of earth upon which they had rested was ready for removal so that the remaining columns might be set free..

This removal was carried on by several lines of railway; two, an upper and a lower line along the east end in the new trench; one, in two short branches, from the south side of the east porch of the temple (Ill. 93); and three on the north side, one for each terrace level. Work on these lines progressed rapidly; soon the two fluted columns before the temple portal and their high pedestals were entirely visible, the interior space of the porch became more and more open, and the bases of the front row of columns began one after another to appear. The great architrave block which had hampered our work in 1911, and which, because too heavy for our crane,

<sup>1</sup> MELITON, bishop of Sardis about 170 A.D., wrote a treatise on the Revelation of John (Περὶ τῆς Ἀποκαλύψεως Ἰωάννου): EUSEBIUS, *Ecc. Hist.* IV. 26. 2. At that time the cult of Artemis was doubtless still flourishing in our temple.



we had left high up on an "island" of earth while the digging went on around it (Ill. 65), still remained an obstacle. The problem of bringing it down to the pteroma level, and setting it in a permanent position, was hard to solve. It was impossible to ask labourers to pick the earth from under it, for there was no telling when a single blow might loosen the whole mass and bring the huge block down upon them, and it had resisted all efforts to prize it loose with long beams. The final solution was

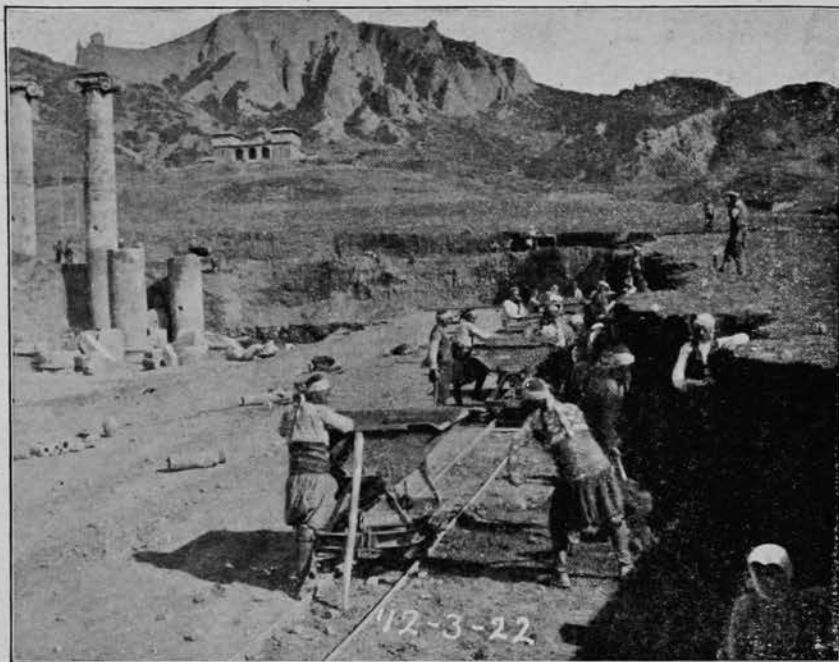


Ill. 93. East Porch of the Temple in March, 1912; View from the Southwest.

simple: the use of water. We had built high above our house a cistern for the water supply, and had filled it with water piped from a spring at the base of the precipice of the Akropolis. We had also just piped water to the excavations from this cistern, and the fall was sufficient to produce strong pressure. Water from a hose was brought to play upon the solid mass of earth on which the architrave block rested. Gradually the earth yielded all along under its base, until with slow and majestic movement it settled, falling slightly forward and coming easily to rest without damage to itself or injury to the workmen. This removed the last obstacle to the complete clearing out of the east porch (Ill. 93).

During these operations at the east end of the excavations, the widening of the area toward the north and south was also making progress (Ill. 94). On the south side the work was comparatively easy and, for the most part, was carried on upon

the level of the temple platform; for the original ancient level was here somewhat higher than in the region of the Lydian Building, and was not deeply buried. Here



Ill. 94. Widening the Excavations on the South Side.

little of real importance was discovered. Some ruins of walls composed of boulders were interesting because the neighbourhood is wholly devoid of such great building stones, so that these must have been brought from a distance, and may even have formed parts of a primitive wall upon the Akropolis. On the bottom of this level was found a large stone with a Lydian inscription (Ill. 95). The stone is broken on one side; but the text, of twenty-two lines on a recessed surface, seems to be complete. Above the inscription are an incised crescent moon and a figure like a carpenter's square. It has not been possible, thus far, to determine the content of the inscription, or the character of the monument. Just below the surface on this side were found two concrete Byzantine chamber-tombs, the tunnel vaults of which had fallen in, and a field of late graves, probably of the Mediaeval period, the sides of which were faced with tiles or stone slabs upon which rested rough covers made of other slabs, so as to form a sort of sarcophagus at the bottom of the grave. The tiles and slabs used were all taken from ancient and ruined structures, a part of one of the covers bearing fragments of a rather crude relief of animal figures and part of a Greek inscription (Ill. 96).

On the north side excavation was carried on at several different levels; for here the wall of earth against which we were working was becoming very high, especially in its eastern half. On this side four lines were operated on four separate terraces;

little of real importance was discovered. Some ruins of walls composed of boulders were interesting because the neighbourhood is wholly devoid of such great building stones, so that these must have been brought from a distance, and may even have formed parts of a primitive wall upon the Akropolis. On the bottom of this level was found a large stone with a Lydian inscription (Ill. 95). The stone is broken on one side; but the text, of twenty-

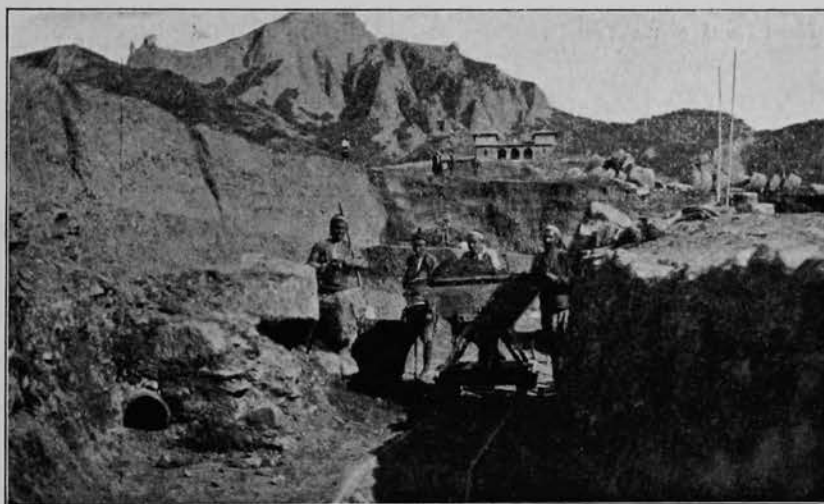


Ill. 95. Lydian Inscription found on South Side.

one below the level of the temple platform along the concrete casing of the marble column foundations, one on the level of the platform, and two on the upper levels of soft earth; the bank of earth above the uppermost level rose to almost seven metres at its eastern end. On the lowest level the excavated earth showed no stratifications whatever, and was formed of clay and sand mixed with potsherds the periods of which differed widely owing to repeated digging, as for instance in laying the foundations of the temple columns and in inserting the concrete casings. These casings were found to be very irregularly laid along this north flank (Ill. 97). The foundations of the fifth, sixth, ninth, sixteenth and seventeenth columns had not been encased at all, and the marble foundations of three of these columns had been dug out and carried off. On this level were also found lines of large tile pipes of the late Roman or Byzantine period, set in trenches which had been two metres or more below the surface at the time of their laying. The end of one of these lines is shown in Ill. 97. On the intermediate levels were found other large conduits formed of well-made tile sections perfectly fitted together and held in place by the strongest cement. One of these conduits extended all along the north flank of the temple, and turned across the northeast angle of the porch among the



Ill. 96. Fragment of Ancient Sculpture, found in Late Grave.



Ill. 97. Deepening the Excavations on the North Side.

columns, disappearing in the high bank to the east. The excavation of the intermediate levels was rather dull work. They were intersected by rough walls, presumably of houses, of the Mediaeval period, built of undressed stones of various sizes from the river bed, laid in mud. Most of them had disintegrated in part at least before they were buried. A few coins found among them suggest the period from the 10th to the 12th century as the date of their construction. In one of these walls of particularly coarse workmanship were discovered two marble heads very badly mutilated but preserving enough of their original character to show that Sardis could boast of good Greek sculpture (Ill. 98).

Both heads suggest the period and style of SCOPAS. One is a helmeted female head in marble of fine texture, and even in its mutilated state shows dignity of feeling



and expression; the other, also the head of a woman, was executed in a somewhat coarser variety of marble, and is more injured than the other, having been intentionally hacked with some sharp instrument; yet it shows much character, and is unquestionably the work of an artist of the early Hellenistic period or earlier. All these sculptures are discussed in detail in another volume of this series.

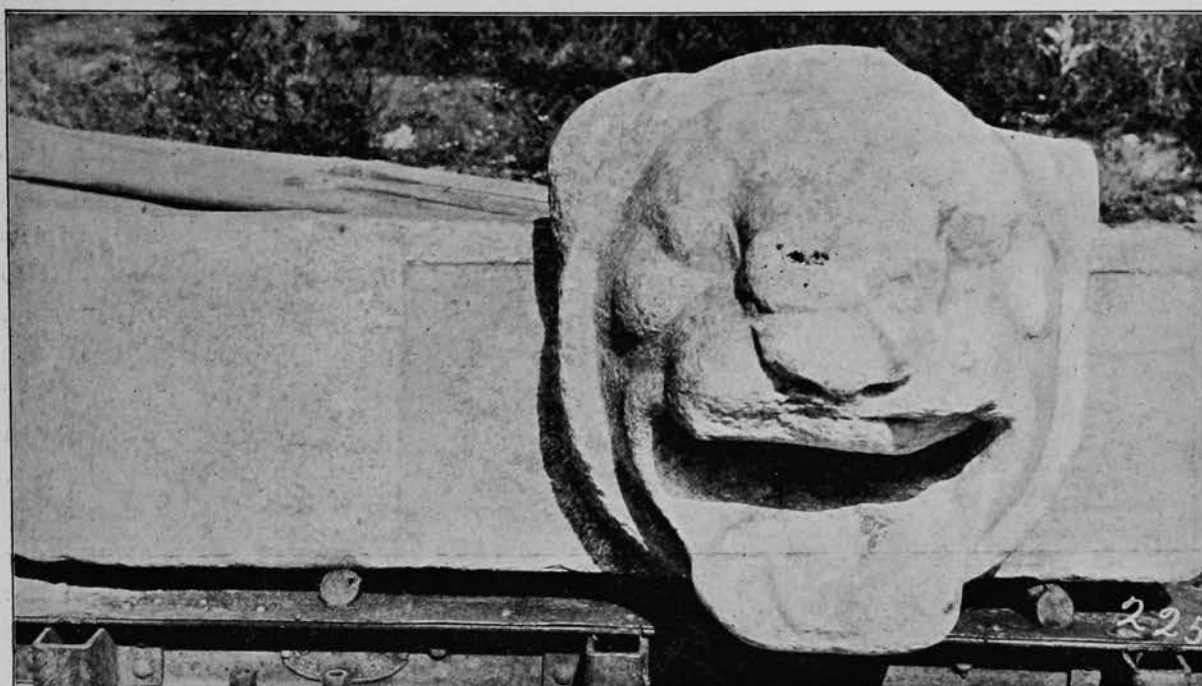


Ill. 98. Marble Heads found North of the Temple.

to light. This in all probability belonged to the cornice of the temple (Ill. 99), and when in place stood in a position almost directly above the spot where it was found, being the water-spout nearest the corner of the temple. The scale of the head is sufficiently large to have matched the scale of the building. The face of the lion was not executed upon the cornice itself, but upon a separate block provided with a sort of collar by means of which it was held in the face of the cornice. The block extends well back from the head, and its upper surface bears the cutting for the gutter which opens into the orifice in the lion's mouth. The style is not that of the lions' heads seen in Greek sculpture, or in similar features in Greek architecture, but is of more Oriental type, with the much wrinkled snub nose and small eyes of the Assyrian lions from Nimrūd. The teeth are broken away and the mane was either not indicated at all, or was carved upon the face of the cornice. The execution is extremely simple, the features being hardly more than blocked out, yet perfectly finished; the intention of the artist having apparently been to bring out the features by strong shadows, and to omit minute details which could not be seen, and might even confuse the effect, at a distance of twenty-five metres from the eye. It seems probable that this head, which bears on its upper surface the marks of long exposure to the weather, was in place for a long time after the temple had been abandoned; and until four or five metres of débris had accumulated about the feet of the columns, when it finally fell

The rough walls of broken stone and mud, and the loose earth of the lower and intermediate levels, yielded numerous fragments of sculptural details such as the hands and feet of statues, and several torsos of statuettes in white marble, besides sundry more or less illegible inscriptions on pieces of broken marble, bowls and other moveable objects. A few Greek inscriptions, mostly fragmentary, were also discovered on these levels.

Near the northeast angle of the peristyle, at a height of about four metres above the base of the angle column, a colossal lion's head came

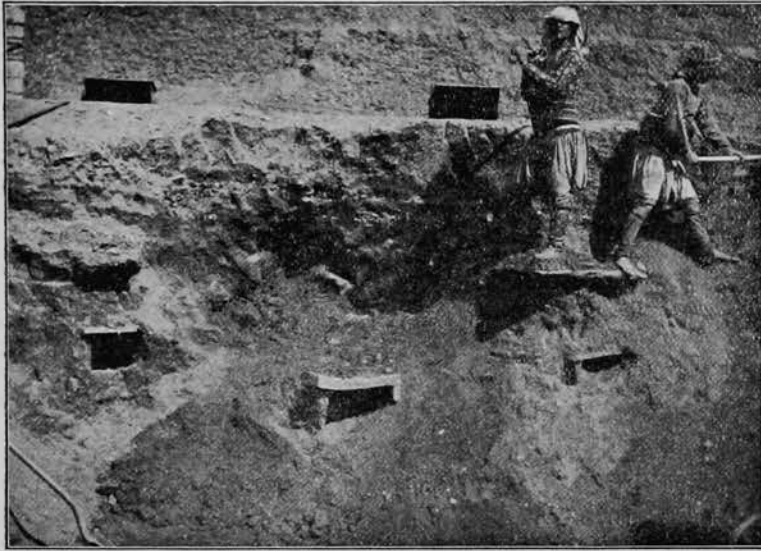


Ill. 99. Lion's Head from the Cornice of the Temple.



Ill. 100. West End of the Temple and Lydian Building. View from the North.  
Sardis Expedition I.

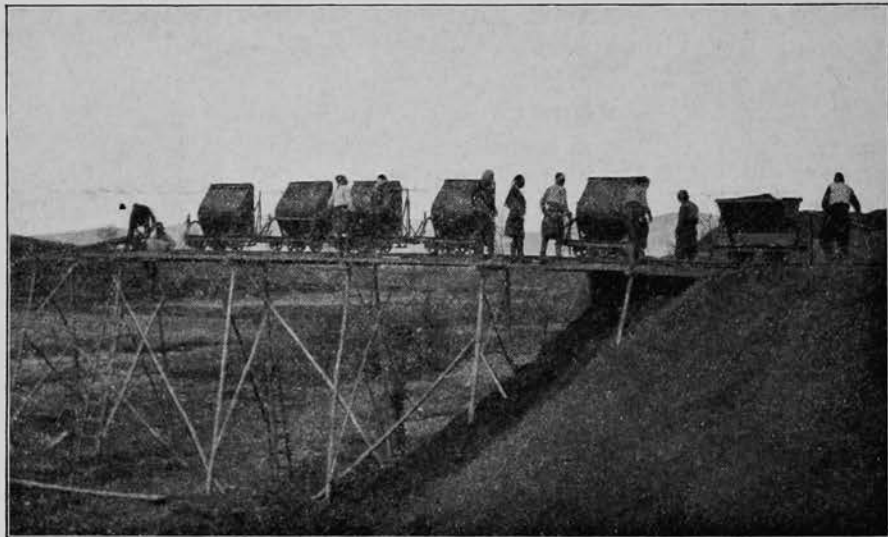
uninjured upon soft earth. No other fragment of the cornice was discovered, every other part of it having apparently been taken to the lime-kilns. Among other details of the temple found in the excavations were two perfect toruses from the bases of columns;



Ill. 101. Christian Graves directly South of the Church.

the scale of the building being such that the two main members of the bases, i. e. the scotias and the torus mouldings, were cut in two separate pieces of marble. These two great discs are almost exactly alike in every detail, being carved with upright overlapping leaves, but, curiously enough, they were discovered at diagonally opposite corners of the temple, one beside the base of the southeastern angle column of the peristyle, the other just beyond the north-

west angle (Ill. 100). The former perhaps belonged to the second column from the southeast end on the south side (Ill. 93), which is represented now only by foundations, and was discovered by MENDEL in his pits, whereas the original position of the other cannot be determined. To the south and southeast of the little church a number of graves were found, and it was evident that when these were made, the surface at this point sloped upward toward the south. Each grave was lined at the bottom with good tiles (Ill. 101), and each burial was covered over with large square tiles. The graves contained nothing whatever but remains of bones.



Ill. 102. Trestle for lengthening the Dump.

A serious question now arose as to the final disposition of the great quantities of excavated material. The dumps had become inadequate for ordinary purposes except with much labour and expense in the handling of the earth after it had reached the river bed. In order to overcome this difficulty, and to promote speed and efficiency,



a number of trestles were built (Ill. 102) out of poplar trees secured in the neighbourhood, and the railway lines were run out upon these, so that from seven to nine waggons could be emptied at once with no rehandling of the soil. A few words may be added at this point with regard to the treatment of the excavated earth with a view to the finding of small objects. Many of the upper layers contained nothing of interest; but all the earth was examined on the chance of finding something. The labourers were all suitably rewarded for finds of any sort, a book was kept with the records of each individual's finds, and it sometimes happened that a man's rewards at the end of a week were equal to his weekly wage. The work, as I have said in a previous chapter, was divided among four classes of men through whose hands, and under whose eyes, all excavated earth had to pass. There were first, the pick-men, one for each waggon, who watched the face of earth upon which they were working, and observed it as it fell; next the shovellers, two to a waggon, watched each shovelful as it passed from the ground into the waggon. If an object falling into the waggon was not instantly claimed by one of the shovellers, it was seized by the "arabagee" or carman, who inspected the earth in the waggon. After a waggon was tipped on the dumping place objects found belonged to the dump-men, and a small force of "irregulars", mostly boys from the village, were always seeking treasure at the base of the dump.

In this way each shovelful of earth passed under the scrutiny of several pairs of eyes, every pair seeing in each a possible *metalik*, *piastre*, or more. This scheme on the whole worked very well, yet some small losses were unavoidable. I recall an occasion when a pick-man handed me a fragment of pottery bearing an interesting design, which was not complete and had been newly broken. Every man responsible for earth

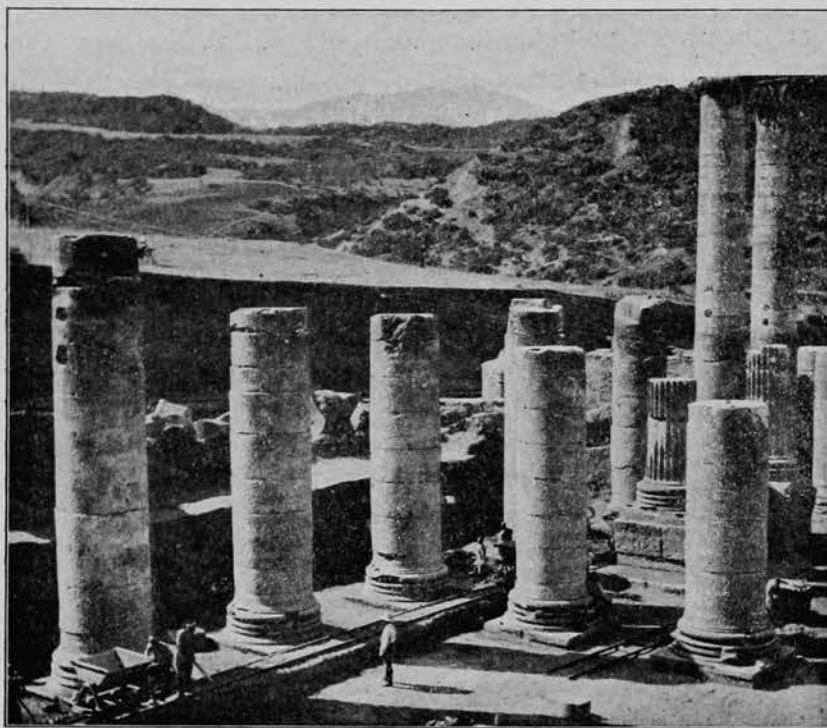


Ill. 103. East End of the Temple on June 6th, 1912.

passing out from the spot of origin was questioned, but no one had seen the missing fragment. An hour later it was brought to me by one of the small boys who had found it below the dump. One may say that there were opportunities here for the misuse of the reward system by the labourers; but of this there were very few instances.

Something also should be said with regard to our change in the system by which the keeping of records of the exact place of finding of objects in the excavations was facilitated. The use, adopted in the first season, of numbered and lettered stakes

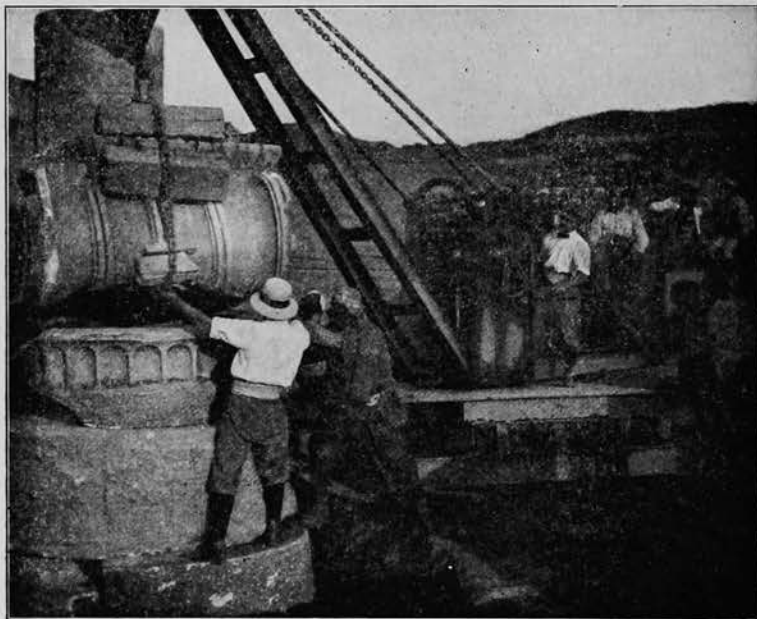
across the end and along the sides of the excavations, as described in a former



Ill. 104. East End of the Temple on June 10th, 1912.

chapter, (cf. p. 54) was found to be inadequate as the extent of the excavations increased. A new scheme was therefore devised. This consisted of two pairs of wires carried on high poles about two metres apart bisecting the excavations at right angles to each other. The wires carried rods between them spaced at the same distance as the old stakes had been; the rods being lettered and numbered as before, and visible from practically every part of the excavations (Ill. 103).

Early in June the laying bare of the Temple of Artemis was almost completed; on the sixth of that month there remained only one column-base and part of another to be freed (Ill. 103); five days later the last base of the last column, that at the northeast angle, was revealed (Ill. 104), and the temple stood forth in all its splendour. Somewhat earlier in the year it had become apparent that suitable disposition must be made of the many architectural details and larger inscriptions unearthed during the season. These were still lying about in disorder (Ill. 93) waiting to be set up in permanent positions where they might be studied and photographed with greater ease, and become ornamental features of the ruined temple. For this purpose the locomotive and the crane were brought into play. The great architrave block was

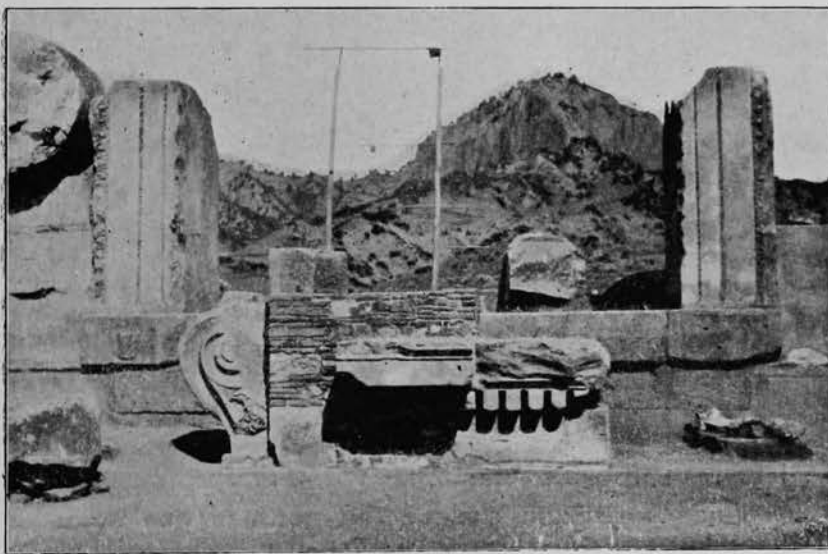


Ill. 105. Setting up fallen Details.

set in an upright position in the pteroma near the southeast anta; the drums that lay about the southeast angle of the peristyle were arranged in orderly fashion on the line of the column foundations of the south flank; a capital and the top drum of a column (Ill. 105) were set up together upon a bottom drum not far from the column of which these details had perhaps been component parts. Fragments of two parts of the southeast anta-cap were pieced together and mounted on the foundations of a column of the south flank (Ill. 106), and three other capitals on the south side were placed in permanent positions. The details of the great portal, consisting of one console, and fragments of the denticulated cornice of the doorway, were set in front of the portal on a sort of basis, where they could easily be observed, and would be comparatively free from injury (Ill. 107). On the north side there were fewer column-drums and other architectural details; but



Ill. 106. Fragments of an Anta-cap.



Ill. 107. Fragments of the East Portal.

here a big architrave block had long before been placed upon the top of the northeast anta, and a much mutilated capital was now set upon the plinth of the second column from the east on the north side, while other stones were arranged so as not to confuse the lines of the temple. Two illustrations (Ills. 108 and 109) show the east porch from two opposite points of view as it appeared at the close of the season of 1912. Ill. 108 should be compared with Ill. 93.

Having reached the time when the temple was entirely freed from the earth and débris which had hidden the greater part of it for many centuries, we may now survey the building in the light of the numerous features discovered, may trace its plan,



discuss the probable forms of its superstructure, and attempt to fix the approximate dates of its foundation, erection, and restorations. All of these matters are treated at greater length and with more complete detail in Volume II, which is devoted exclusively to Architecture. A more condensed discussion will here suffice. As has been mentioned in earlier pages, the temple was found to be preserved exactly in proportion at it was deeply buried. Fortunately enough of the original structure remains, even at the less well preserved west end, to give us complete data for the recovery of the original plan. The building covers a rectangle a little less than

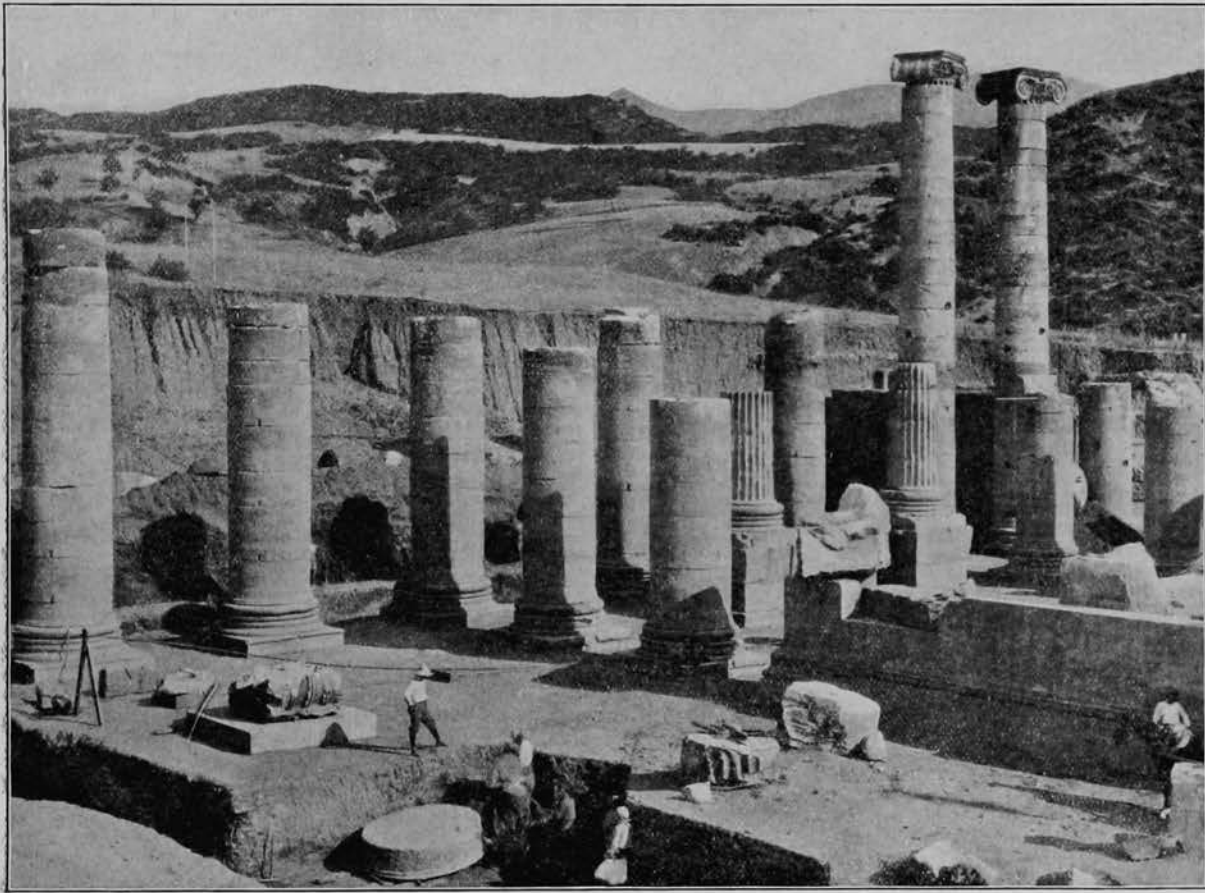


Ill. 108. East Porch of the Temple. View from the Southwest.

50 metres wide, and a little less than 100 metres long. These measurements include only the outside line of the column bases and exclude the steps. Thus we have a superficial area of almost 5,000 square metres, which gives the Temple of Artemis at Sardis fourth place among the Ionic temples of colossal scale in Greek antiquity, and fifth place if the Doric temples be included<sup>1</sup>. The plan was octastyle and pseudodipteral, with twenty columns on the sides. The porches were unique; for there were three columns in front of the antae, i. e. two between the end of each anta and the

<sup>1</sup> The Heraion of Samos is said to have covered 6,000 square metres, the Didymaion, 5,400; the Artemision of Ephesos, 5,240, and the Doric Temple of Apollo at Selinous, 5,500; the Corinthian Olympieion at Athens covered only 4,400 square metres.

front row of columns, and two columns raised on pedestals just within the middle pair, (cf. Pl. I); such at least is the plan at the east end, and it can almost conclusively be shown that the two ends were alike. The cella has two main divisions, a long cultus-chamber divided by two rows of six columns each, and a treasury or opisthodomos to the west with two interior columns. There were thus sixty-four exterior and fourteen interior columns all told. It should be understood that a temple of such huge scale did not have a solid stone krepidoma, or platform, and consequently had no true stylobate, or continuous course of stone, beneath the bases of the outer row of columns.



Ill. 109. East Porch of the Temple. View from the Northeast.

The walls had foundations of solid marble deeply laid, and each column stood upon its own independent marble foundation pier. The spaces between these piers, outside and inside the temple, were filled with earth and covered with a pavement of marble slabs about ten centimetres thick. The two interior chambers were on different levels, the floor of the larger one to the east being raised over a metre above the floor of the other which corresponds to the general level of the platform. The portal at the east end of the cella was approached by a flight of steps between parotids, for which there are complete foundations. The cultus-chamber was divided by a light wall or screen placed between the fourth and fifth pairs of columns from the east end.

The total number of twenty column foundations is preserved on the south side,

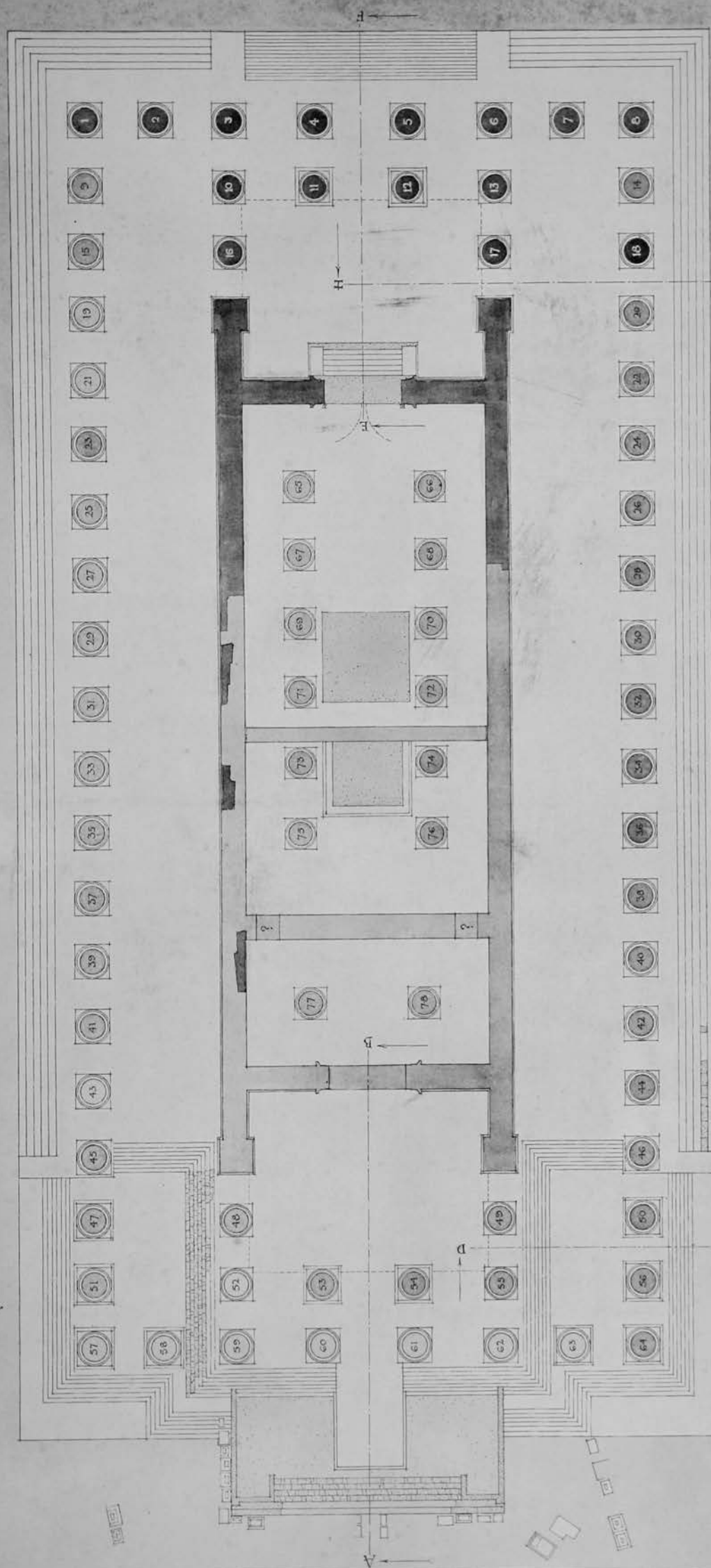
though six of the foundation piers for columns at the west end have been entirely removed, and the angle column to the northwest is represented only by fragments of its foundations and remains of its concrete casing. The foundation pier of the second column in front of the northwest anta is also missing, having probably been excavated for and removed, like the others, by quarrymen during the Middle Ages as described on page 49. Three piers are also missing on the north flank; the fifth, sixteenth and seventeenth, or numbers 19, 21 and 43 as shown on the plan.

Most of the foundation piers are preserved to their entire height; one in the west porch (No. 48) retains its plinth intact and another (No. 53) half its plinth. The marble foundations of the cella walls are quite perfectly preserved, and the actual coursing of the north wall begins with the northwest anta, and rises gradually, course by course, toward the east. A part of the first course of the west wall of the opisthodomos has survived; the north wall still shows two and three courses; but the south wall of the cella is not preserved westward of the fourth pair of interior columns. The eastern thirds of both side walls are, however, still standing in from four to seven courses (Ills. 108 and 109), and the two eastern antae to the same height, as is also the east wall of the cella with the jambs of the great portal. Two columns of the front row on the east are the famous "twins", which have so long stood as the grave-monuments of the temple. The six others in the same row are preserved in heights ranging from about a third of the original height at the south end to over half at the north (Ill. 109). All the interior columns of the east porch, six in all, are truncated by almost half of their original height, including the two columns raised on pedestals. Of the same height is the third column from the end on the south flank (Ill. 108); the second column is missing though its foundations are complete; the fourth possesses its plinth. On the north flank the plinth of the third column is in place. The only real problem connected with the ground-plan of the temple is found in the presence of the flight of steps descending from the north side of the inner porch at the west end (Ill. 100). These steps, of which there were originally seven, and of which the uppermost two have entirely disappeared, begin beside the northwest anta and extend westward to a point a metre and a half beyond the outside line of the westernmost column bases. Here they must have been returned and carried across the west end of the temple on a level directly above the ruins of the Lydian Building as it is to-day, a building possibly already buried at the time of their construction. The puzzling feature of these steps is that they descend into a narrow space in the pteroma, below its normal level and inside the foundations of the row of columns of the north flank; these foundations are now embedded in concrete, and form a high barrier in front of the steps. It is probable that some change has taken place here, probably in connection with the latest repairs upon the temple. This question is discussed at greater length in the volume on Architecture. No steps of any kind, or remains of such, were found at the other three corresponding points in the temple.

In examining the details of the superstructure as preserved we find that the base of the cella walls consisted on the outside of two plain courses below a fine large torus which was carried all around the building. Above this is a high plain course, beautifully finished, with an apophyge and fillet directly above the torus, forming a sort of



STANDING ABOVE 2M.  
FOUNDATIONS EXIST.  
CONJECTURAL.  
IN SITU.



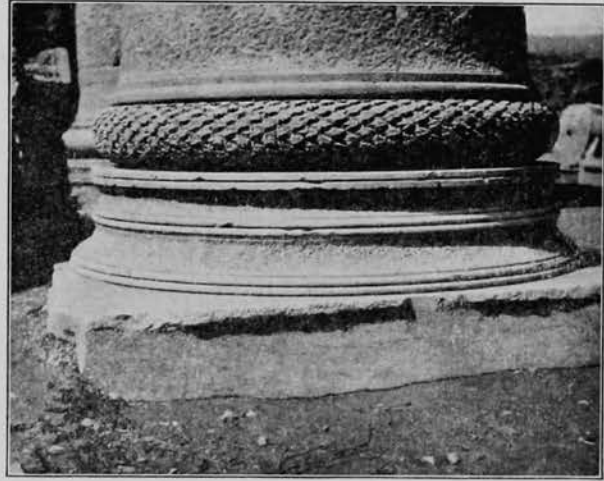
# TEMPLE OF ARTEMIS AT SARDIS RESTORED PLAN

SCALE 1:25

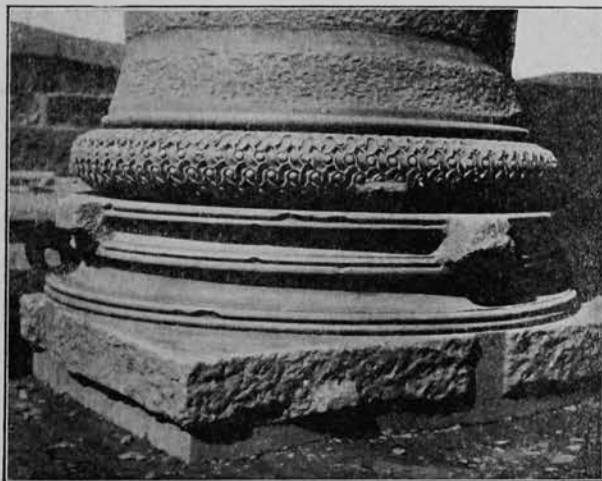


orthostate, or dado, below the slightly diminishing courses of draughted stone-work which compose the body of the wall (Ills. 63 and 108). The bases of the antae have a hollow moulding below the great torus and below this a second torus, on the level of the torus mouldings of the column bases. The faces of the antae are worked to a surface of wonderful smoothness in which the joints are hardly to be detected.

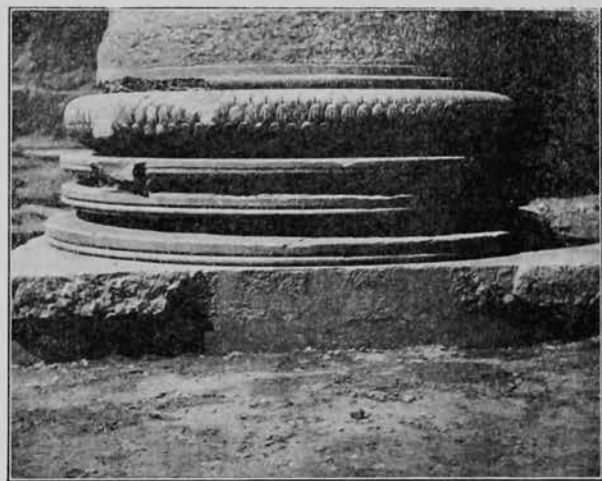
The complete columns are a little less than 20 metres high, and 2.11 to 2.06 metres, just short of seven feet, in diameter. The interior columns of the porch, i.e. those in front of the antae, two on each side, are of slightly smaller diameter than those of the outer row, to increase the effect of depth in the porch. All the bases are of the true Ionic form, with two scotias separated and bounded by pairs of reeds below a torus; but in many the scotias are unfinished. Three of the columns of the front row and all the interior columns of the east porch have richly carved toruses, the three of the front rank being the two immediately to the south of the main axis and



Ill. 110. Base of Column No. 6.



Ill. 111. Base of Column No. 10.

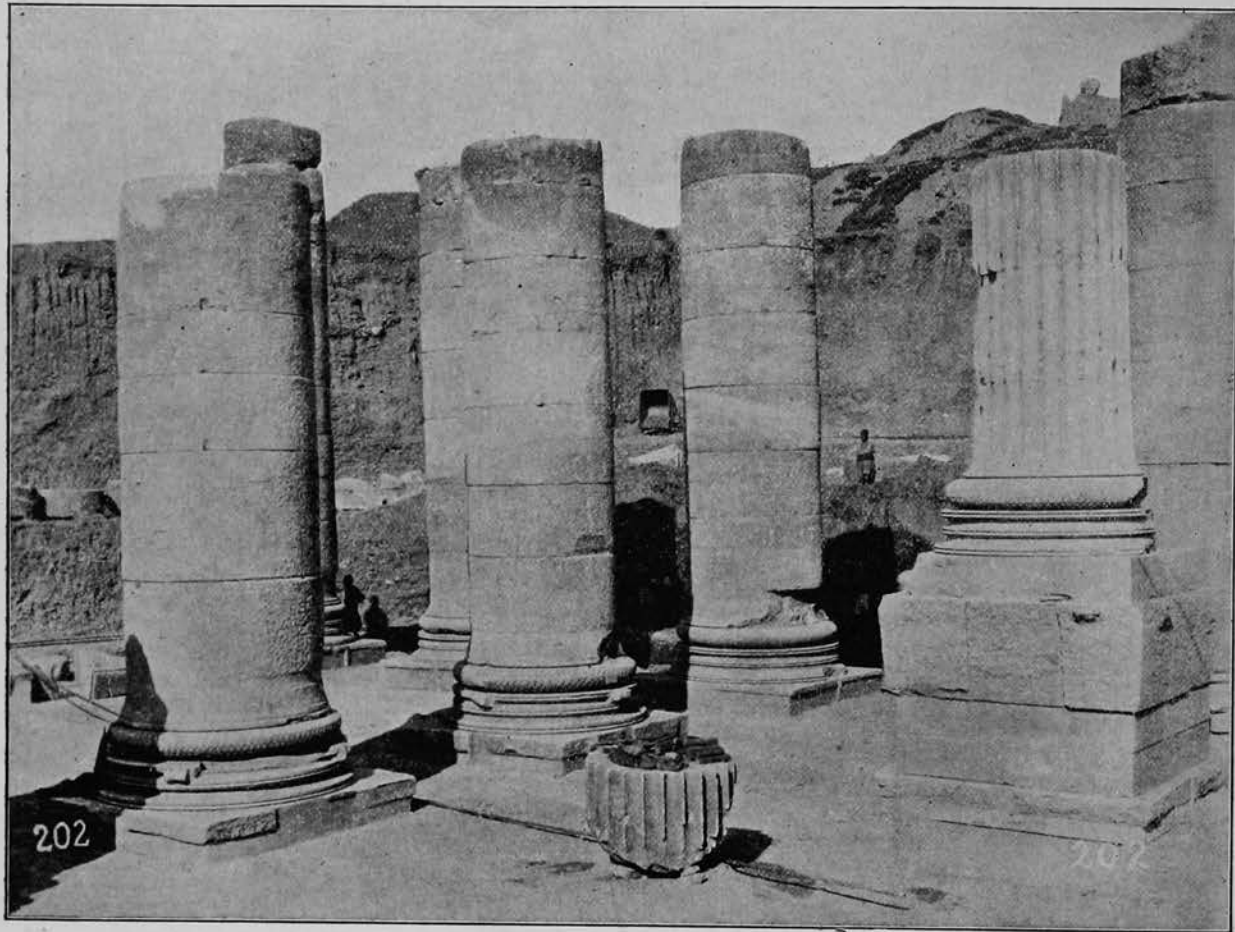


Ill. 112. Base of Column No. 16.

the first to the north of it — a curious lack of symmetry. The designs of the three are all different, the southernmost (No. 6) having an interesting pattern of oak leaves (Ill. 110), the next of upright rounded water leaves, and the third of horizontal water leaves poorly executed and bound with a fillet. Within the porch the designs of the torus carving differ; but symmetry is preserved on opposite sides of the main axis. Thus, on either side, we have a beautiful example of the braided guilloche (Ill. 111) in columns 10 and 13, and upright water leaves in Nos. 16 and 17 (Ill. 112). The shafts of



all these columns are unfluted and unfinished, though each has an astragal and a fillet worked upon its bottom drum, and other drums have finished bands with indications for the lines of the arrises. The torus mouldings of the two fluted columns are both carved with delicate upright leaves (Ill. 113). These two columns elevated on pedestals are of somewhat smaller scale than the others, the plinths and scotias, as well as the toruses of the bases, are highly finished, and the shafts are fluted. The shafts however show evidences of having been taken down and rebuilt; for the arrises have been broken off in many places at the points where two drums join, and have been mended

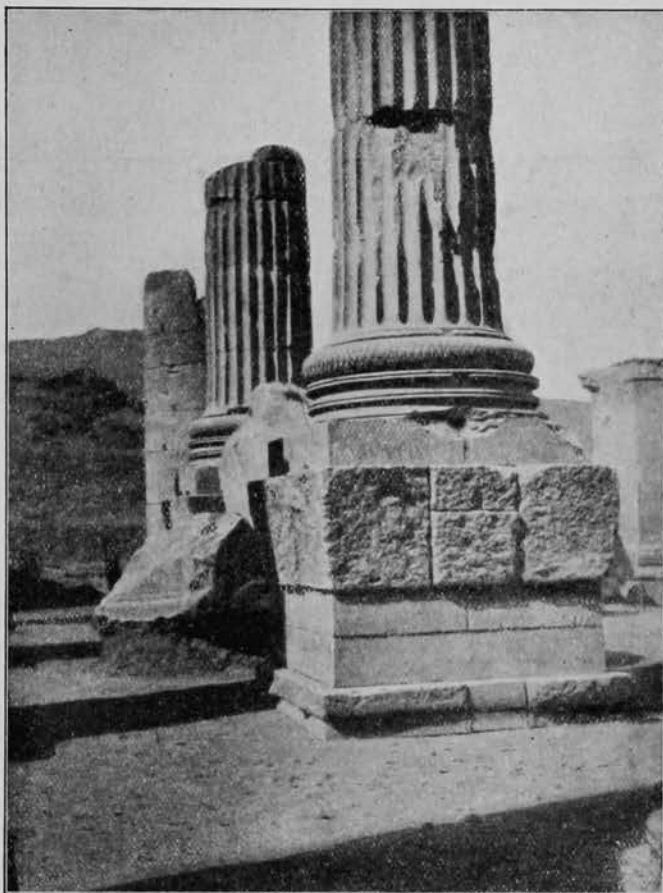


Ill. 113. Columns of the East Porch, looking Northeast from the great Portal.

again with great skill. The southern column has a short Lydian inscription carved on the apophyge of the shaft. The pedestals are composed each of a roughly finished projecting plinth, of the same height as the plinths of the columns near by, two finished courses, each about half a metre high, the upper projecting slightly in advance of the lower, and a rough "quarry faced" course about a metre high, which projects far beyond the courses below it and increases its projection toward the top (Ill. 114). Several of these rough stones were formerly parts of column drums as is shown by traces of flutings at the angles. They are perfectly fitted at the joints and were almost

certainly intended to receive sculpture in high relief, the greater projection at the top providing for an upper moulding and the greater relief of the heads and shoulders of life size figures, the feet and legs of which could be carved easily in low relief upon the two lower courses of the pedestal. The sculptures of the Pergamene Altar show that great reliefs were carved upon many blocks of stone fitted together. The position of these pedestals suggests a new plan for the sculptured pedestals discovered at the Artemision at Ephesos and now in the British Museum<sup>1</sup>. There is no suggestion, however, that the lower drums of any of these columns at Sardis were to be sculptured in the manner of the famous *columnae caelatae* of Ephesos.

The capitals which are still extant present at least three varieties, two of which I believe to be early and one a late copy. By a curious coincidence two of the types, one early and one late, are represented upon the two standing columns (Ill. 115). No one, observing the photograph presented herewith, can fail to notice that the right-hand capital has an abacus with egg-and-tongue carving of the Greek form with open tops, while the left-hand capital has the same ornament in Roman form closed by a fillet at the top, and that the channels of the volutes on the right are deep and curved, while those on the left are shallow and flat. The spiral moulding of the one is full and its curve free and graceful, while the same moulding in the other is thin and its curve restrained. Even the ornaments on the volute band are different, and a side view would show that the bolster of the early capital is divided by mouldings and carved with overlapping leaves, while the other is severely plain. It will be observed that the topmost drums of these columns are fluted, and this appears to have been true of all the unfinished columns. All of the capitals and fragments of capitals found in the excavations were of the early type; one of them can be seen in Ill. 108. They show that all the original capitals of the outer rows had foliate carving upon the volute band on the outer face and a simple rosette on the inside. The beautiful capital discovered in 1910 and illustrated in a

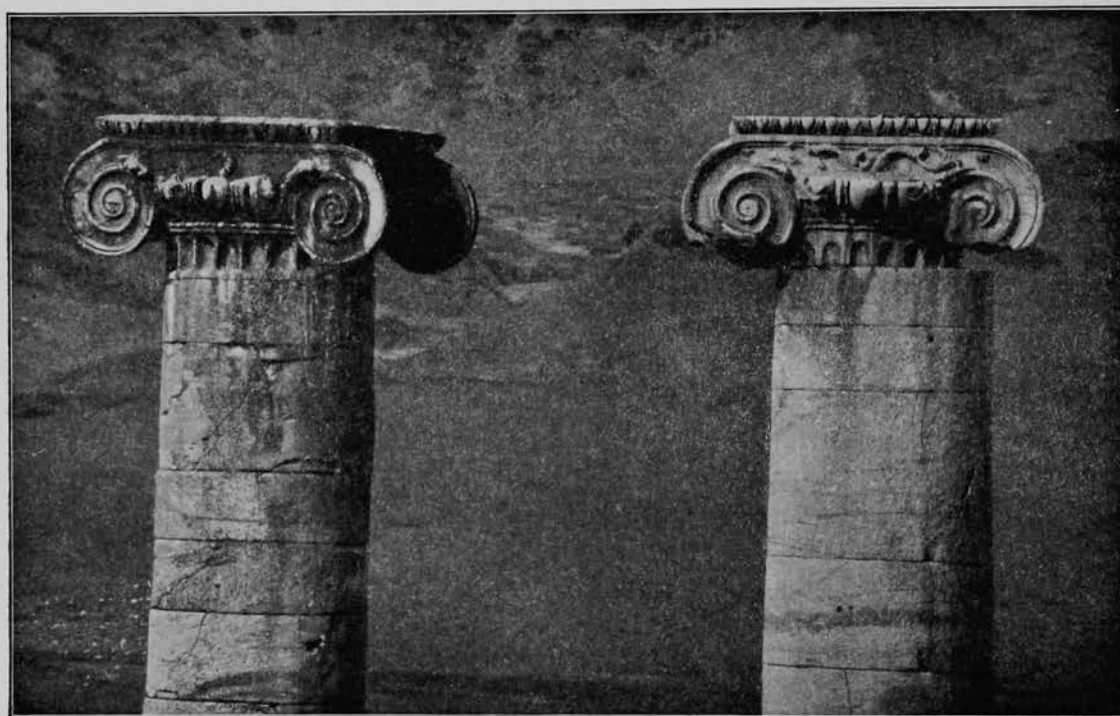


Ill. 114. Columns Nos. 11 and 12.

<sup>1</sup> cf. W. R. LETHABY, *Greek Buildings represented by fragments in the Brit. Mus.* London, 1908. pp. 4—10.

photograph in an earlier chapter (Ill. 46) is of the scale of the elevated and fluted columns in the porch, and belonged to one of these columns at one end or the other, or perhaps to one of the columns in the interior of the cella, which were of about the same scale. No angle capital has yet been found. The architrave has two broad bands (Ill. 108) below a salient unornamented cyma recta. No frieze is represented in any of the fragments that have come to light up to the present, and the only part of the cornice that has been found thus far is the great lion's head which served as a waterspout in the uppermost member (Ill. 99). It may be that the frieze was omitted, and that we have here an example of what has been called an architrave order.

Fragments were found which are sufficient to complete a restoration of the anta-cap (Ill. 106). The lower member, or necking, corresponding to the volutes of the capitals, is a sort of frieze of very simple wreaths beneath a bead-and-reel and a carved

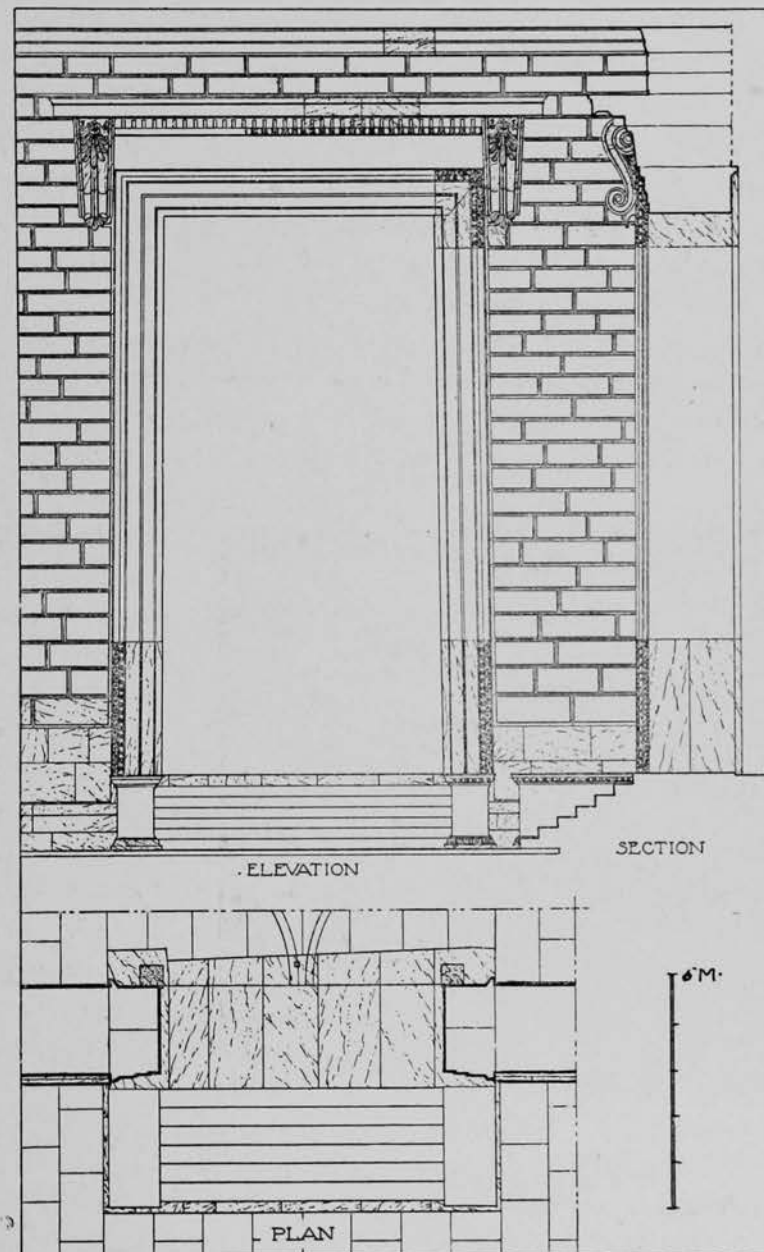


Ill. 115. Capitals of the two Standing Columns, View from the East.

Lesbian cyma all on one block; the upper member consists of a bead-and-reel below a very massive egg-and-tongue of about the same scale as the echinus of the capitals, above which was a projecting corona and, probably, a cymatium which is broken off. The whole composes a new and beautiful design. The condition of the wall about a metre and a half high below the great portal, and the foundations in front of it, give conclusive evidence that the entrance was approached by steps between projecting parotids. The huge stones which compose the threshold show holes in which the bronze hinges were inserted and the beginning of grooves for the wheels upon which the great doors were swung open (Ill. 116). The jambs of the portal are triple banded,



with carved mouldings separating the bands (Ill. 117), the outermost mouldings are a bead-and-reel, an ovolo carved with egg-and-tongue, and a deep cavetto with exceedingly rich and delicately executed anthemions or palmettes. Above this feature, which was of course identical on jambs and lintel, was a frieze, probably ornamented, the height of which is to be determined from a profile on the consoles that flanked it. Above this



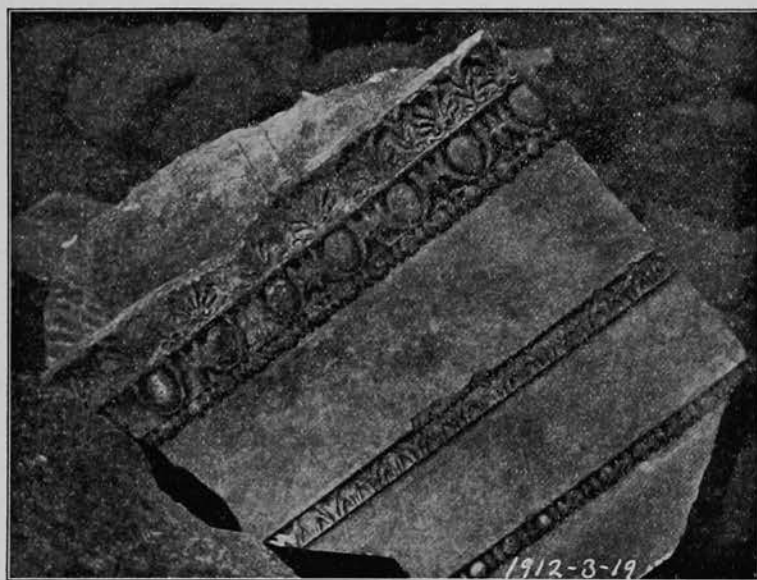
Ill. 116. East Portal of the Temple.

were a dentil course, a projecting corona, both of which are represented in fragments (Ill. 107) and, perhaps, a cymatium. The huge consoles which completed the ornament on either side are charming examples of graceful design and delicate carving. Among the details belonging to the doorway was found a high, rather flat, moulding which

was probably the epikranitis, or crowning feature, of the wall above the portal. It is interesting to reflect that, excepting only the north doorway of the Erechtheion in Athens, this is the only temple portal of its date and style which can be restored with practical certainty from existing details, all other doorways of temples of the period having been destroyed.

There is evidence in many of these details to show that the temple was not entirely finished at the time when it was finally abandoned, and a more minute examination gives reason to believe that the building had undergone at least one period of repairs and restoration. Much of the carving, especially that at the east end, is only blocked out, and much is in a half finished state; only the capitals, a few of the carved bases, and the great portal with its ornaments, were entirely finished. In the ruins at the west end, on the contrary, every column drum that was found was fluted (and these represent both scales), every other fragment of the columns is finished, and all the mouldings, save one in the interior, are in a completed state. But it is probable that the temple was in use before the end of the fourth century, and as I believe, much earlier. It had certainly been roofed in and covered with marble tiles, and an important document had been inscribed upon the walls of the treasury before 200 B.C. Most of the finished details belong to a building erected in the fourth century, and among the uncompleted

details some are also of the same period. Other unfinished details have the appearance of being somewhat later, others much later. These latter are proved to be so by an inscription, on the fillet at the foot of column No. 4 which, in lettering of the 2d or 3d century A.D., refers to the columns as "rising again". We have already noted a comparison between the earlier and the later forms of capitals as represented by those of the two standing columns (Ill. 115); other comparisons may be



Ill. 117. Fragment of the Jamb of the Portal.

made between the types of column bases even though both are unfinished. Some of the carved toruses are certainly Greek while others have little resemblance to work of a good Greek period. The earlier scotias, some finished, others unfinished, have the lines of the early Ionic bases in Asia Minor, firm and not spreading, with deep undercutting (Ill. 111); those which appear to be later (Ill. 110), though none of them is entirely finished, could never by any method of carving be converted into the older type. It is interesting to note that even the early toruses and scotias still retain their lifting-bosses (Ills. 111 and 112) as evidence that they are

incomplete, and that the later bases, although still uncarved, do not have these features. But in the case for almost every unfinished detail there is a model for its completion. Each plinth was set in place with rough edges to protect it during the process of building; but each has a small carefully worked section (Ill. 111) on all four faces, and lines on the top to mark the finished square. The reeds and cove members of the bases are brought to a finished state in one or more places. The torus mouldings are all finished, except for occasional lifting-bosses; because they could not be worked after they had been set in place. The unfinished shafts have highly finished bands with lightly incised lines indicating where the two edges of the arrises were to come; in every case of departure from a straight descending line an apophyge, perhaps not more than twenty centimetres wide, was worked at intervals not widely spaced, and the future profile of almost every moulding has been carved in small sections; showing that some master hand wrought samples of every one of these details for the guidance of the artisans in their final work.

After minute observation and close, though by no means final, study of the monument as it stands, I have come to the conclusion that the temple, begun in the fifth century B.C. and continued during the fourth, was in an unfinished state, so far as the final stone cutters' work was involved, when it suffered injuries sufficiently severe to necessitate taking down the columns of the east porch. This may have been the result of the historical earthquake of A.D. 17, or of some earlier catastrophe. In any event, it seems certain that most of the shafts at this end had to be rebuilt. The two raised columns, which were of smaller scale than the others, were doubtless taken down and re-erected upon new pedestals; for the arrises of the fluted shafts have been mended at the joints, and the pedestals contain blocks cut from old column drums. Some of the capitals were taken down and put back again upon new shafts; others, which had been injured, were replaced by copies none too good. Several of the lower members of the bases — the scotias — also had to be replaced; but a number of the old torus mouldings, which are each cut out of a separate block of stone, were reset upon new scotias; for torus mouldings of the beautiful profile seen in some of these examples are certainly not of Roman make, and the scotias below them could never be made to resemble the true Greek scotias that appear in other of the bases. On the other hand we have several specimens of torus mouldings of nearly semicircular profile which are almost certainly Roman, e.g. directly below the inscription at the foot of column No. 4 recording its re-erection. But even the second attempt to finish the building was not successful; for the temple was either overwhelmed by another earthquake, or was simply abandoned before the flutings of the new shafts were executed. In connexion with the extensive repairs upon the temple, an attempt was made to render secure the foundations of some of the columns by embedding them in concrete. Trenches were dug outside the front row and along the south flank and between the columns of these rows, and were filled with concrete. The columns of the inner row of the west porch and groups of columns on the north flank were similarly treated. In some cases the trench was wide, in others narrow; in one case it was filled to the top with concrete, in another only half way up; so that the concrete, when exposed to view, presents no symmetrical plan. In this way we may account for the absence



of outside steps, excepting a row of blocks representing part of an intermediate step near the southwest angle; unless we assume that even these lowest details, like the pavement, were removed by the quarry-men who despoiled the temple in the Early Christian period.

The little church at the southeast angle (cf. Ills. 92 and 93) was built when the



Ill. 118. West Wall of the Church.

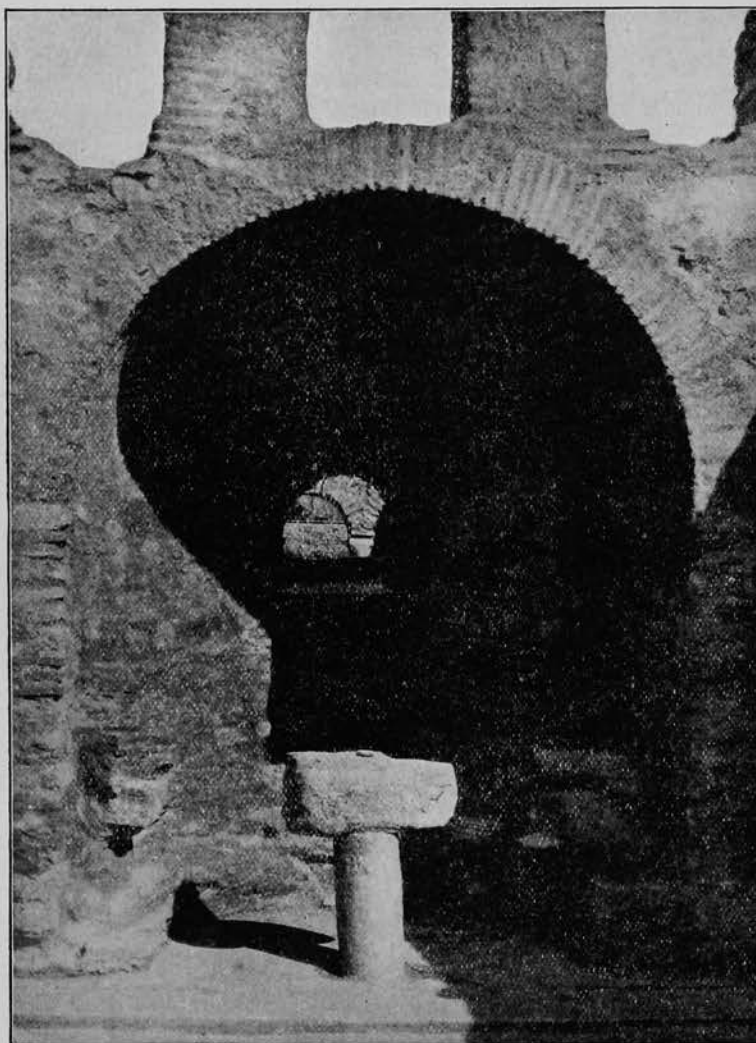
earth about the temple had risen to a level about a metre and a half above the platform (Ill. 118). It is nearly square in plan (Ill. 119), with a narrow projecting apse, one doorway at the west, and another near the west end of the north wall. The apse is covered by a well built half dome of brick, and has a single round-arched window. There were three such windows in the wall directly above the apse. Immediately behind is a second apse the width of which is almost equal to that of the church. It has a half dome, partly ruined, and three windows. Walls projecting from this apse on either side are exactly in line with the side walls of the church, yet church and apse are separated from top to bottom (Ill. 92). It is difficult to determine whether the outer apse

was the original sanctuary of the church and after its collapse was replaced by the smaller one, or whether there were originally both outer and inner apses, as seems to have been the case in certain churches in Eastern Asia Minor<sup>1</sup>. The pavement of the church, made up of large marble slabs, was found in good order, but the plaster had fallen from the walls carrying with it whatever painted decorations there may have been. In the centre of the apse stands the primitive altar, which was found *in situ*, and is perhaps the earliest Christian altar known (Ill. 120). It consists of a roughly cut block of sandstone set upon a short section of column about 30 centimetres in diameter. It is thus a true table-altar with a single support. The roughness of this altar stone may mean that it had some particular religious significance; since marble, not stone, was used for the floor and in certain exterior features. It is plain that the two small columns discovered in 1911 standing upright in the south pteroma of the temple (cf. Ill. 63) were connected with the church; for they are set on axis with its entrance and on the same level. The three fairly large windows of the outer apse,

<sup>1</sup> BELL, G. L. Notes on a Journey through Cilicia and Lycaonia. *Revue Archéologique*; 1906, I, p. 386 et seq.



protrude from the bank of earth, coming out slowly as the excavations progressed. Even the gable of its ornamented top bore Greek lettering. The second line below the moulding, contained the name of GAIOS IOULIOS KAISAR, and for a while we thought we had found an edict of the great Dictator, until there followed: "*the eldest of the sons of Augustus*". Work was concentrated at this point with the expectation that the stele might be quickly unearthed, but it seemed to have no end, and when finally



Ill. 120. Apse of Church with Altar.

the whole stone was revealed there were counted 139 finely written lines. Our disappointment at finding that the stone was not set up by "the foremost man of all this earth" was diminished by the discovery that the inscription was an important one, containing decrees of the League of the Greeks in Asia and of the Sardians honoring a citizen of Sardis, a letter from Augustus to the Sardians, and much new information as to the relations of the cities of Asia to Rome and to AUGUSTUS, and as to the internal affairs of Sardis. The stone was set up soon after September in the year 1 B.C. For us the most important part of the inscription comes at the very end, where a reference<sup>2</sup> shows that the Temple of Artemis which we had just excavated was in the same sacred precinct with a Temple of Zeus

Polieus. It was stimulating to learn, just as soon as one great temple had been excavated, that somewhere near by another was waiting to be brought to the light of day, and speculation was rife among us as to the probable direction in which the "new" temple might lie. There is a large bronze coin of Sardis<sup>3</sup> one face of which bears the façades of two octastyle temples side by side; above that on the right is a shrine containing a representation of the famous *xoanon* of Artemis

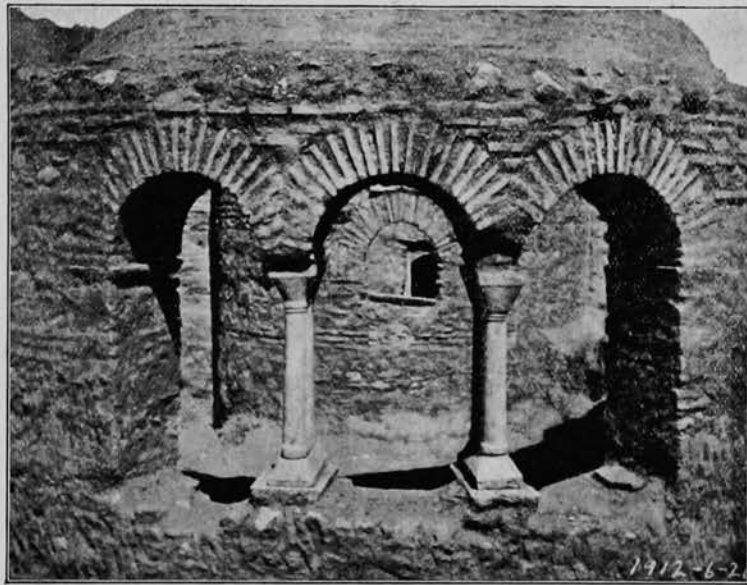
<sup>1</sup> cf. *A. J. A.* XVIII (1914) pp. 321—362, where this inscription is published in détail.

<sup>2</sup> mentioning "the Residents in the sacred precinct of Zeus Polieus and of Artemis": *A. J. A.* XVIII, 1914, p. 336.

<sup>3</sup> *B.M. Catalogue of the Coins of Lydia*, Pl. XXVII, 10.



which appears on many coins; while in another shrine over the temple on the left stands a male figure. This is probably the statue of Zeus Polieus. The historian ARRIAN in his account of the visit of ALEXANDER THE GREAT to Sardis tells of his founding here a temple to Zeus Olympios<sup>1</sup>. Commentators on this passage in ARRIAN's *Anabasis* infer that ALEXANDER was upon the Akropolis when he made the choice of a site for his new temple, and that the place chosen was also on the Akropolis. But careful reading of the passage will, I think, convince any one that the wording does not require such an inference; indeed it seems more likely that the site chosen was not upon the hilltop, and that, although ALEXANDER originally intended to place the temple there, the portent of the storm made him select another site. The most interesting information in the passage is that the place, wherever it was, was the site of the old palace of the Lydian kings. We may well doubt whether the palace of CROESUS stood upon a mountain pinnacle so high as the Sardian Akropolis; considerations of space and of water supply alone would have made that site undesirable. ARRIAN wrote his account over four hundred years after the event which he records; and as to his authorities we know nothing. He may easily have confused two epithets of Zeus and have written *Olympios* by mistake for *Polieus*. Or the old palace and the temple of Zeus may not have been upon the Akropolis, even if he thought that they were there. In any event reliance can scarcely be placed upon a statement such as this, which occurs incidentally in an anecdote. Taking ARRIAN's testimony for what it may be worth, and adding to it the definite evidence of the long stele inscription and of the coin, it seemed that we had good reason to look forward to the next campaign, with the prospect of discovering a temple of Zeus certainly older than the first century, and probably belonging to the Alexandrine period; and with fair chances of finding beneath it the remains of the Lydian royal palace.



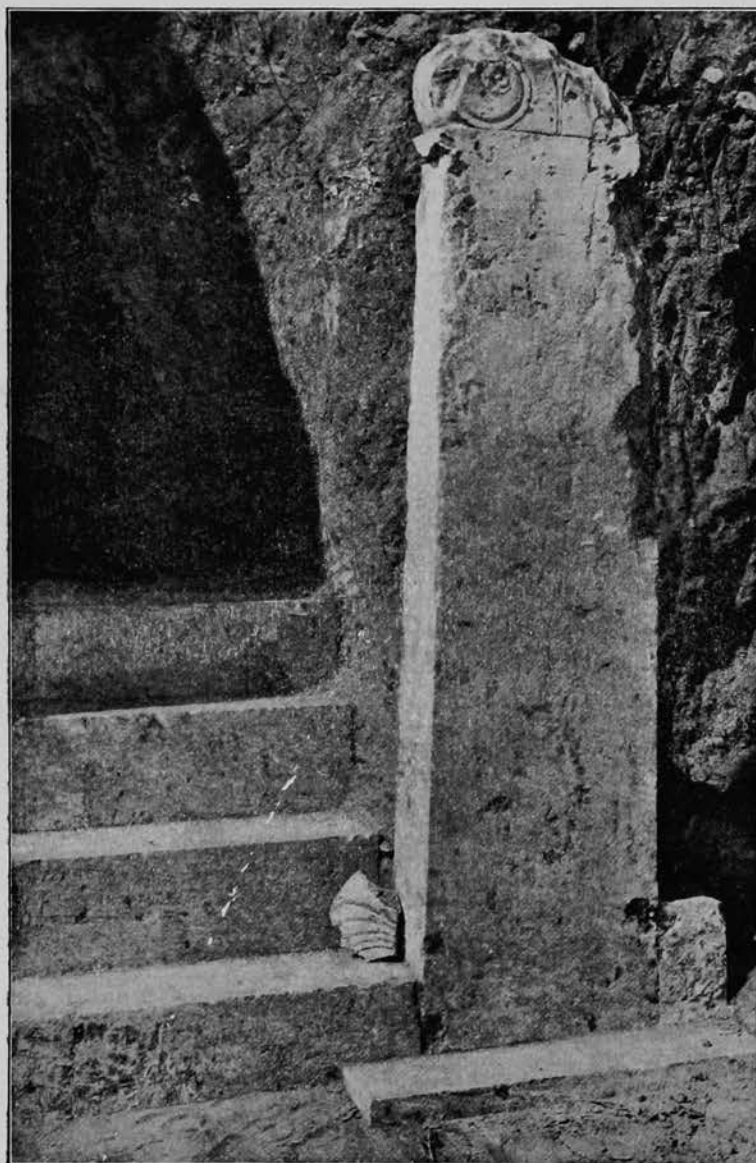
Ill 121. Windows in the outer Apse.

## 2. EXCAVATIONS AT THE NEKROPOLIS.

The discovery and excavation of tombs was continued by Mr. BUCKLER during the season of 1912 on the east face of the Nekropolis Hill, and was extended round

<sup>1</sup> *Anabasis*, 1. 17. 6.

to the north and south faces, as well as to several slopes and deep valleys and ravines behind the first hill and at the very foot of the mountain. Tombs were found practically everywhere on the west side of the river, directly opposite to the temple. We were so fortunate this year as to discover a tomb of the Lydian period almost in its original state. It is situated on a very steep slope on the north side of the first hill, and was probably buried in an early landslide; for it was not crushed in, nor had



Ill. 122. Steps and Stele of a Lydian Tomb.

it been used a second time unless perhaps at a quite early date. It also represents a type slightly different from the ordinary one described on page 56. The entrance was approached by a broad flight of four steps composed of well wrought blocks of white limestone. At either end of the steps stood tall stelae, one of which, though perfectly plain in other respects, preserved a part of its ornamental akroterion (Ill. 122). The stelae retained traces of painted ornamental borders, and probably bore painted inscriptions which have disappeared. The opening into the tomb chamber is now simply the end of a wide passage with double pitched ceiling; it probably was originally closed with a wall and doorway, since destroyed. The single chamber, instead of having couches for the dead as in many early examples, was provided with three large limestone sarcophagi one of which was embedded in the floor. The tomb had been violated, probably after the landslide which buried the steps and stelae and ruined the front wall of the tomb; but the rifling had not been completely successful; for some pottery was found in place, whereas other specimens were lying broken just inside the entrance, and some jewelry upon the floor. The sunken sarcophagus which had not been detected, contained the bones of a large man, his gold ring and his seal; his head was found pierced in front with

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some large pointed instrument, making the wound which probably caused his death. The skull crumbled to dust almost immediately after its exposure to the air.

During the excavations in this quarter, we stumbled, a little farther west, upon one of the most important discoveries ever made at Sardis. While digging on a steep slope looking toward the northwest we found just below the surface a thick, strongly built wall, which appeared to be of late Greek or early Roman date, and we decided to remove part of it in order to discover what might be behind. Presently stones bearing Lydian inscriptions began to come out, and the whole wall was then torn down with the result that eleven Lydian texts, complete or nearly so, were brought to light. These were carved on thin blocks which had been parts of tall stelae, and several ornamental akroteria belonging to these stelae were also recovered.

The work of demolishing the wall, which apparently had been built as a retaining wall to support some large monument or to prevent land-slips, consumed several days. On the morning of May 24 while we were at breakfast I was called to the telephone — for we had introduced this between the house, the temple and the tombs — by STEPHANOS ZEPATOS, a Greek assistant, who had been left by Mr BUCKLER in charge of the work at the tombs. In an excited tone he announced that a stone had just been unearthed which, in addition to a Lydian inscription, bore



Ill. 123. The Lydian-Aramaic Bilingual Inscription.

also another equally long in some script neither Greek nor Latin which he had never seen. He had cleverly recognized the importance of a bilingual inscription. We all hurried to the spot to find a Lydian text of eight lines (Ill. 123) accompanied by one of similar length in strange Oriental characters. An emendation of the Lydian text was represented by a similar correction in the other, so that this seemed almost certainly to be a translation. As there was no Orientalist in our party, we were obliged to wait several weeks before we learned that the second inscription was Aramaic and fairly translatable. The texts were of course funerary in character; the first line, missing in the Lydian, but supplied in the Aramaic text, gives a date in the tenth year of ARTAXERXES. Dr. ENNO LITTMANN, who has published in Volume VI, Part 1, of this series several of the inscriptions found this year, believes that this refers to either the first or the second of the kings of that name and denotes either 455 — not 445, as in *Sardis* VI, 1, p. 23 —



or 394 B.C. The inscribed part of the stone had been above the middle of the stele, and its carved cap, a charmingly designed anthemion, was found at the same time (Ill. 179 forward). This discovery, as Dr. LITTMANN shows, made it possible to take the initial steps toward deciphering this new old language. The tomb described above gives us a clear idea of the original use and position of some at least of these Lydian stelae. It is probable that the great nekropolis was filled with hundreds of such shafts in limestone and in marble. Some were placed in pairs on either side of the entrance to tombs. In other cases they may have lined the sides of the long approaches to the entrance, as the stelae were placed in the Nabataean tombs of the Haurân<sup>1</sup>.

A very considerable amount of Lydian pottery was found during the season, some in perfect condition, and some broken, but easily repaired. The specimens discovered in the "Stele Tomb" described above were of special importance, not so much by



Ill. 124. Objects from a late Lydian Tomb.

reason of their beauty as because among them was found a complete piece of Attic black-figured ware dateable within the second half of the sixth century. There were also a few little terra-cotta masks and animal figures (Ill. 124). The pieces of Lydian pottery in the group, only two of which are shown in the photograph, are of poorer workmanship, as regards both manufacture and decoration, than most of the Lydian ware discovered thus far. They probably represent a period immediately following the end of the era of Lydian greatness, at the time of the Persian conquest, when the native art was beginning to decline, and imported Attic wares were being introduced to take their place. The forms are cruder, the finish less perfect, and the glaze much less hard and durable. Some of the terra-cotta objects in the group retain their colour; the dove being treated in grey and blue upon a deep red pomegranate. Some

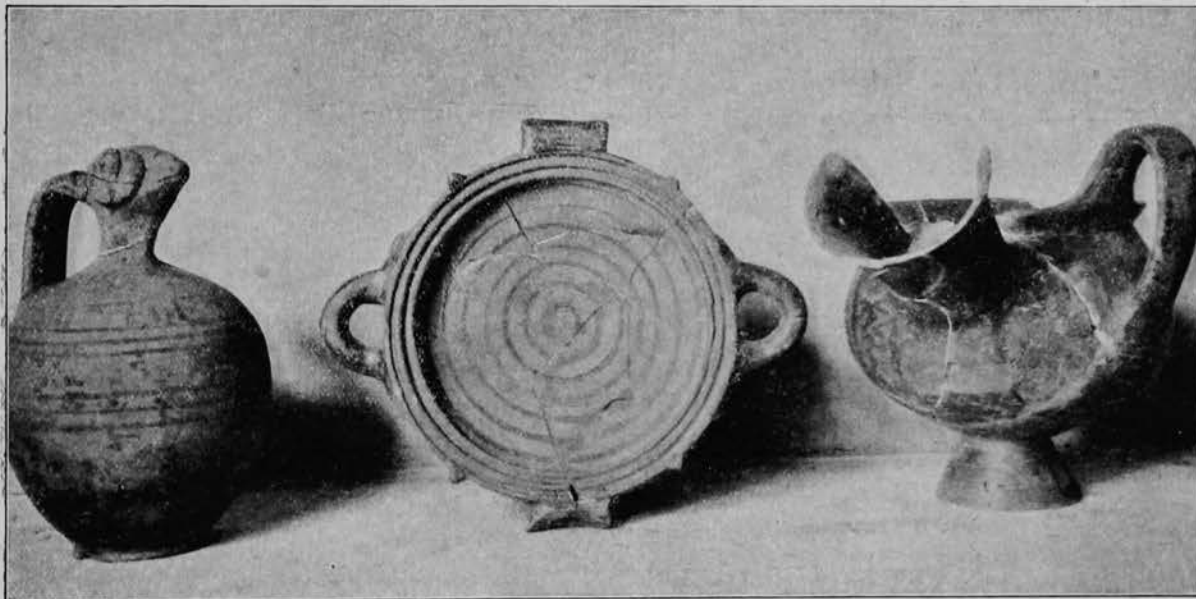
<sup>1</sup> *Publications of the Princeton University Archaeological Expeditions to Syria*, II, A. p. 206.

very beautiful pieces of earlier Lydian pottery, fifty or more in number, were found in a crushed tomb at the top of a knoll far up in a ravine at the foot of the Nekropolis mountain. The original form of the tomb could not be ascertained because the



Ill. 125. Pottery from one of the Earlier Lydian Tombs.

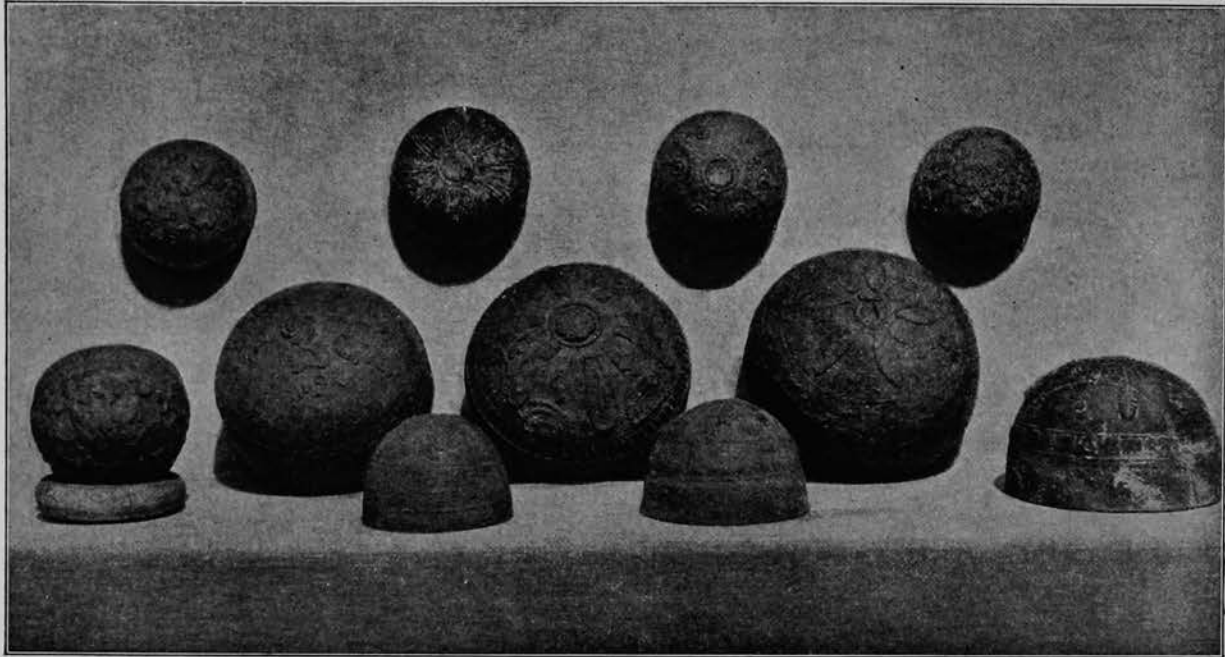
contours all about it had been damaged by erosion; but the pottery represents a great variety of shapes, decorations, and glazes (Ill. 125 and 126). There are beautiful



Ill. 126. Lydian Pottery.

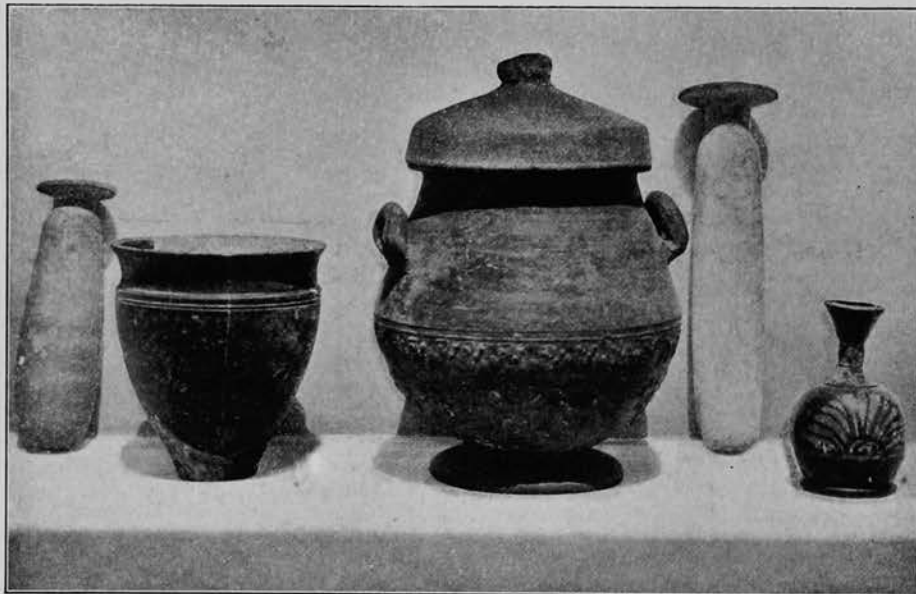
examples of the hard Lydian glaze laid on with broad sweeps of the brush, and ornamented with formal decoration in bands of white and yellow, or "marbled" by twisting the brush in loops and waves; examples of the finest white native "slip"

banded with black or red, and slips of yellow with many bands of brown or red. There are drinking vessels large and small, tall stands, jugs and bottles, one of which



Ill. 127. Moulded Bowls of the Hellenistic Period.

is shaped like a flask. One piece is a trick jug (Ill. 126) perforated at the bottom and having a ram's head at the top with a hole in it. The jug was filled by immersion,



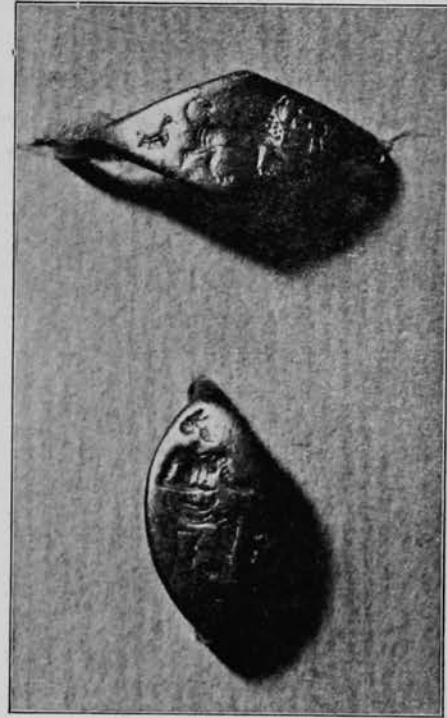
Ill. 128. Moulded Ware, Black and Red-figured Wares and Alabastra.

and contained the water so long as the thumb was held over the hole in the head; when the thumb was removed the jug became a sprinkler. Another piece is a curious



kind of drinking bowl (Ill. 126) with a handle for the right hand, and a spout widening out to accommodate the mouth; at the base of the spout is a strainer showing that a brew of some sort, which had to be strained at the time of drinking, was served in the bowl<sup>1</sup>. A third is a high jug, of a thinness almost like that of an egg-shell, covered with a fine glaze of coral red and decorated with a yellow slip in loose spiral waves about its lower half. With these pots was found a small jug in early Corinthian ware (Ill. 125) which will be useful in dating the contents of the tomb. The later pottery, that of the Hellenistic period, was represented in the finds of the year by a large number of pieces in unglazed, undecorated vases of various shapes, by moulded bowls presenting a great diversity of patterns (Ill. 127), a few examples of larger pots with moulded ornament (Ill. 128), pieces of plain black ware, and a few small late jugs in red-figured ware (Ill. 128). Good alabastra were found in tombs with pottery of widely different dates and, in one, a large alabaster jar of fine quality in perfect preservation.

Terra-cotta masks, large and small, glass bottles in coloured patterns, bronze mirrors and vessels of bronze were added to the number of these objects discovered during the preceding year. Our collection of clay lamps was rapidly becoming important, and interesting from its variety of types, shapes, clays, and decorations. Gold ornaments continued to come to light in even greater quantities than in 1911.



Ill. 129. Gold Rings.

Ill. 130. Cast of Seal, with  
Archaic Artemis.

Ill. 131. Cast of Cylinder Seal.

Many of the necklaces and ear-rings were of the same general types as those found in that year. Two gold seal rings deserve special mention (Ill. 129), the bezel of

<sup>1</sup> For a fuller description, see *A. J. A.* XXV, 1921, pp. 114—117.  
Sardis Expedition I.

one bearing an engraved lion of archaic form, the other a seated female of slightly later date. Numerous additions were made to the collection of Lydian engraved gems, or seals. One large chalcedony of conoid shape bears an intaglio representing the Archaic ARTEMIS (Ill. 130) holding two lions aloft by their tails, a group almost identical with the well known bronze relief stele from Olympia which is usually dated in the seventh century B.C. All these seals are of the best quality from the standpoint of technique, and most of them retain their gold or silver mountings; one of the most interesting, a cylinder seal, represents a king, deity, or genius, standing upon the heads of two winged and crowned man-headed lions, in combat with two griffins (Ill. 131).

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Ill. 132.

## CHAPTER VI.

### THE SEASON OF 1913.

#### I. EXCAVATIONS AT THE TEMPLE OF ARTEMIS.

To our personnel in the fourth season were added Mr. LLOYD T. EMORY, C. E., who was to make a survey of the environs of Sardis, and Messrs. FREDERICK M. GODWIN and PHILIP STOEVEY as general assistants. After the work had begun, Professor ENNO LITTMANN, then of the University of Strassburg, but later of Göttingen and Bonn, came out to work upon the Lydian inscriptions and to familiarize himself with their original surroundings. Before the end of the season there arrived Mr. WILLIAM WARFIELD to write a report on the geology of Sardis, and Mr. L. RODMAN PAGE, C. E., to study and survey the ancient aqueduct. AZIZ Bey, an attaché of the Ottoman Museum, was our new commissioner. The season of 1913, like that of 1911, opened with snow, and the excavations lay partly hidden for several days.

At the end of the season of 1912 the temple of Artemis had been left in the bottom of a great pit (Ill. 132), the end and sides of which, on the east, north and south, it was now proposed to carry back in order to enlarge the area about the building, and in the particular hope of finding remains of the temple of Zeus which the discoveries of the preceding season had led us to believe might be near. On



page 114 are mentioned an inscription describing the temple of Zeus Polieus as being in the same sacred precinct with that of Artemis, and a coin of Sardis which shows the façades of two octastyle temples side by side. In addition to this evidence two marble drums had been found beyond the northeast angle of the temple of Artemis, which, according to our measurements, did not belong to any of the columns of three slightly different diameters known to have formed part of that temple, and did not fit in with the restoration based upon its other architectural details. An inscribed tablet of the 1<sup>st</sup> century B. C. had also been discovered near by, dedicated by an association known as "*the Worshipers of Zeus*", and mentioning his sanctuary<sup>1</sup>.

The plan for extending the area about the temple involved the cutting back of the east face of the excavation, which was already approaching a height of twenty metres and constantly growing higher, and an almost equally difficult task on the north, where the bank of earth, comparatively low at its west end, rose at its east end to the same height as the east face. The widening of the area to the south was



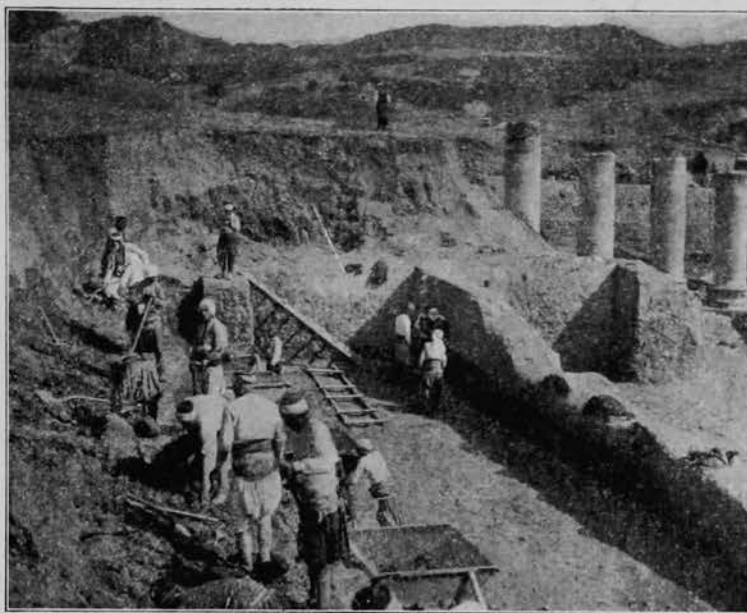
Ill. 133. Northern Half of the East Porch. View from Southeast.

limited only by the necessity of leaving solid ground for the upper lines of railway which must carry off the excavated earth from the higher terraces at the east end. It was also planned to deepen the excavations in every possible quarter, in the hope of finding more Lydian remains. Toward the close of the preceding season progress on the north side, near the eastern end, had been held up by a rough concrete barrier found at least three metres above the level of the temple platform (Ill. 132). This mass of

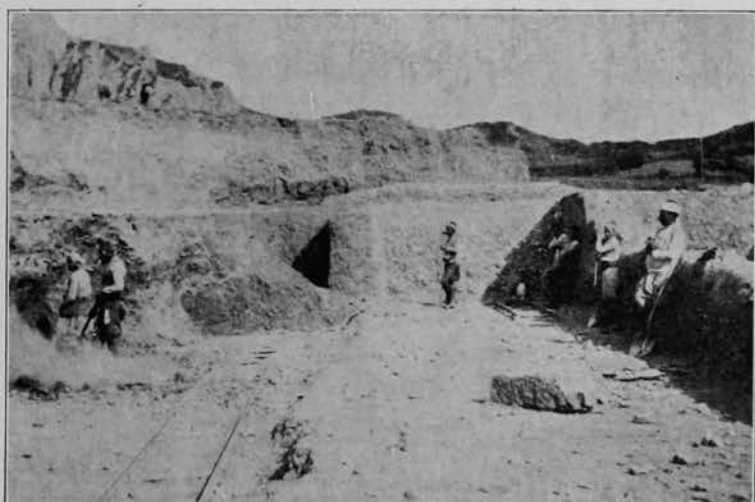
concrete was not in its original vertical position, but appeared to have fallen from the upper part of a wall. Examination of the earth beneath it showed that it lay upon a level later than the accumulations of earth and débris which had buried the temple. This unwieldy mass may be seen between the columns, high up at the extreme right in Ill. 133. As soon as work in this quarter was resumed, it was found necessary to break up this barrier in order to prevent its falling forward and crushing the labourers. Scarcely had it been removed when a long section of concrete wall about three metres high, and still in situ, was disclosed. This wall continued westward at an angle with the temple, to a point about opposite to the seventh column of the temple (see Map III), where it ended in a stout projecting buttress and turned toward the north. About

<sup>1</sup> The inscription was set up by οἱ τοῦ Διὸς θεραπευταὶ τῶν εἰς τὸ ἅδυστον εἰσπορευομένων. It will be published in Vol. VII of this series.

five metres to the north was encountered another wall running east and west, less well preserved toward its western end. But the north-and-south wall still continued its course, with occasional projecting buttresses, completely holding up all progress eastward at this point (Ills. 134 and 135). An upper line of railway was put in operation for the removal of earth above the level of the tops of these walls, and the uppermost five to seven metres of earth were cut away to the extreme end of the excavations in the northeast angle. While these heavy walls of concrete were being laid bare it was difficult at first to determine how much of their height should be counted as foundations, and how much as wall originally above ground; for there was nothing in the earth removed to indicate a stratum which had been lived upon; but, as the work advanced, it was found that about a metre and a quarter had been below the surface and was quite rough (Ill. 134), while the wall above that height had been plastered.



Ill. 134. Concrete Structure North of Temple, from the West.



Ill. 135. Concrete Structure North of Temple. View from West.

On the terrace-level corresponding to the bottom of the foundations of these great walls, about opposite to the middle of the temple cella, there presently appeared in the perpendicular face of the upper terrace a roughly squared block of stone, behind which could be seen one side of a moulded pedestal upon a large square marble foundation. Work was concentrated at this point, and the pedestal promptly excavated. As soon as this was done, the complete marble figure of a recumbent lion of archaic type began to emerge (Ill. 136). In time there gradually came into view a second lion in a sitting posture with head and front legs broken, and a headless eagle with folded wings, all three set without order upon a broad square pedestal of two

Work was concentrated at this point, and the pedestal promptly excavated. As soon as this was done, the complete marble figure of a recumbent lion of

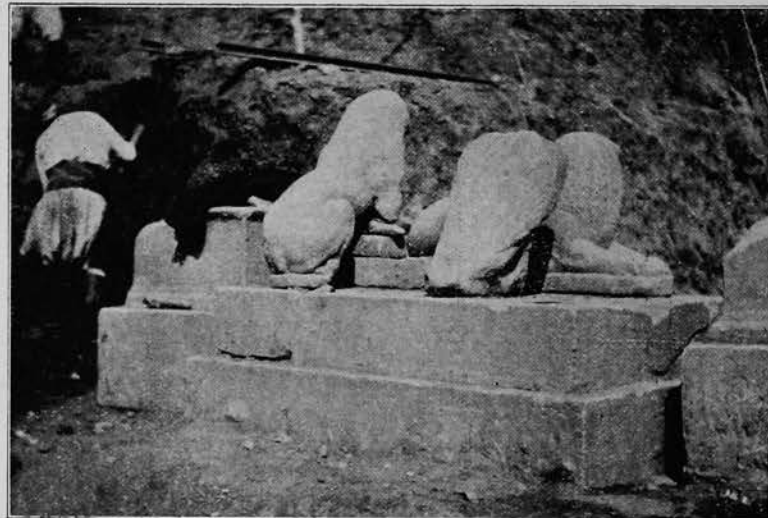
steps (Ill. 137). Beyond this was another moulded pedestal exactly like the first. The two pedestals had supported bronze statues, as the incisions in their upper surfaces indicated. The first lion was found, as is shown in Ill. 136, at the end of the large base, with his feet projecting over the edge, the other lion lay at the opposite end,



Ill. 136. Marble Bases and Sculptures appearing on the North Side.

the eagle had fallen on one side. No other remains, and no fragments of the missing parts of these sculptures, were found with them. It appeared not impossible that all three had once been arranged upon the large base, but no satisfactory scheme for replacing them could be suggested. Moreover the recumbent lion seems to represent a period older than that of his companion; for the surface of the one is smooth and shows little modelling, whereas in the other the muscles are boldly indicated

and the mane is quite differently treated. The eagle bears some resemblance to eagles believed to be of Hittite origin, and appears to be holding a hooded snake between his legs. The whole group was very puzzling. After a thorough cleaning it was found that both the pedestals had borne inscriptions, one of which had been erased intentionally, while the other was complete in two short bilingual lines, one Lydian, the other Greek, reading: "*Nannas, son of Dionysikles, to Artemis*". This same man's name may have been engraved on the foot of one of the two elevated columns in the porch of the temple. Ill. 138 shows the two pedestals for statues and the two-stepped base between them exactly as we found them, the lions and the eagle as we placed them, and the labourers who excavated them. When these three bases were found in a row extending to the north, it seemed possible that we had come upon the end of an avenue lined with statues,

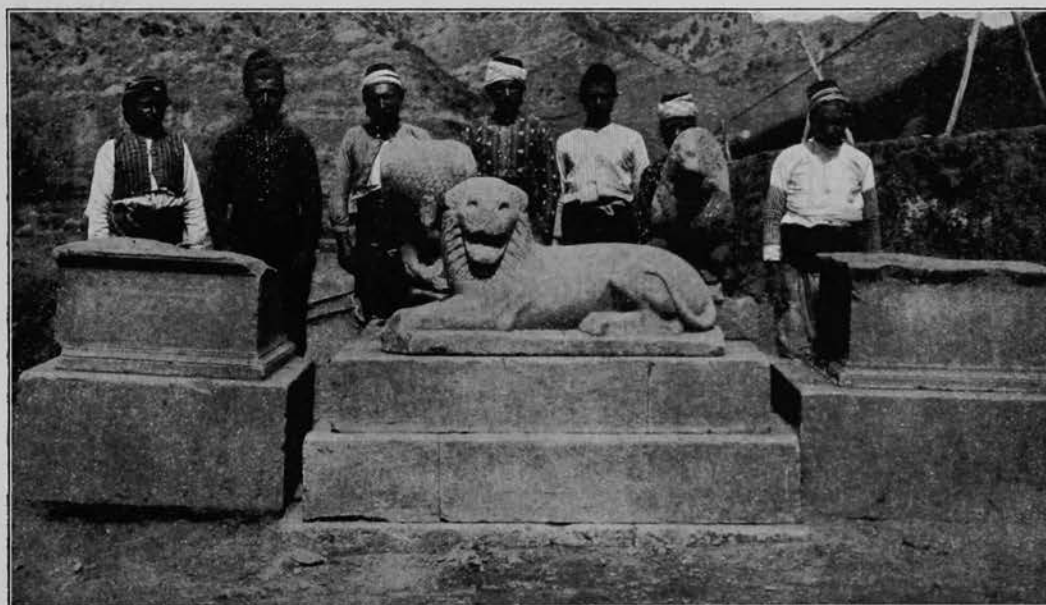


Ill. 137. Lions and Eagle set up on Pedestal.



leading up to the temple of Artemis from the main part of the city. Such a theory was however soon shown to be untenable.

The long wall running toward the west (Ill. 134) presently became only a retaining wall, extended to a point about opposite the west end of the temple, and then turned at an obtuse angle toward the north. The excavations at the west end, on this north side, were carried on in earth of less depth, and consequently on lower levels. But work here was both tedious and difficult; for there had been at this point groups of poorly constructed buildings, houses presumably, erected on two different levels and, of course, independently of each other. The upper stratum of these buildings was just below the surface, and appears to have belonged to the Byzantine period. The walls were of loose stones set in clay, and disintegrated rapidly as they were exhumed. The only objects of interest yielded by this level were specimens of crudely glazed Byzantine pottery, some nearly complete and some in fragments, found



Ill. 138. Bases and Sculptures, and the Men who excavated them.

just below the surface. Below this was a maze of walls on two slightly different levels, the upper one judged from coins and fragments of pottery to be Hellenistic in date, the lower one probably Lydian, being exactly the same as that of the Lydian Building, and immediately north of the row of stele-bases. All the walls were very poorly constructed except in a large rectangular building at the extreme west, which preserves two courses of excellent stonework the blocks of which were fitted together in a remarkable manner almost polygonal in appearance. A curious series of small finds was made on the Hellenistic level in this quarter of the excavations — more than a dozen ovoid cups with rims slightly drawn in, having each a small moulded handle. These were found at the base of walls, and usually outside of buildings; several of them behind the row of stele-bases on the north side of the Lydian Building. Each cup contained a coin, the shell of an egg, and a small bronze instrument the nature of which could not be determined because all had corroded badly, apparently consisting of twisted

wire. Several of these cups were broken accidentally by the pick, but seven are still perfectly preserved, and in one the egg-shell is whole but for a small hole in one end.

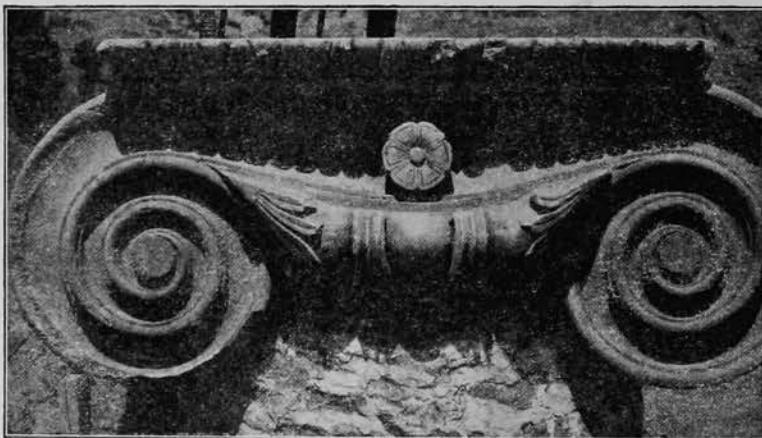
A capital (Ill. 139) from the temple was found near the end of the row of stele-bases. This was lying on one face, while the other had been broken beyond recognition



Ill. 139. Capital found at Northwest Angle of Excavations

although the sides were fairly well preserved. When the capital was turned over, the hidden face, undoubtedly the back and not the front, was found to be almost intact (Ill. 139 A). As these excavations at the northwestern angle were being pushed back toward the north, we came upon a fine stele inscribed in Greek of the Hellenistic period, on a level a little above that of the Lydian stele-bases. It was broken into two pieces, but was lying near its moulded

base (Ill. 140). The upper part of the face of the stele bears a laurel wreath finely executed in low relief within a sunken panel, below which is the inscription<sup>1</sup>; above it a cap consisting of a delicate dentil course, a little corona, and a cymatium; an akroterion of some sort having formerly been fitted upon a projecting tongue at the top. Immediately to the east of this and a little farther north, was a flight of six steps constructed in part of second-hand material (Ill. 141). There was to the north of these steps no building to which they might have led, and I am inclined to think that they were constructed at a late period as a means of descending from the level created by the late retaining wall described on page 125 to the lower level at the west end of the temple. The steps look as if they might originally have been stelae; but careful examination of them revealed no inscriptions. Near the top of the steps, a little to the west, was a trap-door of stone opening into a small tunnel-vaulted tomb of the Byzantine period. It was partly filled with fine

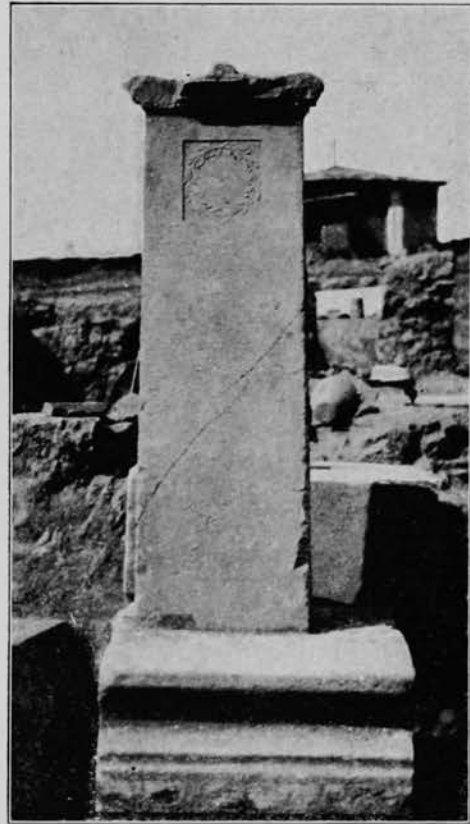


Ill. 139 A. Face of Capital shown in Ill. 139.

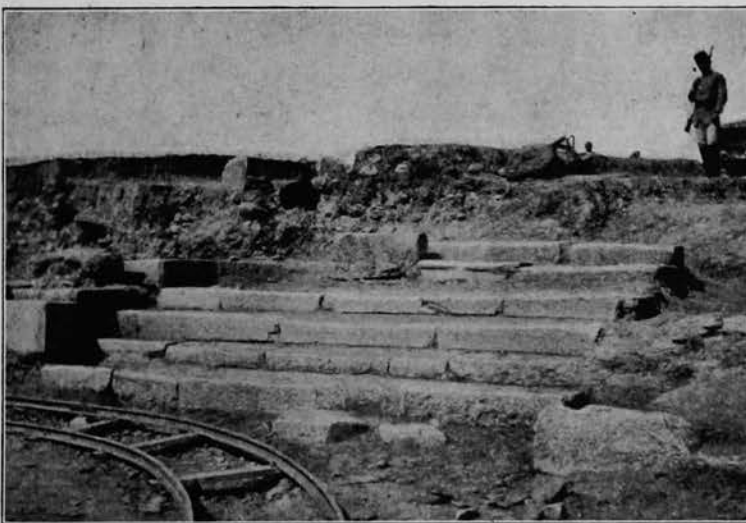
<sup>1</sup> to be published in Vol. VII.

earth which had washed in around the cover of the opening. The chamber is about three metres long by two metres wide, and was built of brick. The entrance was by a small square opening in the crown of the vault at one end. Two brackets in the end wall provided steps to the floor of the chamber which was less than two metres high at the crown of the vault. The walls and ceiling were plastered, but there were no remains of painting nor any contents of importance. In this tomb we have a perfectly preserved example of a type represented by several completely ruined tombs on the south side of the temple area.

The deepening of the excavation on this north side brought forth very few objects of archaeological interest, but furnished much important information about the site. A wide space along the concrete casing of the column foundations was dug down to the level of the Lydian Building, and narrow trenches were dug in this new level; but no evidence of stratification was discovered. All the excavated earth was a conglomeration of sand and pottery fragments of different ages, amid which some very interesting and important bits of ancient Lydian and other wares came to light. The entire deposit, even on the lowest levels, appeared to have been made by water. Here two wells were found, both of



Ill. 140. Stele with Greek Inscription.



Ill. 141. Steps North of the Lydian Building.

part beneath the concrete casing of one of the column foundations, it would appear



to be older than the concrete casing, which is almost certainly not later than the first century of our era. The process of deepening the excavated area to the north of the temple wherever possible was carried on also in the wide expanse west of the great concrete structure, that is, on the



Ill. 142. Deepening the Excavations North of the Temple.

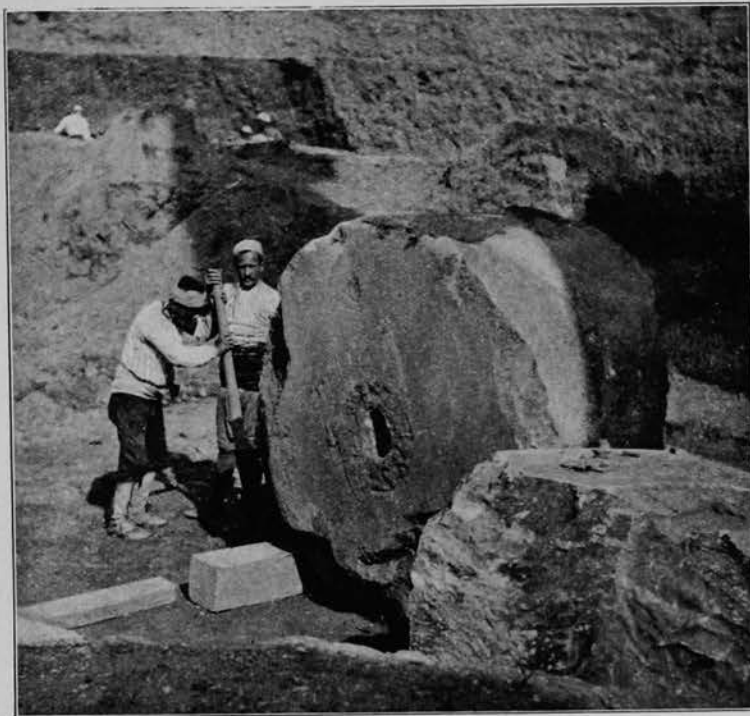
terrace where the lion group was found. We made all through this section broad deep cuttings down to the level of the Lydian Building, (Ill. 142) taking care to spare only the concrete walls. All this earth, as in the case of that nearer the temple, was found to be sand mixed with pottery fragments deposited by the action of water. Thus it became certain that the Lydian lions were not in situ, for the earth underneath them, to a depth of three or four metres,

is mixed with pottery of the same and of later periods; whence one must infer that the sculptures were assembled and set up with the pedestals at a date very much later than that of their execution.

The cutting back of the high terraces of the east face of the excavations was an engineering task of no little difficulty and had to wait while the column-drums which had caused so much earlier delay were being lowered to their final resting place (Ill. 143). Each drum was carefully moved with the aid of lever jacks (Ill. 144), until the entire number lay in a row directly in front of the concrete casing of the front line of columns at the east end of the temple (Ill. 145). This cutting back of the terraces was a slow operation, first because they were very high, and secondly because some of the earth on the lower levels was packed very hard; so that weeks would pass before the railways on all the levels could be moved into new positions.



Ill. 143. East End of the Excavations from the North.

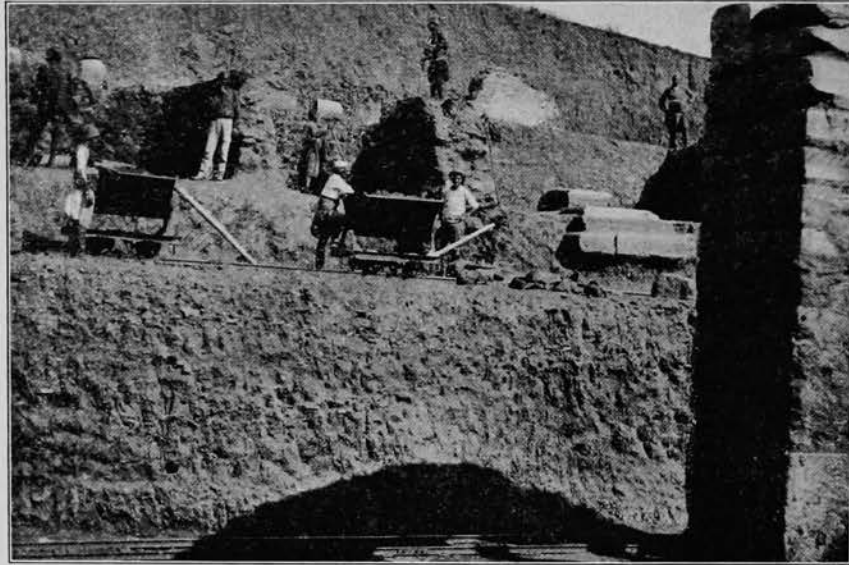


Ill. 144. Moving Column-drums.



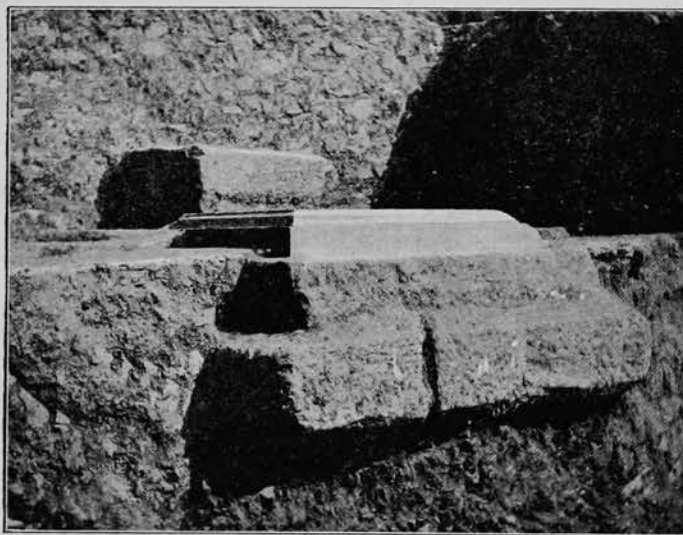
Ill. 145. The East Portico of the Temple of Artemis.

In the great mass of earth nothing of interest was discovered. But directly eastward from the little church a surprise was awaiting us. Here, on a level almost five metres above that of the church, and only twelve metres to the eastward of it, we came upon a series of small constructions mostly of concrete, and all belonging to the early Roman period. On the second terrace (Ill. 146) there appeared a row of small chambers



Ill. 146. Roman Constructions to the Southeast of the Temple.

with walls at the rear and sides, but which had apparently been open toward the temple. One of these exedras has a smooth cement floor and in the middle a large moulded marble base for a pedestal, with two courses of foundations below it (Ill. 147).



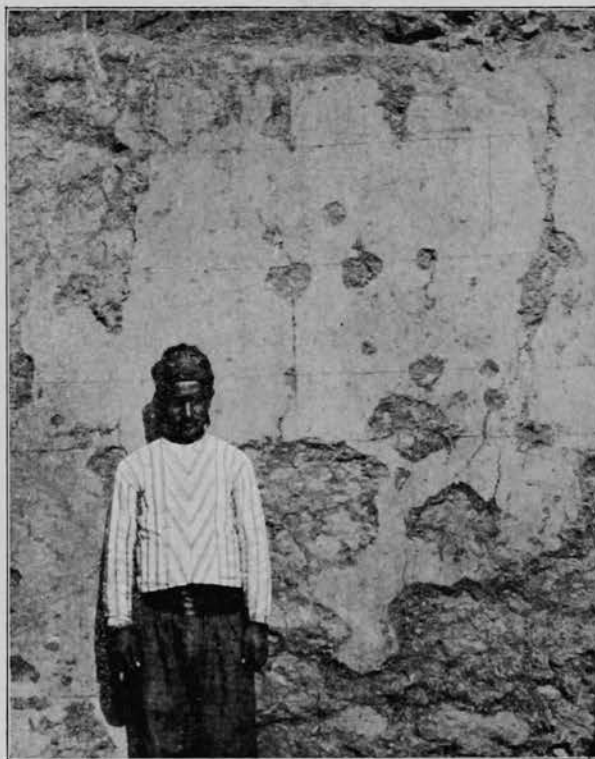
Ill. 147. Base in Rectangular Exedra.

Other moulded marble fragments, and unfluted marble drums of small diameter, were found near by. On the terrace above were walls of larger buildings, lying north and south, one of them covered with stucco the surface of which had been marked off to represent blocks of ashlar (Ill. 148). On both terraces the only fragments of pottery and other dateable objects were of the first century or later. The ground upon which they stood was not an original natural deposit, but one of comparatively recent date.

All this work at the east end of the temple area was raising a number of questions difficult to answer. Not thirty metres from the façade of the temple rose a precipitous mass of hard-packed earth about twelve metres high covered with a



lighter deposit five metres deep. The lowest levels were very tough and difficult to excavate (Ill. 149). At the north end, a little to the side, was the huge construction of concrete walls and buttresses, with their foundations high above the temple level. At the south end were the smaller buildings described above, also higher than that level (Ill. 142). Did the temple originally face a precipice, or even a hill? Might this hill have been a recent deposit? And, if so, how recent? As stated above, some of the earth, even on the deeper levels, contains fragments of pottery in very small bits, while some of it is without pottery. Mr. WILLIAM WARFIELD, our geologist, found that the hard mass at the east end of the excavations was not an original formation, but a great fragment of the Akropolis, which at some time during the historical period had fallen, had been shaped into the steep slope directly in front of the temple, and at certain points, according to the preponderance of one material or another and to the condi-



Ill. 148. Plastered Wall on Upper Terrace.



Ill. 149. Working on Terraces at the Northeast Angle of the Excavations.

tions of water, had become quite as hard as the original substance of the Akropolis, especially in the lower levels where pressure was greater<sup>1</sup>. Trenches were dug in the space in front of the temple, deep down into the lowest levels, without finding anything like hard-pan (Ill. 150). The archaeological evidence bears out this theory of the geologist. It is plain that the steep slope at the southeast of the temple was terraced, and masked by small buildings, (Ills. 143 and 146), exedras and the like, not earlier than the first century of our era. The pottery found on the terraces contains thousands of fragments

<sup>1</sup> See Appendix I.

of this and later periods, but not one that can be proved to be earlier, while excavations under the foot of the slope brought forth many fragments of Lydian pottery of early date, and one complete jug of the sixth century B. C. or earlier, which was found directly in front of the temple. All this may point to the earthquake of 17 A. D., or to a similar catastrophe within a century earlier. But it would seem either that the great mass, as it descended, stopped directly in front of the temple, or that it was arrested by the solid bulk of this structure, in which case a part of the deposit was cut back leaving a space in front of the temple. Water too played its part in the redistribution of the fallen masses, for the space on the north side of the temple seems to have been washed out like a ravine and then filled up again with earth which is full of early remains of human handiwork.

The digging on the south side revealed only fragments of more walls built of



Ill. 150. Digging a Trench in front of East Porch.

boulders, foundations of poor constructions of late date, and a Mediaeval Byzantine cemetery. On this last and highest level a hoard of sixty tetradrachms of the Hellenistic period, in a beautiful state of preservation, and a single late bronze coin were found in a pot buried beside a grave only a few inches below the surface. Of this hoard Mr. BELL says "The presence of a bronze coin of a late date, and the fact that the hoard itself was found in connexion with a graveyard of the Byzantine period (though not in a grave), make it highly probable that the collection was formed during the early Middle Ages by a person of antiquarian tastes"<sup>1</sup>. The levels on this side were pretty well marked, by Lydian pottery just above the lowest, by Greek coins on the intermediate, and by Roman and Byzantine pottery and coins on the upper levels.

A deep trench, over ten metres wide, was excavated along the south side of the concrete casings of the columns. Very few objects of archaeological interest emerged, except near the eastern end of the trench where a huge settling pot over a metre in diameter was found with another pot inside it. The supply pipe, a comparatively small tile, passed through the outer jar and into the inner one, the water then percolated through the smaller into the larger jar, and the outlet opened only from the outer one. A little further to the east a well-head appeared, below the platform level, old and worn with the marks of many bucket-ropes. The well, when cleared out, yielded water and broken water-jars of early make.

The one disappointment of the year was the failure to find traces of the Temple

<sup>1</sup> Cf. Vol. XI, Part I, p. V.

of Zeus. The steep mass of earth to the east and southeast of the Temple of Artemis seemed to preclude all further search in these directions, the digging in shallow soil on the south had given us no encouragement, and the great building of Roman concrete delayed progress to the north and northeast. It is not impossible, however, that this building with its thick outer walls and intricate system of interior cross walls, covers the temple for which we were looking.

## 2. EXCAVATIONS IN THE PLAIN.

Upon our arrival at Sardis in the early spring of 1913, the natives had a surprise waiting for us. Just outside the village nearest to the excavations, and not far from our works, they had assembled a number of large fragments of sculpture evidently of the Roman period. Two large pieces could be fitted together, and unmistakably formed the cover of a sarcophagus of the Sidamara type, about 2.20 m. long and 1.15 m. wide, while other fragments composed parts of the sides which were divided by colonnettes with sculptured figures between them. The two main pieces of the cover, making up the entire length of the sarcophagus on the front, represented a low couch upon which two female figures, both headless, reclined in the position usually held by those of a man and a woman. The couch had a head-board and a foot-board, turned up at the ends, each ornamented with a horse's head. Two little genii, also headless, one at the head and one at the foot of the couch, sat just above the horses' heads, holding baskets of fruit. At the foot of the smaller female figure lay a little dog. We were informed that these interesting pieces of sculpture had been discovered in the plain, not far from the Paktolos, by a peasant while ploughing his field. This place was far outside the limits of our permission to excavate, but we determined to make a thorough examination there in hopes of finding more fragments. As soon as permission to extend the provisions of our firman was granted, we began a systematic search in the region of the original finds. The place of discovery was well out in the level country northwest of the Akropolis beyond the west bank of the Paktolos, directly beside the main highway, which presumably follows the line of the ancient Royal Road and passed through the northern end of the city. Thus the sarcophagus had stood outside the walls of the city beside an important road, in just the position where we should expect a monumental tomb of the Roman period to stand (G in Ill. 18).

The careful removal of the earth near the original place of discovery at once began to bring forth fragments big and little in large numbers; it was evident that the monument had been thoroughly broken up and that its remains were much scattered. The area in which pieces were found grew wider and wider, and presently it was found necessary to dig considerably deeper than the peasants had dug in their search for the pieces brought to us. It was plain that the cover had been broken up at a short distance from the place where most of the fragments of the main sarcophagus were found. One day, after nearly a week of digging, the head of the larger figure came to light, and was brought with great rejoicing to the excavation house, in the court of which the cover had already been set up (Plate III). The head was



quite complete but for the lower part of the nose which was never found. Then came out a piece of the front of the cover bearing in Greek letters the following inscription: *The tomb of Claudia Antonia Sabina, a lady of consular rank.* CLAUDIA was a beautiful woman, if this sculptured head be taken as a portrait. The face is both youthful and matronly, the brow broad and sufficiently high, the eyes deep set and wide apart, the mouth large but expressive, and the cheeks and chin softly modelled. The hair, arranged in puff-like waves parallel to the parting, is brought down to the lower part of the ears, and is done up in a large "bun" behind; all in the manner of the imperial ladies of the later ANTONINES, as shown on the coins. A day or two later another head was discovered, much broken but certainly belonging to the smaller lady who was perhaps the daughter of CLAUDIA. The entire face, from the brow downward, is broken away, only one half of each eye being preserved. The hair is

arranged like that of the other, but a veil is draped from the back part of the crown of the head. Fragments were found later which show that the veil was brought around on one side and held by the left hand against the lower part of the face. When the monument was finally wrecked, the hand and veil were broken away and the face destroyed.



Ill. 151. Right End of the Sarcophagus.

One large piece of the sarcophagus (Ill. 151) had already been recovered, intact from bottom to top, 1.15 m. high, consisting of colonnettes with four figures, two male and two female, arranged in the spaces between. The colonnettes had twisted flutings and delicate foliate capitals; each carried a

section of highly ornate entablature, and there were pediments, curved and triangular, above alternate intercolumniations. It seemed probable from the first that this piece represented two figures from the front and two on the right end. The figures at the end are smaller than the others and stand on pedestals. At the left, next to the angle column, is an old man whose head is on the level of the straight entablature and partly hides it. The adjoining figure, that of a woman, is taller than the other, and her head extends up into the pointed pediment (Ill. 151). Both figures are badly fitted to their architectural setting. On the other face the colonnettes stand on low pedestals. At the corner is an aged male figure of the SOPHOKLES type, facing to the left, with head extending up into a curved pediment. This is about a quarter larger in scale than the other male figure, and of far better proportions and workmanship. Next to the left is a young heavily draped matron facing to the right (Ill. 152). A trifle taller than the man just described and taller than the entire order of the colonnettes, this woman is a really beautiful piece of work.



Sarcophagus of Claudia Antonia Sabina





All the other fragments of the sarcophagus were so badly broken that it was necessary to lay them out on the pavement of the court yard, and piece them together. First we found the two columns and the figure between them composing the panel which fitted on to the female figure in Ill. 152. This panel carried a pointed pediment above a fluted concha and the figure of a nude youth with scant drapery falling over the left shoulder and arm (Plate III Right). The face had been broken away, and both arms below the elbow and the left leg were missing, but the torso presents an interesting survival of Praxitelean tradition. This figure seemed to have occupied the middle of the sarcophagus front. A few architectural fragments joined up this figure with the one on the left end, but no parts of the intermediate figure could be identified among the quantities of broken remains. The end figure, under a curved pediment like that which covers the Sophoklean figure at the opposite end, is a heavily draped seated female raised upon a high sort of pedestal (Plate III Left). Though sadly mutilated this shows a stately pose and beautiful drapery. The left hand was raised to hold a veil before the face; fragments of the arm and veil were found, but, as in the case of the lady reclining on the cover, the breaking away of the hand and veil had destroyed the entire face. The right hand, lightly resting on the cushion of the chair, is admirably executed.

Fitting into these fragments was found the angle colonnette, the figure adjoining it, and the second column from the end, representing the right panel of the left end of the sarcophagus (Ill. 153) — the only part of this end that could be identified. The figure here corresponds in scale and in workmanship with the male figure at the other end (Ill. 151).

We now had the cover quite complete, but for the heads of the two genii and a part of the back of the couch; we had four figures out of the five which composed the front panels, as well as two figures out of three from the right end and one out of three from the left end. The fragments indicate that the back of the sarcophagus was plain, and as will be shown below this was necessitated by its position. There are missing therefore only four out of eleven possible figures excluding those on the cover. It is extremely interesting to compare the architectural and the sculptured decoration of this new example of the Sidamara type, and to observe the varying qualities of the art displayed in the composition and execution of the sculptured figures. The architectural ornament throughout, in its flat technique and in its conspicuous use



Ill. 152. Figures at Right End of Front.

of the borer, is of a colouristic quality almost Byzantine. Yet the carving of the figures upon the cover and of the better group of panel figures, indicates a date comparatively early, and these bits of evidence, taken together with the inscription and with the women's coiffure, point to a period not later than the end of the second century after CHRIST<sup>1</sup>. It would seem then that at least here in Asia Minor, the colouristic technique in architectural ornament was beginning to appear, in smaller objects having decorative architectural features, about two hundred years earlier than is generally believed to have been the case. It is quite plain, even from observation of the few photographs presented herewith, that two or more sculptors worked upon



Ill. 153. Figure on Right Side of Left End.

this sarcophagus. Certainly the hand which carved the figures of the front panels, with their strong Greek tradition, was not responsible for the figures on the ends which, in their lack of anatomical study and their awkward proportions, resemble early Mediaeval work. The central figure, so reminiscent of the Praxitelean school, might have been copied from some Greek statue still to be seen in Sardis, or wherever the monument was made; but the seated woman on the left end of the front bears every sign of having been composed for the occasion and the place. This monument is to be discussed by Professor CHARLES R. MOREY and fully illustrated in Volume V of these Publications.

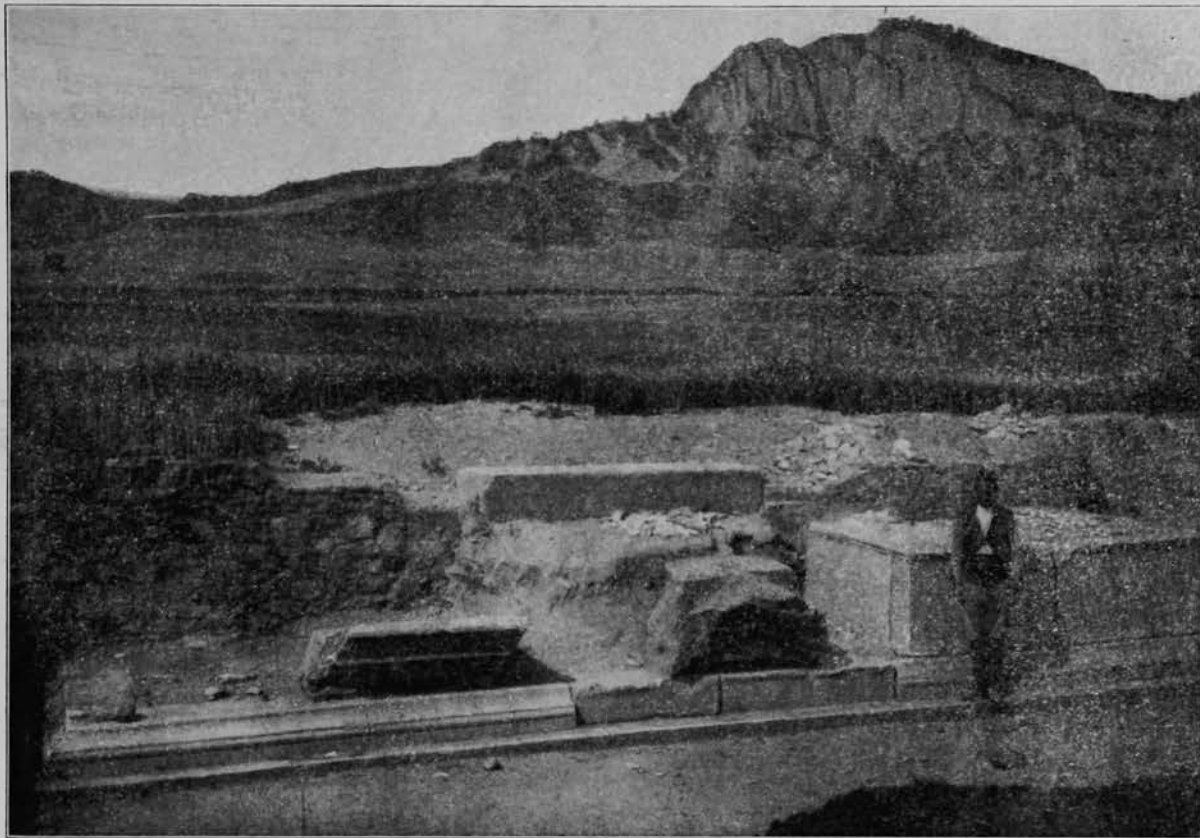
The digging connected with the excavation of the scattered fragments of the sarcophagus brought to light important information with regard to the setting of the monument and its employment in a larger decorative scheme. Very little is known about the original surroundings, or setting, of any of the sarcophagi of the Sidamara type which exist in European museums; but as to the site of this one we have perfectly clear evidence. The excavations disclosed first, the foundations of a tomb-chamber in the form of a triconchos, that is three semicircular apses opening out from a square.

The fourth side of the square was occupied by the entrance, and on the exterior, by the monumental façade of the mausoleum. This façade had a flight of marble steps set between marble parotids (Ill. 154) treated like podia, with base moulding, die and moulded cap, and these were planned on such a scale that a column could be placed at the angle of each parotid to carry an entablature across the façade. This entablature was arched in the middle, above the steps of the entrance, and the whole façade finished above in one great pediment, broken by that arch. On the parotid

<sup>1</sup> Cf. Vol. V, by Professor CHARLES R. MOREY.

to the right rested the sarcophagus of CLAUDIA as upon a pedestal, and the columns at the angles with the entablature above them composed a sort of canopy over it. Most probably the opposite parotid supported a second sarcophagus, perhaps that of CLAUDIA's husband; but this side of the building was less deeply buried, and all its marble fabric has been removed down to the base moulding. A restoration of this structure is given in Chapter VIII, which is devoted to Tombs.

Almost directly across the high road, but a little to the east, the natives, some time before, had discovered a Christian tomb of the tunnel-vaulted type already seen in the main excavations. This we cleared out, and exposed to view an interesting



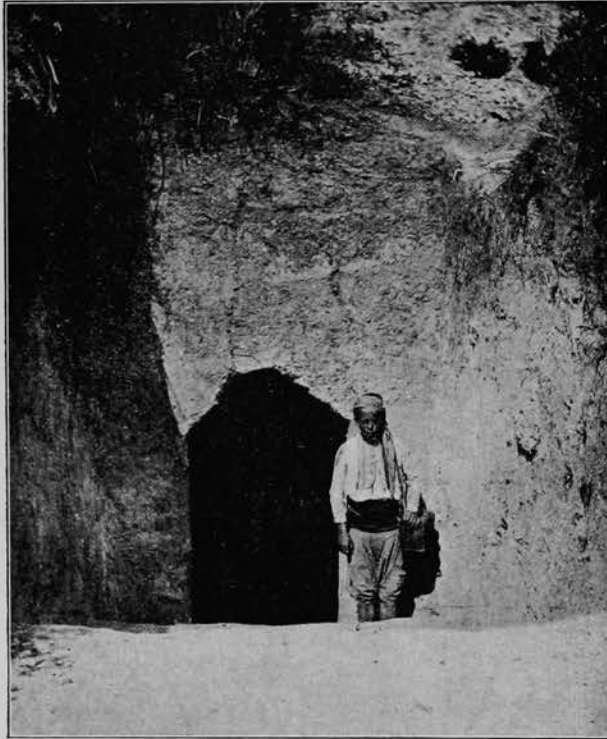
Ill. 154. Tomb Structure near which the Sarcophagus was found.

series of wall paintings of peacocks in fields of poppies, baskets of fruit and Christian symbols. Nothing else, excepting a few poor lamps, was found in the tomb, which had probably been rifled generations ago. Immediately after being cleared out, it was attacked one night, for no reason that could be discovered, by natives walking along the road, who with heavy stones succeeded in breaking in the vault. But fortunately the most important and best preserved of the wall paintings were upon the vertical walls of the chamber, and these were reproduced in colour by Mr. F. M. GODWIN whose drawings are published in Chapter VIII (Pl's IV and V).



## 3. EXCAVATIONS IN THE NEKROPOLIS.

While the excavation of tombs was continued by Mr. BUCKLER in the first Nekropolis, which seemed to be inexhaustible, ZEPATOS was constantly searching for tombs in other localities, and excavated a large number on the slopes of the Paktolos and in the sides of ravines opening into the valley of the river well up the stream. Most of these newly found tombs had been hewn out of a sort of sandstone, a more solid material than that of the first Nekropolis hill, so that they were extremely well preserved. This very circumstance, and the fact that they were less deeply buried, because there was less earth above to be washed down upon them, had left them more exposed and more easily opened, so that the greater number of them had been rifled. Nevertheless the original forms of the tombs were more readily studied in



Ill. 155. Rock-hewn Tomb above West Bank of Paktolos.

these better preserved specimens and many new types of sepulchral chamber came to light. To the south of the first Nekropolis hill, below the long natural palisade which extends southward from the mountain, several rock-hewn tombs were found with double pitched roofs and pointed doorways, some with one or more steps descending to the level of the chamber (Ill. 155). The entrances were in several cases closed with well made doors of limestone fitted to the opening. In some chambers plaster was still upon the walls.

Directly across the river, on the eastern bank, in the face of a steep bluff, a number of beautifully finished rock-hewn tombs of the early Lydian type were opened; that group we called the South Nekropolis. These were disappointing, for the most part, in their yield, because all of them had been

rifled. Nevertheless they produced some fragments of early and interesting pottery, and in one tomb of elaborate plan with several chambers we picked up a small ivory head which is perhaps one of the most ancient objects yet found in Sardis. The head is perfectly preserved; its features and technique suggest Oriental, and extremely ancient, workmanship (Ill. 156). The eyes are long and prominent, the nose straight and with a high bridge, the mouth small and the chin pointed. Crescent-shaped incisions are cut to represent dimples in the cheeks and chin. The ears are large and carry circular ear-rings, carved in the ivory. There is no doubt that the head-dress was of metal, and that the neck fitted into a body of metal, almost certainly gold, so that

this would seem to be a fragment of a very early chryselephantine statuette. The tomb had been completely rifled; the robbers had taken everything else, but had torn this piece of ivory from its more precious surroundings and thrown it on the floor into a corner where we found it buried in dust.

Near the top of a high cliff on the north side of a ravine opening upon the east side of the Paktolos, a row of rock-hewn tombs was discovered without excavation; for their pointed or square openings could be seen from the opposite side of the ravine. These exposed tombs were empty of course, but a search for concealed tombs was made in the slopes above and behind them. The long iron "poker", or instrument for distinguishing soft earth from rock below the surface, revealed several narrow earth-filled passages in the slope. One of these, when excavated, showed a dromos, or approach, some twelve metres long; the doorway was reached at last



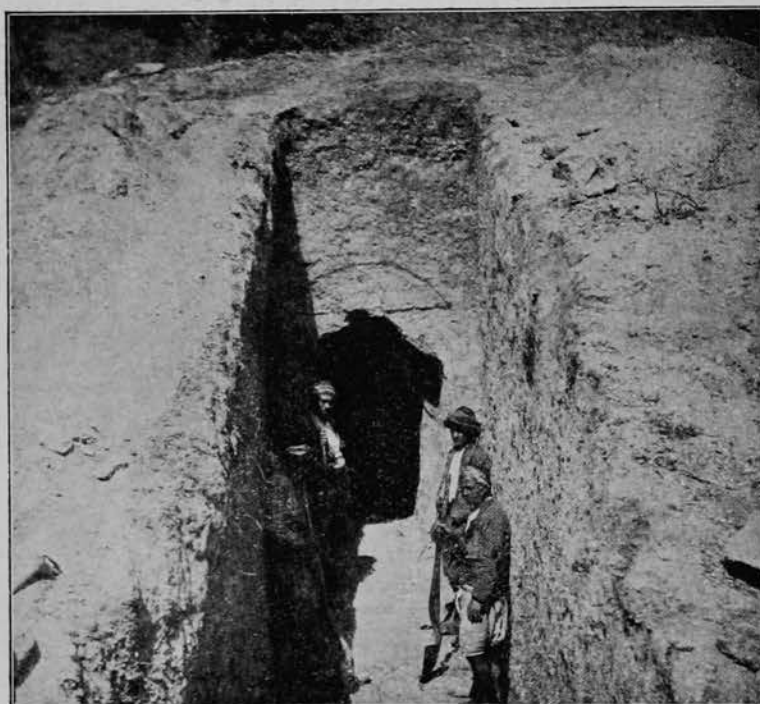
Ill. 156. Ivory Head from South Nekropolis.

with its door in place, and with a curved pediment flatly executed in relief above the entrance (Ill. 157). The door and doorway had been slightly broken at the top, but it seemed hardly possible that a human being had been able to crawl through so small an aperture. The large chamber within was almost like a chapel, with its double banks of rock-hewn sarcophagi in its walls. But every sarcophagus had been rifled, and though deeply disappointed, we proceeded to clear out the earth on the floor of the tomb in search of loose finds or pottery fragments. While this work was being done, we discovered that the floor sounded hollow in the middle. Here an untouched sarcophagus was found beneath the pavement, containing a beautiful bronze pitcher, two seal rings and other jewelry.

In the tombs of the first Nekropolis many finds were made during the season,

which marked the year 1913 as one of the most successful in this respect. Several hundred pieces of pottery, including many specimens of Lydian ware, were found in tombs that had been crushed in soon after they were made. Bronze mirrors, some with ivory handles, were numerous as usual, with other objects of the same material such as a complete yard-scale, vases, and dishes of various shapes. A number of gold necklaces of unusual delicacy were found, together with small gold ornaments, and rings, some of them with archaic seals cut in gold, others having scarabs of carnelian with intaglios in designs which we now believe to have been purely Lydian.

Individual seals of conoid shape, usually of chalcedony, and almost invariably retaining their mounting of gold or silver, were found in considerably numbers. They



Ill. 157. Dromos of a Tomb in the South Nekropolis.

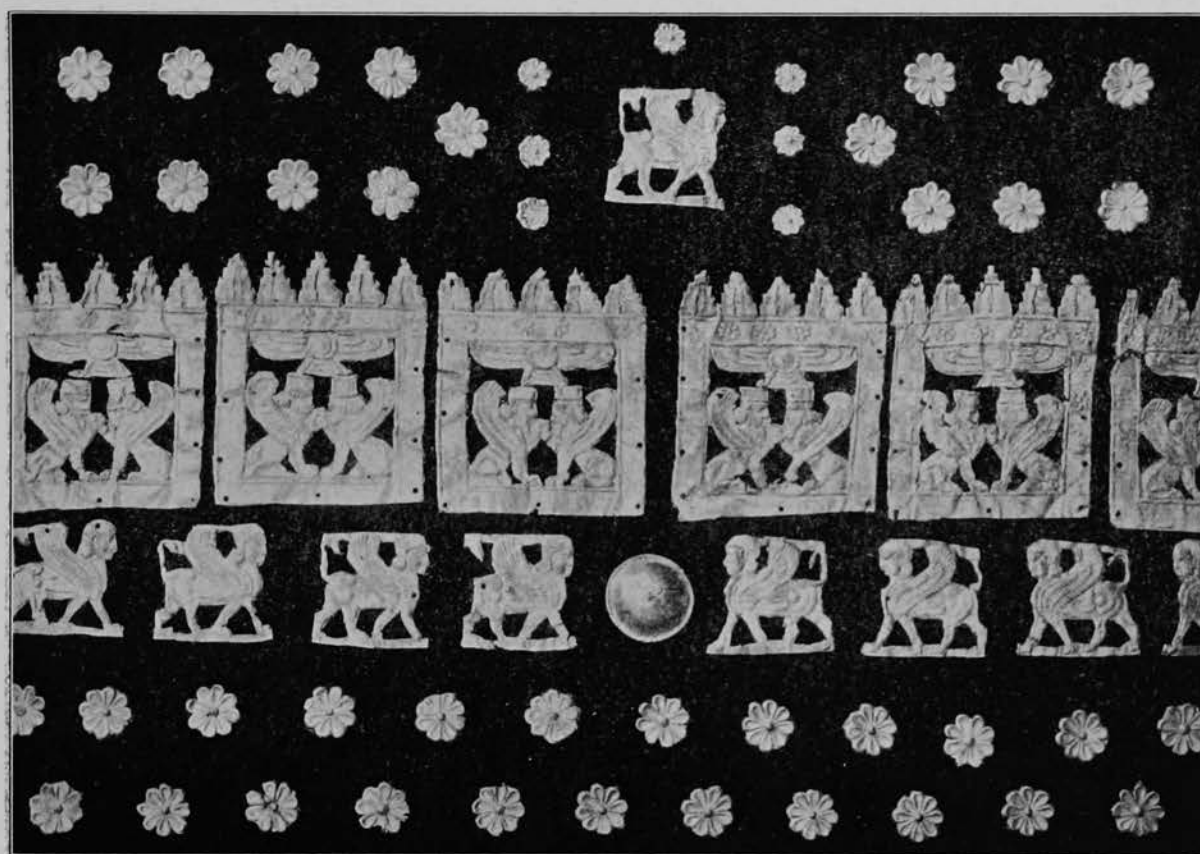
bear devices that have come to be recognized as characteristic of Sardian intaglios such as those shown in Ills. 85, 86, 130 and 131; yet no two have been found that are even approximately duplicates. Practically all of them are of excellent quality from the point of view of technique, though they differ in elaborateness of detail as in interest of subject. It is particularly interesting that so large a proportion of these seals are found with their mountings, those for seals of the scaraboid type being finger-rings in which they are set upon swivels, those for the conoid seals consisting

of bands attached to their sides holding small rings affixed to the top. Practically all of the seals to be seen in antiquity shops, and most of those in museum collections, have lost their mountings, owing probably to the fact that most of them have been found by peasants, either accidentally or in illicit diggings, and that the finder separates the engraved stone, which to him has only a precarious value, from the mounting which has intrinsic worth, and sells the two to different buyers. The gold may be melted and readily disposed of, but the "antica" is a dangerous possession, and can be sold only to a special kind of merchant; I have this on the authority of the peasants themselves. In this connection I may mention that we have kept agents in Smyrna on the lookout for engraved gems in the hands of dealers in antiques, and that thus far only one seal of the quality commonly found at Sardis has come to our notice, a circumstance indicating that very few small objects of value are carried off by our workmen. This is partly the result, I believe, of the system of rewards



instituted at our excavations, and partly due to the fact that the examination of the earth on the couches and floors of the tombs has practically always been carried on by members of the staff.

The most interesting group of gold objects found during the season, from the point of view of the history of art, came from the first Nekropolis, from a tomb near the top of a ridge extending westward from the first tomb hill, and on its north face. This group consisted of a set of plaques and rosettes of repoussé work, all found as part of one burial. There are six larger plaques (Ill. 158) each bearing two sitting human-headed lions, with beard and wings, facing each other and surmounted by a



Ill. 158. Gold ornaments from Tomb at Sardis.

winged disc, all framed in bands adorned with rosettes, and crested with battlements of Assyrian type. The nine smaller plaques have no frames, and each bears a walking sphinx. The plaques have small holes for the threads or rivets by which they were affixed to a textile fabric or to leather. The rosettes are over forty in number. The whole series shows the highest refinement of goldsmiths' work, and appears to even better advantage under a magnifying glass. These pieces will be fully described, with the other gold work, by Mr. C. DENSMORE CURTIS, in Volume XIII, which is devoted exclusively to Jewelry.

A more sensational find was made at the very top of the crest of a hill directly below the summit of the first Nekropolis hill. A partly crushed tomb was being

excavated when it was announced that two large terra-cotta sarcophagi, side by side, had been uncovered on the end couch of the chamber, both sealed and absolutely intact. We assembled to see the first one opened. It contained a small skeleton flanked on either side by rows of alabastra. Above the head were gold fillets for binding the hair. Below, where the ears had been, were two gold ear-rings like clusters of berries; upon the breast-bone a necklace composed of beads of the finest granular work with pendant golden spangles. Upon the finger bone of one hand was a fine seal ring with a lion signet cut in the gold bezel. About the feet lay gold beads and other small ornaments which had been sewn on to the dress. A doctor who was present was asked to examine the skeleton, which at once began to show signs of falling to pieces. He bent carefully over the tomb and stretched out his hand to take the skull, but it collapsed before he touched it. The top however remained intact, and after examining this and the larger vertebrae of the spine, he presently announced that the bones were those of a woman not over seventeen years old at the time of her death. Her coffin rested upon the couch of honour at the end of the tomb chamber. She must have been the wife of the owner of the tomb, she was very young, and her jewels were apparently new. Might she not have been a bride? We immediately called the place the "Tomb of the Bride"; and when we opened the coffin of her consort, we found only the bones of an old man.

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Ill. 159. The American Excavations early in the Season of 1914; View from the West.

## CHAPTER VII.

### THE SEASON OF 1914.

#### I. EXCAVATIONS IN AND NEAR THE TEMPLE.

Our fifth excavating campaign opened early in February 1914 with the regular staff unchanged and with two additions, Professor GEORGE H. CHASE of Harvard University who came out to study the pottery found during the four preceding years, and Dr. T. LESLIE SHEAR of Columbia University who was to undertake the examination of some of the Bin Tepé tumuli. Later in the season Mr. CYRUS MC CORMICK became associated with the work. AZIZ Bey was again the Imperial Commissioner.

The plan for the season was the further widening out of the excavations, and a renewal of the search for the Temple of Zeus. On the south the widening process was carried forward in a comparatively thin deposit of earth, through the late Byzantine cemetery almost as far as the ravine on that side. The upper levels, in which lay the Christian graves, yielded little besides a few late coins and some bronze utensils such as plates and bowls. Two square tombs of concrete masonry with brick or concrete vaults were uncovered, belonging to a period somewhat older than the graves; but both were in ruins and had been rifled. On the lower levels was found an early terrace wall of boulders with a stratum of early pottery, which helped to determine the original contours of the slope on this side of the temple. Several slabs with fragmentary Greek inscriptions, which had served to line or cover the Byzantine graves,



were the principal yield of the higher strata, and a long Lydian inscription was the most important find in the lower. It was thus clearly demonstrated that the temple of Zeus was not on the south side of the precinct.

At the east end of the excavations the high masses of earth that had come down from the Akropolis still retarded progress. Here the upper layers, which were about 10 m. deep and comparatively soft, were cut back eastward about 18 m. to an average depth of 6 m. This deposit was not stratified, and the earth contained nothing of interest, except near the bottom, on the level of the small Roman structures to the southeast, where were discovered a togaed male torso of the Roman period and a large amount of pressed pottery of Roman date. The lower and harder strata were excavated much more slowly. It seemed less and less probable that the temple of Zeus was to be found to the east of the temple of Artemis.

On the north side, where the deposit of earth on all levels is very soft, little more work was done at the west end; but all efforts were centred upon clearing a

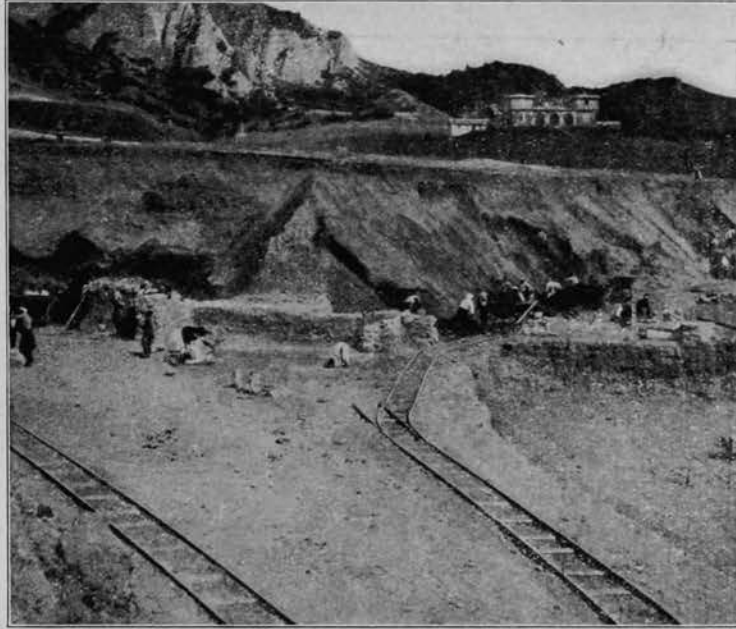


Ill. 160. Concrete Structure, View from the North.

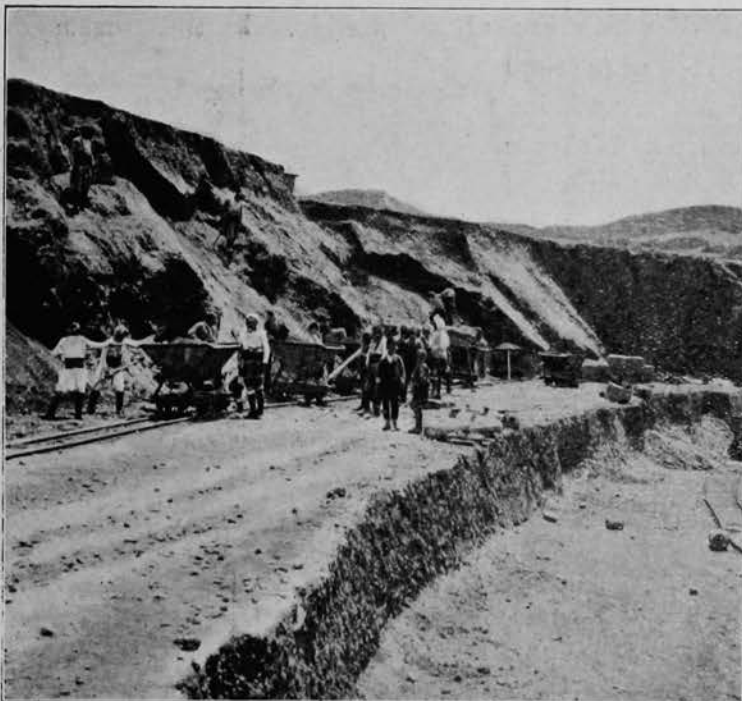
large area at the northeast angle of the excavations, where the wall of earth was very high. Here, on the intermediate level and near the middle of the north side, is situated the heavy Roman concrete building, with buttresses and cross walls, which during all the previous season had blocked progress in digging to the east of it, as is shown in the view at the head of this chapter (Ill. 159). The main west wall of this structure continued northward unbroken as the excavation advanced in that direction (Ill. 160), till at length we decided to make a breach

in the wall for the passage of one line of railway on the intermediate level (Ill. 160), and, on the terrace next above, to carry two lines over the wall (Ill. 161). As soon as these new lines were put in operation the removal of the high mass of soft earth at the northeast angle of the excavations and above the level of the concrete building progressed with great speed (Ill. 162). Here we constantly expected to reach a stratum of solid ground representing the original slope of the hill, and here there was daily anticipation that the long sought temple might be found. On two or three different occasions bits of solid masonry were disclosed, gradually emerging from the bank of earth (Ill. 163), or some large stones resembling foundations would appear, and each time it was hoped that the temple of Zeus had been discovered. But each piece of

masonry and all the large stones were soon seen to belong to small structures of late date, and all of them, although so deeply buried, rested upon recent deposits of soil. In the course of this digging several Greek inscriptions were recovered, one of which encouraged us by mentioning the shrine (*ἱερόν*) of Zeus. A colossal sculptured face, very well preserved, which also came to light on this side, differs entirely from the similar heads found here; for, though in high relief, it was almost certainly never part of an entire head, but was attached to some kind of background (Ill. 164). This raises an interesting question as to whether it may not have belonged to a gigantic frieze, like that of the Didymaion



Ill. 161. The High Bank at the Northeast Angle.

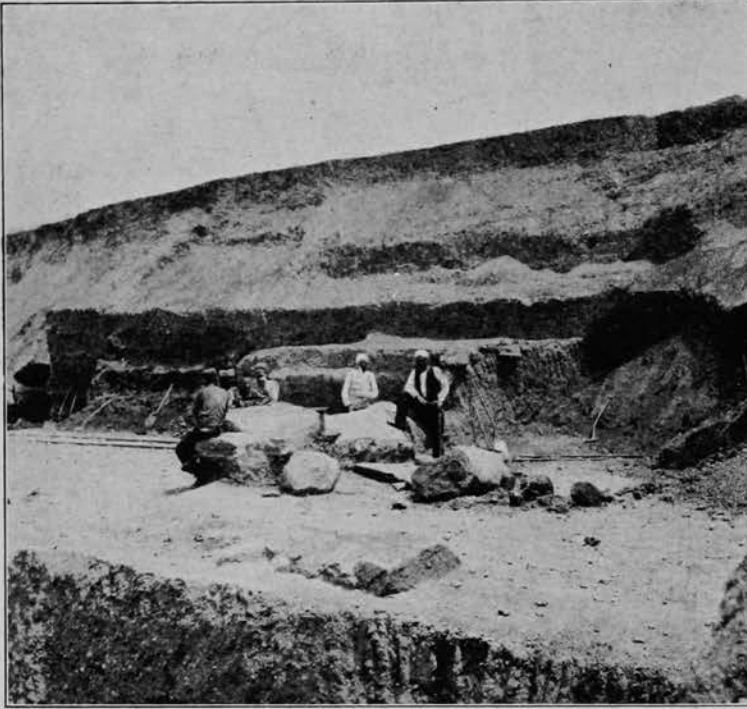


Ill. 162. Excavation East of the Concrete Structure.

near Miletos, which is ornamented at regular intervals with colossal Medusa heads. This face — not that of a Medusa, but of a youthful, rather plump woman — was executed to stand at a level much above the eye of the beholder, as the high arched eye-brows and rounded eyes plainly show. The nose is broken away, the small mouth open, the hair carved in soft waves. Not far away fragments of a third colossal head, also female, were discovered; they represent part of the nose and mouth and part of the brow with a bit of wavy hair. The deepening of the excavations on the

north side consisted in sinking, north of the Lydian lion group, a deep trench which

after a time became a wide area leaving the lions cut off, as if upon an island (Ill. 165). All of these great masses of earth were found to be comparatively late deposits, a



Ill. 163. Walls emerging from the Bank.

discovery similar to that made in 1913, when the examination of the different levels was begun.

From time to time while the main work was in progress, attempts were made within the temple to ascertain whether there existed any considerable remains of an earlier structure besides the great sandstone "basis" in the cella, among the stones of which a silver coin of CROESUS had been found<sup>1</sup>. The result, by the end of the season, was that sandstone foundations of an earlier temple were laid bare at a number of points below the platform level of our fourth-century temple, the foundations of which are all of marble. In the treasury two sandstone column foundations (Ill. 166) were found directly east of the two marble ones, and, immediately west of the northernmost of these latter, a third sandstone pier for the support of a column. These foundations show that the older columns stood less far apart than the later ones. Directly adjoining the two sandstone piers on the east was unearthed a crude foundation wall of considerable depth which being, of totally different construction from those of the fourth-century temple, must also belong to an earlier structure. Excavations in the long cultus chamber revealed other remains of such sandstone walls, but these were not completely uncovered pending the execution of our plan, which will demand much time and labour, to explore thoroughly the foundations of the cella. In the course of these soundings in the temple many pottery fragments of great age were discovered. It is not improbable that the found-



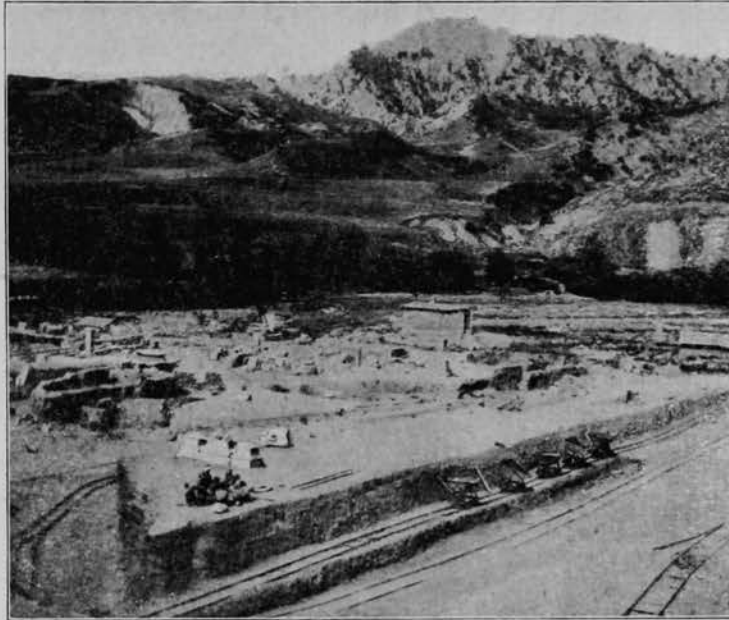
Ill. 164. Colossal Face.

<sup>1</sup> See p. 76.



ations which have begun to come to light may prove to belong to a period older than that of CROESUS, or in any case to the temple which was burnt at the time of the Ionian revolt in 499 B. C. when Sardis was destroyed.

As the season advanced the scene of the excavations began to assume a different aspect; the high walls of earth, which had enclosed the Temple of Artemis within a deep pit, had given place to a broad area, open toward the west and bounded on three sides by a series of wide receding terraces. These gave to the precinct a spacious appearance suitable to the site of so large a building. The view of the ruins from the Nekropolis Hill across the river now faintly suggests what the temple looked like

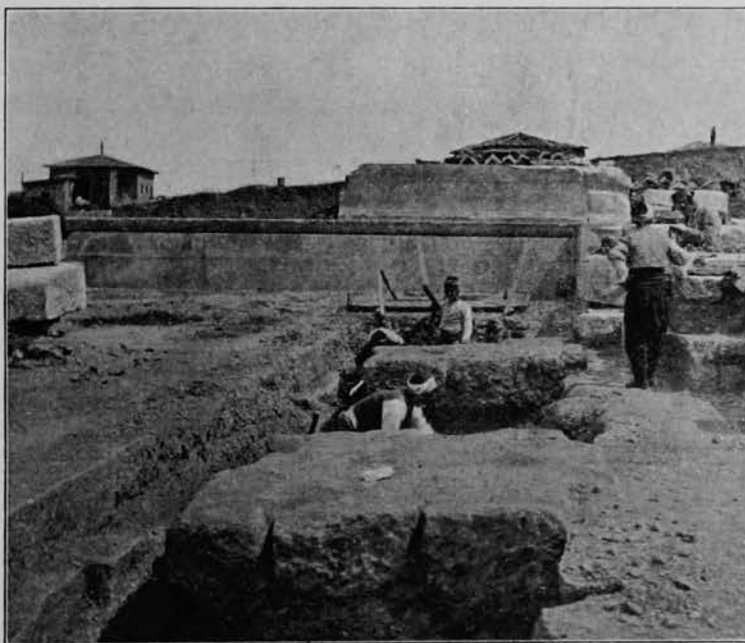


Ill. 165. Western Half of the Excavations. View looking Southwest.

in the days of its glory. Even its relation to the former Akropolis can be dimly

imagined (Ill. 159). But nowhere in all the view does there appear a suitable site for the Temple of Zeus, unless it be under the great concrete building extending eastward on the north side of the excavations, or beneath the houses of the little village. It will be found interesting to compare the view of the excavations as they were in the middle of the season of 1914 (Ill. 159) with photographs taken in earlier years (see Ills. 6, 87).

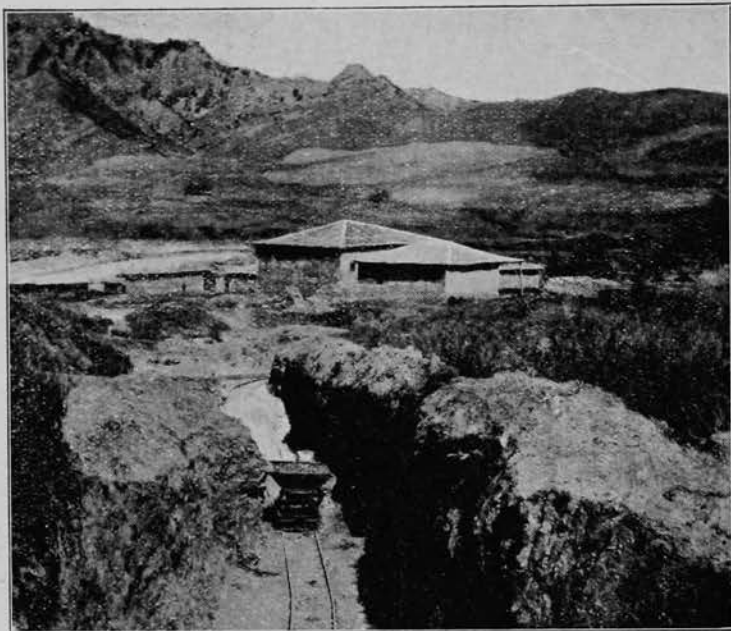
After two months of digging at the high east face of the excavations with few important or interesting results,



Ill. 166. Sandstone foundations in Treasury.

we decided temporarily to abandon this troublesome task, and to concentrate effort

upon some more rewarding area. The most promising quarter was at the northeast angle, where work had so long been held back by the concrete building on the north side. Here progress was most difficult, owing to the height of the excavated terraces; but here the Temple of Zeus must be, if, as the inscription found in 1912 plainly sug-



Ill. 167. New Trench Northeast of the Main Excavations.

gests, it is within the same sacred precinct as the Temple of Artemis. In order to advance rapidly in this quarter a new plan was devised. A trench was dug in the dry torrent-bed, or shallow ravine, on the slope above the temple, which marked the extreme northern limit of the land included in our concession. In this trench (Ill. 167) a line of railway was placed, and provided with a new outlet to the bed of the Paktolos, on the north side of the village. It was our purpose to push forward operations in this trench toward the south, in

order to connect with the work around the temple and, by so doing, to relieve the higher levels of the main excavations and to hasten the clearing of the space between these new diggings and the old. But the sinking of the new trench soon



Ill. 168. Small Objects from the New Trench.

began, not only to accomplish the object for which it was intended, but to show far more important results.

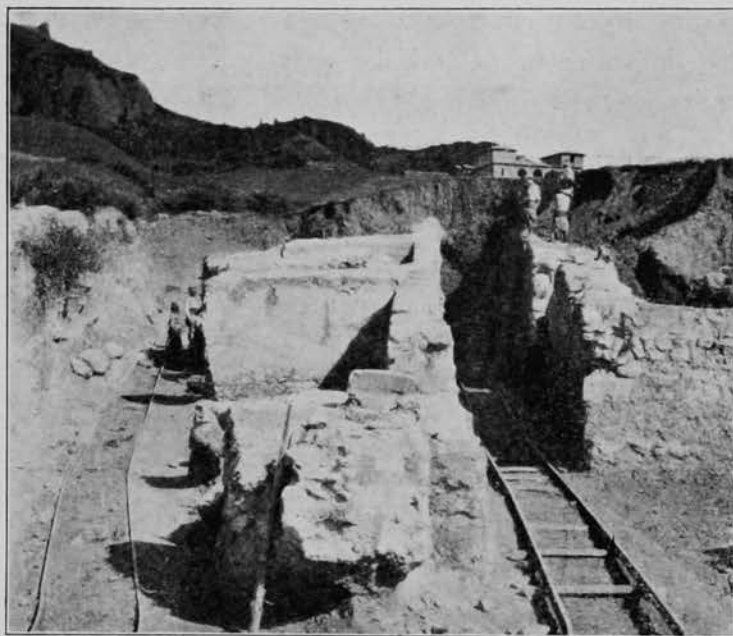
It should be borne in mind that the main excavations, being in the direct course

of the great landslide from the Akropolis, which washed out on either side of the temple deep gorges that were soon filled up again, had never revealed undisturbed stratifications of ancient remains older than the Roman period. The new trench, on the other hand, being well up on the side of a shoulder of the Akropolis, and in an area protected from the rush of the landslide, began from the first to show even and definite strata, of pottery especially, which gave us our first firm basis of chronological sequence for the objects found in the tombs and elsewhere during the previous four years. The stream-bed itself proved to be of very recent formation. Directly below its shallow deposit of sand was found a solid mass of slowly accumulated earth and, in the uppermost layers of this, the walls of small buildings and other objects of the Roman period. Some of these walls were built upon older foundations, in connexion with which appeared wares of Hellenistic date.

Not more than 6 m. below the surface we came upon clear and consistent levels abounding in sherds and complete vases of Lydian ware which, from evidence discovered

in the tombs, are known to date from the sixth and seventh centuries B. C. Many of these objects, which are of much beauty and interest (Ills. 168, 170), were found close to loose rubble foundation-walls of houses the upper parts of which, probably built of mud brick, had been entirely destroyed. In sinking a trench below this 6th—7th-century level, we came, at about 1.30 m. below it, upon another well defined stratum of pottery resembling the early, sub-Mykenian, wares of the Ionian coast. Below this again, at a depth of a metre or more, was a layer of sherds decorated in a variety of geometrical designs, and quantities of fragments in plain black and grey clays, which Professor

CHASE<sup>1</sup> is inclined to assign to the eighth and ninth centuries before CHRIST. The



Ill. 169. Long Street in the New Trench.



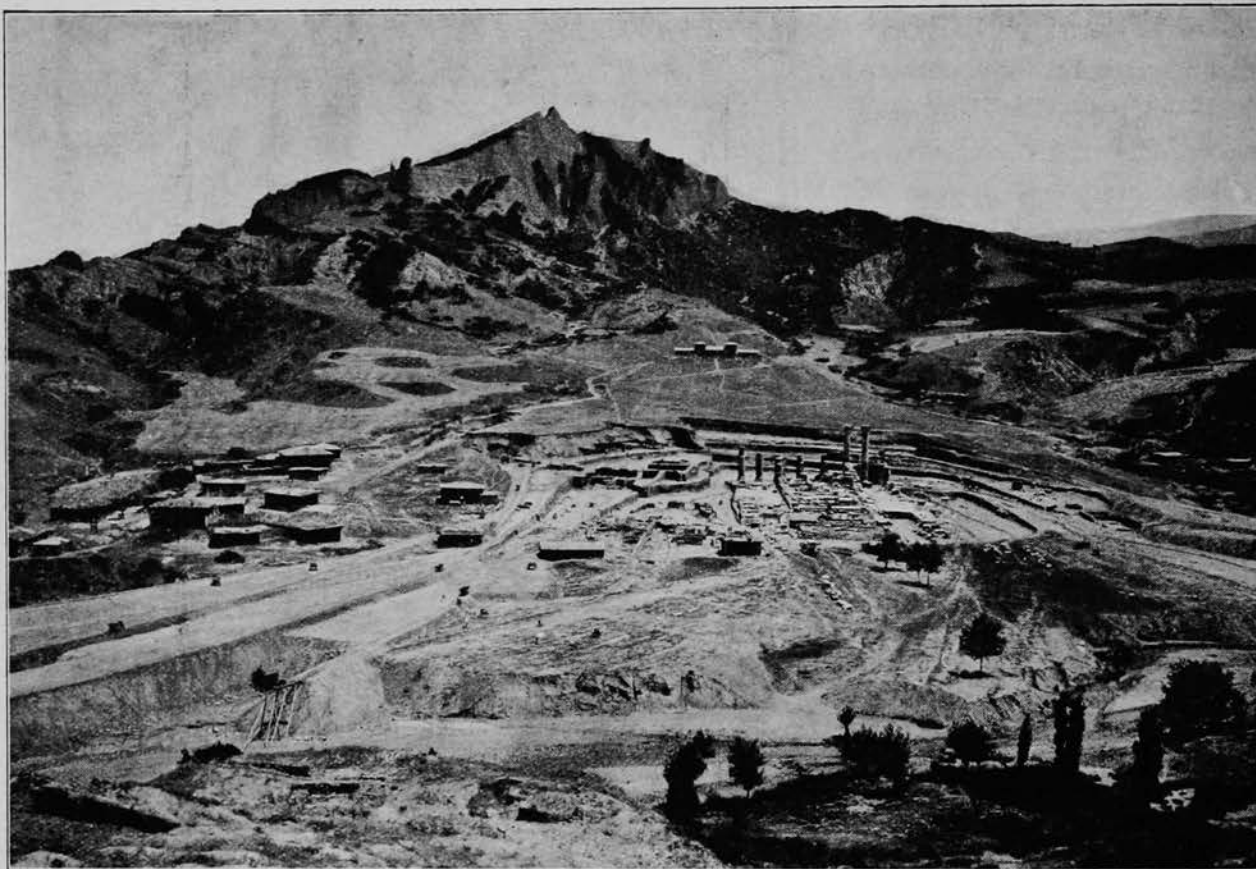
Ill. 170. Pottery Fragments from New Trench.

<sup>1</sup> A. J. A. XVIII, (1914), p. 437.



bottom level of pottery fragments had not been reached at the end of the season; for pits dug 60 cm. below the level just described were still yielding small bits of red, black, and grey pottery, apparently hand made. These discoveries serve to establish the great antiquity of Sardis as a centre of culture.

Work on the new excavations proceeded rapidly under the supervision of Mr. Mc CORMICK. As soon as the trench in the dry stream-bed was begun, it was found necessary to cut narrow openings in several walls which lay at right angles to the trench, in order to extend the railway line; the north walls of the buildings to which these cross-walls belonged coincided exactly with the northern boundary of our con-



Ill. 171. View of the Akropolis of Sardis; the Excavations at the End of the Season of 1914, from the West.

cession. But in carrying the side of the new excavations toward the south we soon came upon a long narrow street (Ill. 169), lying east and west, which bounded the house, or houses, the cross-walls of which we had pierced for the railway. On the opposite side of the street was a long, stout wall, parallel to the new trench, extending from one end to the other of the new excavation, i. e. over 40 m., and from 2 to 6 m. high. The end of the wall, which is unbroken by an opening of any kind, disappeared in the deep unexcavated bank at the east end of the trench. As soon as the great length of this wall became apparent, it was assumed that it must be either the north wall of the temple precinct or the rear wall of a long stoa bounding it on this side. When the long wall was found to terminate toward the west in an angle, and a west

wall only 13 m. long projecting southward had been turned, the accuracy of the second assumption was at least temporarily established.

Some very good Lydian pottery, chiefly large storage vases, was found in the lower layers along the first line of railway (Ill. 167) and several fine pieces of Hellenistic ware came to light within the walls of the houses, on somewhat higher levels. But it was in the upper, or eastern, end of the new trench that most of the interesting finds of pottery were made. Many pieces were unbroken, others could be mended easily. Among the Lydian pieces are jugs, plates, skyphoi and stands, one skyphos adorned with a frieze of gazelles. In one of the deeper levels was found a large jug in jet black clay, without lip but with a curling handle, and fragments of a large vase with painted decoration of geometric type, having figures of men on horses in relief, (Ill. 170). The figures, moulded in the most archaic manner, are brightly painted.

The west end of the long stoa building was turned just at the time when the



Ill. 172. Sculptures from the New Trench.



Ill. 173. Sculptures from the New Trench.

old excavations reached this same point (Ill. 171). But the digging season of 1914 was drawing to a close, and there was not time enough to undertake the complete unearthing of the stoa. During the two days which remained after excavation on a large scale had been suspended, and when we were preparing for departure, a few peasants who were our near neighbours were kept at work clearing out a narrow space at the west end of the stoa. Just before noon on the last day, while we were at luncheon, a telephone call from the foreman, who had never before used a telephone, announced a wonderful find, which he described as being "not a picture of a horse, but a real horse". In the extreme end of the stoa they had come upon the most finished example of sculpture that has yet been found at Sardis, a horse's head (Ills. 172, 173), which Professor HENRY FAIRFIELD OSBORN, the well known authority on the anatomy of the horse, considers an admirable specimen of equine portraiture. Within an hour, and only a few yards away, other fragments of sculpture came to light, namely three hands and one foot, all lying near a statue-base which appears to be

practically in situ. They are all of excellent workmanship, and the foot has a gilded sandal. Their condition shows that they have not been thrown about, or long exposed to misuse, for, though delicately made, they are not scratched or chipped; and since some of the fingers lay only a few centimetres from the hands to which they belonged, the spot where the fragments were discovered cannot be far from that where they originally fell. A few more days of digging might have brought forth the statues of which these members were parts, but the season was finished, everything was closed up, and our passages outward from Smyrna had been secured. We had to be content with throwing down several tons of earth over the place of these interesting finds and waiting for another season.

## 2. TOMB EXCAVATIONS ON BOTH SIDES OF THE PAKTOLOS AND AT BIN TEPÉ.

The excavation of tombs was carried on throughout the season, at first as before on the west side, and later upon the east side of the Paktolos. Toward the end of the season Dr. SHEAR undertook to investigate some of the famous tumuli, or "Royal Tombs" of Bin Tepé. In the digging on both sides of the Paktolos a number of interesting objects were, as usual, discovered: pottery, bronze utensils, terra-cottas, glass, seals and gold ornaments in great variety. Among the curious finds in pottery are two lanterns with arched handles, their sides perforated with small holes, and each containing its original lamp. Of particular interest, among the gold articles, are a necklace composed of long narrow units beautifully wrought and double-strung on two threads like a modern "dog-collar" necklace, and three small lions apparently carved in the round from nuggets of gold, and set upon thin gold plaques, to be sewn, or rivetted, on to some article of dress. The lions, it may be noted, have the exact pose of the reclining marble lion discovered near the temple in 1913, except that one of them turns his head in the opposite direction.

Professor CHASE's studies, devoted, during the season of 1914, to the great collection of pottery which had been accumulating during the four previous years of the excavations, brought out a number of interesting side-lights upon the industry of Sardis, and added a new chapter to the history of the potter's art. Observation of the clays employed reveals the fact that from first to last the Sardians manufactured most of the pottery which they used, though they probably exported little; for no pots of distinctive Lydian make have been discovered in other parts of Asia Minor or elsewhere. From time to time, however, they imported wares from places more or less distant, and the presence of such well known types as black and red-figure Attic vases, "Rhodian", Corinthian and "Cyrenaic" wares, in tombs with unfamiliar pottery, makes it possible to begin a chronological classification of these new and hitherto unknown types which are assumed to be of native workmanship. Indeed the finding of pots with Lydian inscriptions upon them leaves no doubt as to the provenience of several of these new types.

In the later periods, Hellenistic and Roman, the pottery of Sardis made on the



spot does not differ much from that of the corresponding periods in other parts of the Mediterranean world. During the Persian domination the native potteries appear to have found it difficult to compete with the workshops of Attica, or with the Athenian control of trade, and their products show little technical skill at that period. But the era of Lydian greatness, extending from the fall of Sardis in the middle of the sixth century back through the seventh, produced varieties of pottery not only new in the history of ceramic industry, but the fabrics, shapes and decoration of which give to this branch of Lydian art a place of considerable importance<sup>1</sup>. The pottery fragments from the deeper levels of the new trench to the northeast of the temple include many sherds with geometric and sub-Mykenaian designs upon them which are undoubtedly of local make. These designs and the depth of the layers in which the sherds were found, i. e. beneath strata of fragments known to belong to the sixth and seventh centuries B. C., suggest the eighth and ninth centuries as the probable date of their manufacture. Below these last there are stratifications of fragments which are presumably still earlier; but any dating based upon a series of levels can be only tentative.

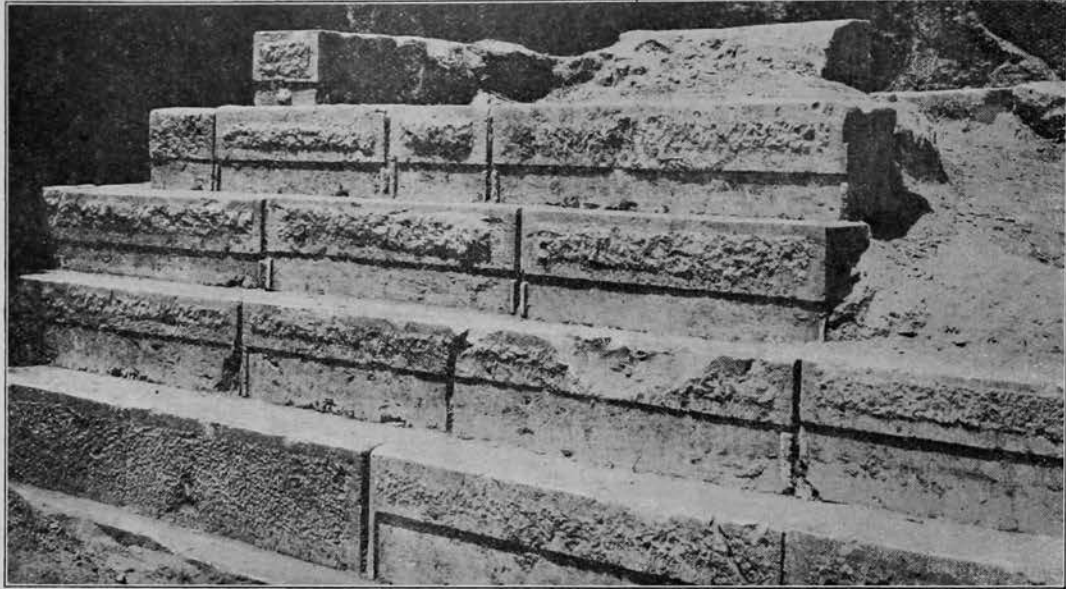
We were somewhat astonished to find on the city side of the river and even below the Akropolis, on its northwest slopes, tombs of several types and of various periods. A mound which looks like a tumulus, rising above the lower village beside the river, proved to have no interior chamber, but to have been honeycombed with late graves, some with arched covers like those of the Byzantine burials near the temple. Nearer the base of the Akropolis were unearthed more than two dozen tombs of the variety most common in the old Nekropolis west of the Paktolos. And lastly, high up on the steep south bank of the second ravine to the north of the excavation house (K in Ill. 18) was found an unusual form of tomb, a pyramidal monument of seven steps. The upper part had been destroyed, but there remained the pavement of a chamber on the level of the seventh step. In order to place the structure on the slope of the ravine it had been necessary to cut a terrace in the hill to secure a level base, and in the face of this terrace, behind the pyramid, but not on axis with it, was one of the ordinary chamber-tombs, with dromos and couches, on one of which lay some gold beads. The limestone steps of the pyramid are rusticated, and the joints of their perpendicular faces are cut in a peculiar manner, as may be seen in Ill. 174. This monument is described in greater detail in Chapter VIII, pages 167 to 170.

Dr. SHEAR's work at Bin Tepé necessitated the establishment of a camp on the far side of the Hermos. The distance is too great for the journey over and back to be made in one day, while allowing proper time for work, and the fording of the Hermos is an uncertain matter even in early summer. With a neighbouring tumulus, excavated some years ago by the natives, or perhaps by DENNIS, to serve as an example, digging was begun upon two mounds, one small, the other of medium size, i. e. about 50 m. in diameter. The tumulus already opened showed a dromos lined with limestone blocks, and several interior chambers, similarly lined, opening off from a central space. Though five weeks were spent in cutting away the sides of these two mounds, and in driving trenches and tunnels into their interiors, neither a dromos,

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<sup>1</sup> cf. Professor CHASE's Preliminary Report in *A. J. A.* XVIII (1914) pp. 432-437.

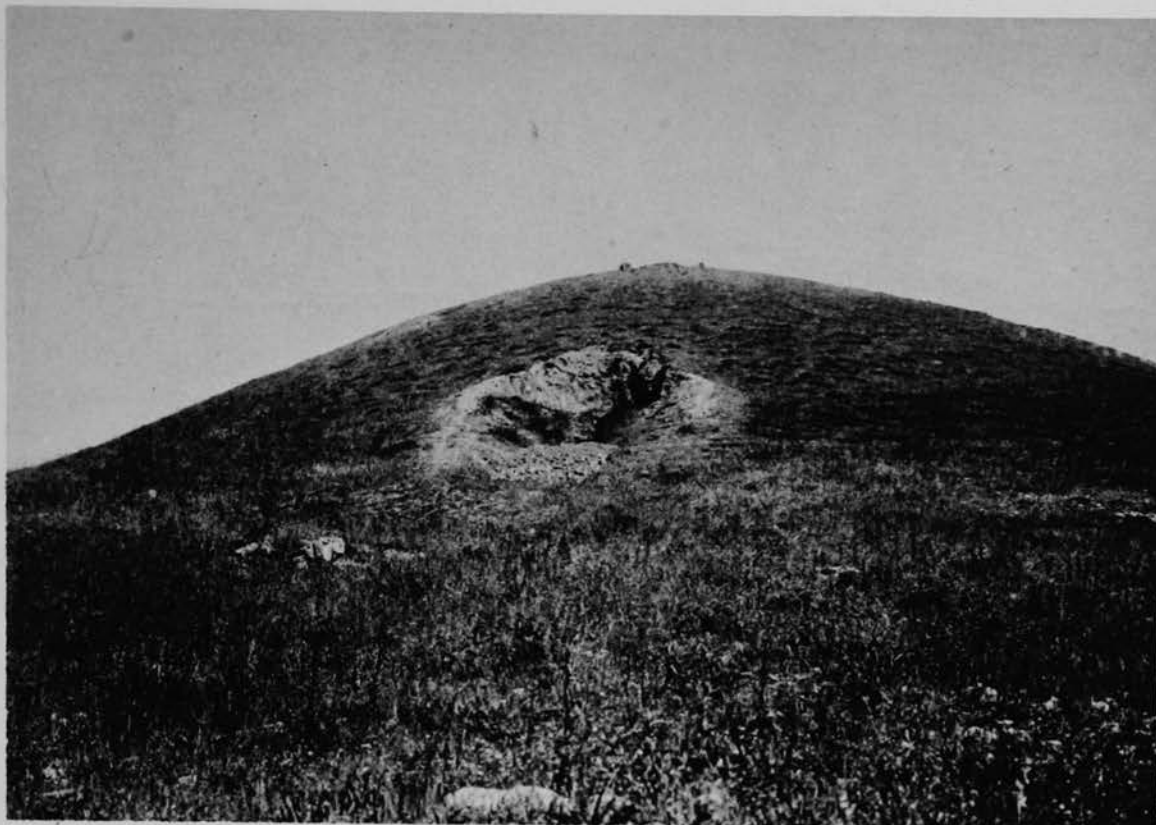
nor any indication of an inner chamber was revealed in either case. This initial attempt on the part of our expedition to examine the Lydian tumuli was thus barren



Ill. 174. Steps of Pyramid Tomb Northwest of Akropolis, View from the Northeast.

of results; but the undertaking is a formidable one, very much bigger than it at first sight appears, and this trial campaign should rather be taken as encouraging, since it seems to show that many of these tumuli are still inviolate.

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One of the smaller Tumuli of Bin Tepé, opened before 1910.

## CHAPTER VIII.

### THE TOMBS.

The tombs of Sardis represent all periods of her history, Lydian, Persian, Hellenistic, Roman, and Byzantine; those of the three earlier periods are scattered far and wide, whereas the later tombs have been discovered only within the city, or near it. The famous Lydian tumuli<sup>1</sup> are situated north of the river Hermos at a distance of 6 or 7 miles from Sardis, but smaller tumuli existed nearer the city in the Paktolos valley, and a few are still to be seen on the south side of the Hermos valley 3 or 4 miles west of the Paktolos. The Lydian chamber-tombs, hewn out of the hillsides, which are the commonest form of burial-place at Sardis, are found in great numbers in the slopes and precipices on both sides of the Paktolos and far up in its tributary ravines, over an area of several square miles. During the Persian and Hellenistic periods burials appear to have been commonly made in tombs of old Lydian handiwork, yet it is quite possible that some new chambers were then excavated in imitation of the old.

It would appear that, in the early Roman period, or at least until the first century after CHRIST, the dead were often burned, and that their ashes in urns or cippi were placed in tombs already occupied during Lydian or Hellenistic times. The later Roman

<sup>1</sup> For description, cf. Chapter I, pp. 8—11.

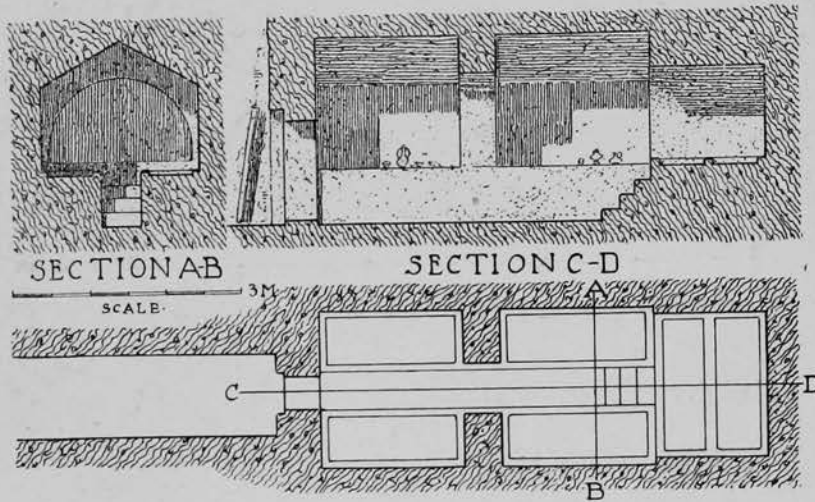


period is thus far represented only by a monumental tomb, described on pages 170—174 of which the splendid sarcophagus of *CLAUDIA ANTONIA SABINA*<sup>1</sup> was an ornamental feature. The Byzantine period is illustrated by hundreds of simple stone or brick-lined graves, and by a few small tunnel-vaulted chambers, one of which, decorated with mural paintings, is described at the end of this chapter and in Appendix II, p. 181.

## 1. LYDIAN TOMBS.

### A. CHAMBER-TOMBS.

The ordinary type of Lydian tomb is that already described on page 56. It was excavated in the hard-packed clay or rock of the mountain sides, and consisted of a dromos with a doorway leading into a chamber with a couch on either hand and a double couch at the end opposite to the entrance, or, in place of this end couch, with



Ill. 175. Typical Lydian Tomb.

a second doorway opening into another chamber with side couches and double couch at the rear (Ill. 175). The dromos is long or short, according to the amount of erosion that has taken place. Those of tombs in the lower tiers on a slope are buried to a great depth. The doorways were closed either with single large rough-hewn slabs, or with several slabs, or with crude walls laid in clay. I am inclined to think that many of these doors

or walls, as we find them today, were added during the later periods when the tombs were re-used, and that the original doors of limestone, carefully cut and panelled like that shown in Ill. 49, were taken away for other uses. The best preserved chambers show a double-pitched ceiling, but in many cases friability has caused much dropping away of the surface, so that the ceilings are roughly rounded (Ill. 176). Many of the tombs show remnants of plaster on their walls, and it is quite probable that most of them were plastered. The couches are about eighty centimetres high, the passage between them very narrow, and usually two or three steps lead up to the end couches which are a little elevated above the others. The end couches often, and sometimes also the side couches, have depressions 10 cm. to 20 cm. deep, sunk in their upper surface. These are occasionally as deep as a sarcophagus and some of them contain sarcophagi of terra-cotta. In other cases these coffins were placed on top of the

<sup>1</sup> See pp. 135—138 and Pls. IV and V.

plain couches. Ordinarily the dead were carried in upon wooden biers or stretchers which were laid on the couches; remains of these have been found in bits of rotted wood, and in bronze details such as rings for the carrying-poles. These the most ordinary tombs may be classed as Lydian for two reasons: first, they are found in the nearest and most natural place for a nekropolis, directly across the river from the city below the Akropolis; secondly, evidence that almost all of them were originally Lydian, re-used in later times, is given by the fact that the slopes directly below them are strewn with Lydian pottery, and that, even when their contents are Hellenistic, small Lydian sherds and other remains are often found inside them. Probably each tomb was marked by one or two stelae, the placing of which is discussed below.

From this the most common type there were numerous variants. A few tombs have but a single chamber, cubical or oblong, without couches. It was in one of this kind, on the east face of the Nekropolis, directly opposite to the temple, that our first important collection of Lydian pottery was found<sup>1</sup>. Possibly this chamber was not re-used in Hellenistic times because it had no couches, or — more probably — it had remained unrifled, because a tomb directly above had caved in and filled it. Its long dromos was choked with earth packed so hard that it was the most difficult of all the tombs to open, and was several times almost abandoned by us.

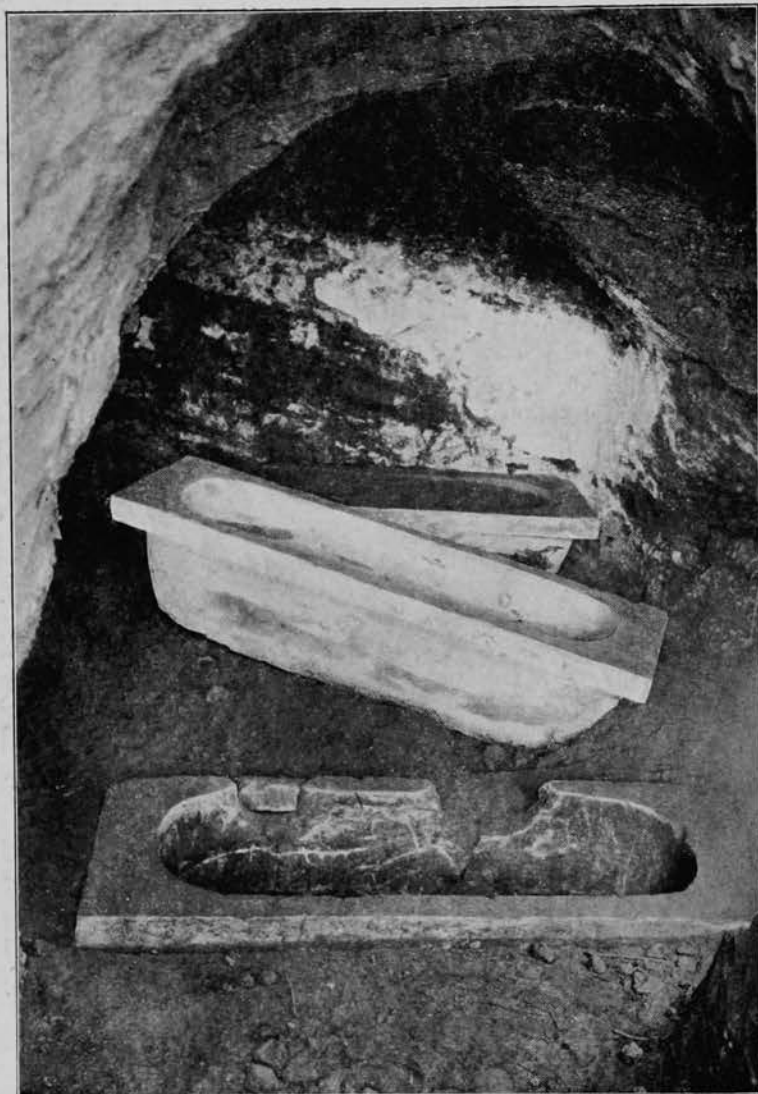
Another of these single-chambered tombs is among the most notable of all those of Lydian origin, because it retains some of its architectural features and had not been thoroughly rifled. The chamber is large, and had contained four sarcophagi of limestone,



Ill. 176. Interior View of Double Chamber Tomb.

<sup>1</sup> See p. 79 and Ills. 75 A, 75 B.

one of them sunk in the floor and covered with slabs. One sarcophagus had been removed, the other two were without covers (Ill. 177), and I believe that the tomb was entered at some early date, when one sarcophagus and the lids of the others were taken away, stone having always been in demand at Sardis because almost all of it was brought from a distance. Nevertheless some pottery was found intact, and a few small gold objects hidden under deep layers of earth. The pottery, some of which is shown in Ill. 124, indicates that this tomb belonged to the period immediately



Ill. 177. Lydian Sarcophagi in Single-Chamber Tomb.

following the Persian conquest of Lydia. The tomb is entered through a broad short passage, in front of which is a flight of limestone steps, flanked at either end by one stele of the same material. A photograph of the steps and of one stele is shown in Ill. 122, a plan and elevations are given herewith (Ill. 178). The entrance was probably faced with a wall and doorway, which were carried away with the sarcophagus and the two lids, after the steps and stelae had become buried in earth washed down from the high hill above. The two stelae have no letters visible upon them; both their ornaments and their inscriptions were probably painted. These, like *L. 6*, the only other stele found by us in situ<sup>1</sup>, are of limestone, whereas the rest of our funerary examples bearing Lydian inscriptions are of marble (Ills. 179 and 180). Some of these latter

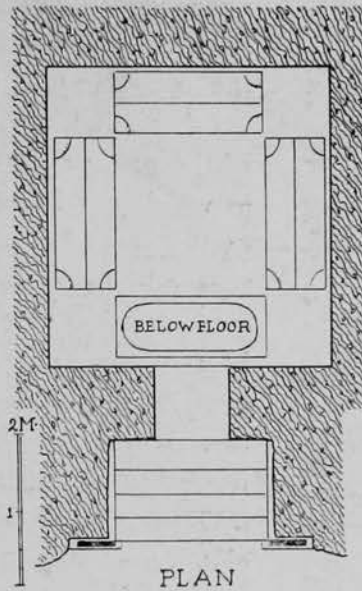
belonged to the period following the Persian conquest, two at least being dated by a year of a Persian reign<sup>2</sup>. Probably many of them occupied positions similar to those of our two limestone stelae; but others may have been differently disposed, either on

<sup>1</sup> See *Sardis*, VI, I, p. 44. This stele stood on the left side of the dromos, as one approached the tomb, at a distance of 4.30 m. from the doorway.

<sup>2</sup> *ibid*, pp. 23, 48. The slab *L. 1*, mentioned on pp. 56, 57 (Ill. 49) is not a stele, but a limestone door.



LYDIAN TOMB  
WITH  
SINGLE CHAMBER



Ill. 178.



Ill. 179. Cap of Stele bearing Bilingual Lydian-Aramaic Inscription.

both sides of the doorway, where there is always sufficient room (Ill. 175), or like *L. 6* beside, and at the outer end of, a long dromos. If this passage was filled up with

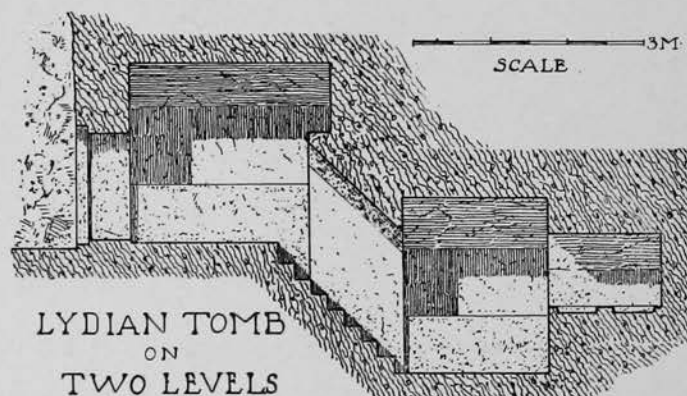
earth after each burial, as may well have been the case, the stelae would have provided useful guide-posts to the reopening of each tomb.

A second, and very rare, variant of the ordinary chamber-tomb is one in which the inner room is reached by a flight of steps descending from the end of the passage between the couches of the first chamber (Ill. 181). In the tomb represented in the accompanying plan there was a stone door with a small hole in it, at the bottom of the steps. Other variants present greater complexity or more elaborate interior arrangements. Many of these tombs of irregular plan are cut out of solid sandstone along the bluffs of the Paktolos, well to the south of the city, and in the sides of the deep ravines which open upon the river valley (Ill. 155). Most, perhaps all, of them were made in the early Lydian period; for, although all had been

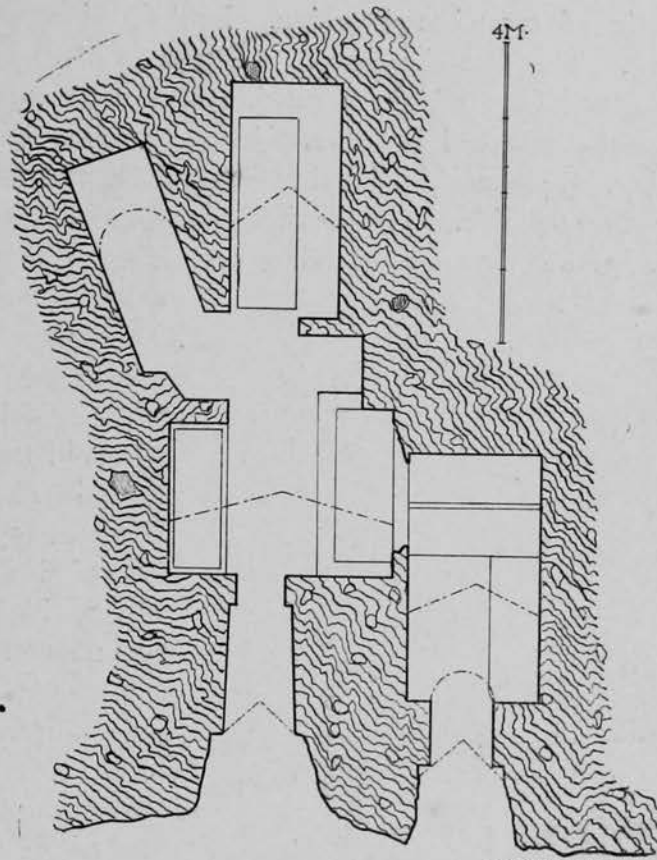


Ill. 180. Cap of Lydian Stele.

rifled, some of the earliest objects yet discovered by us and some very early fragments of pottery were found in them. A good example is to be seen in the face of a bluff rising directly above the Paktolos, on its east bank, about a mile above the temple (Ill. 22). Here is a row of rock-hewn tombs, two of which are shown in the accompanying plan (Ill. 182); that to the right has a single chamber with one couch on the right side and a double couch at the end. Above the entrance is a pointed hood, the entrance itself has a semi-circular tunnel-like roof, while the ceiling within is double-pitched. This tomb now opens into another to the left, or north, by a hole broken through the thin natural partition.



Ill. 181.



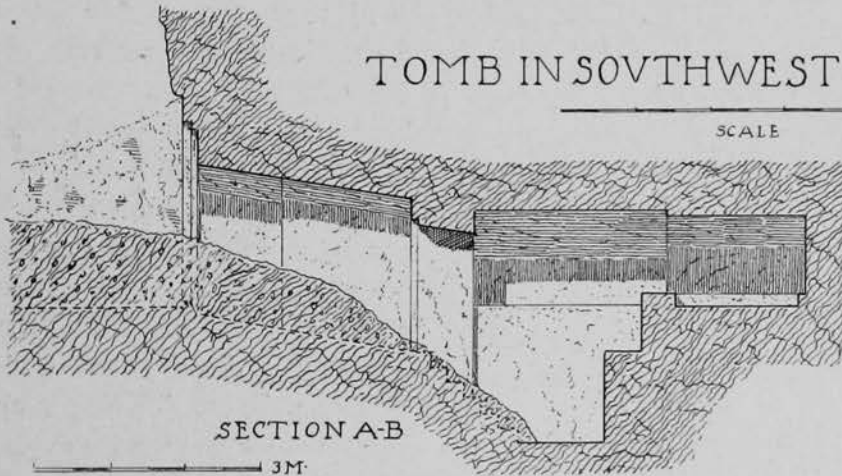
FM GODWIN

TOMBS IN SOUTH NEKROPOLIS

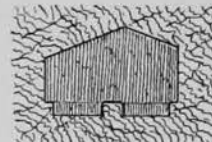
Ill. 182.

TOMB IN SOUTHWEST NEKROPOLIS

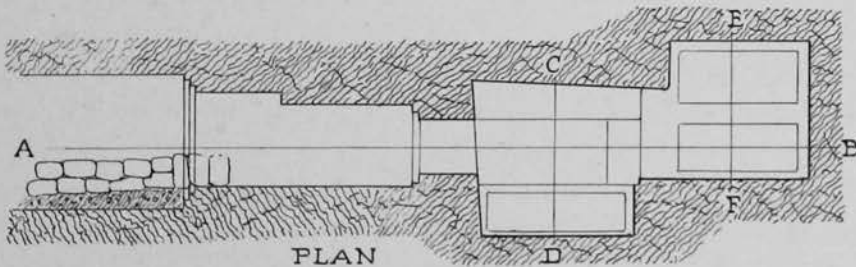
SCALE 5M



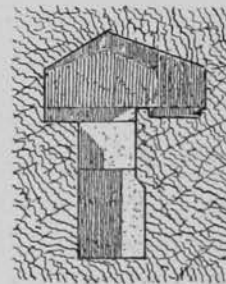
SECTION A-B



SECTION E-F



PLAN



SECTION C-D

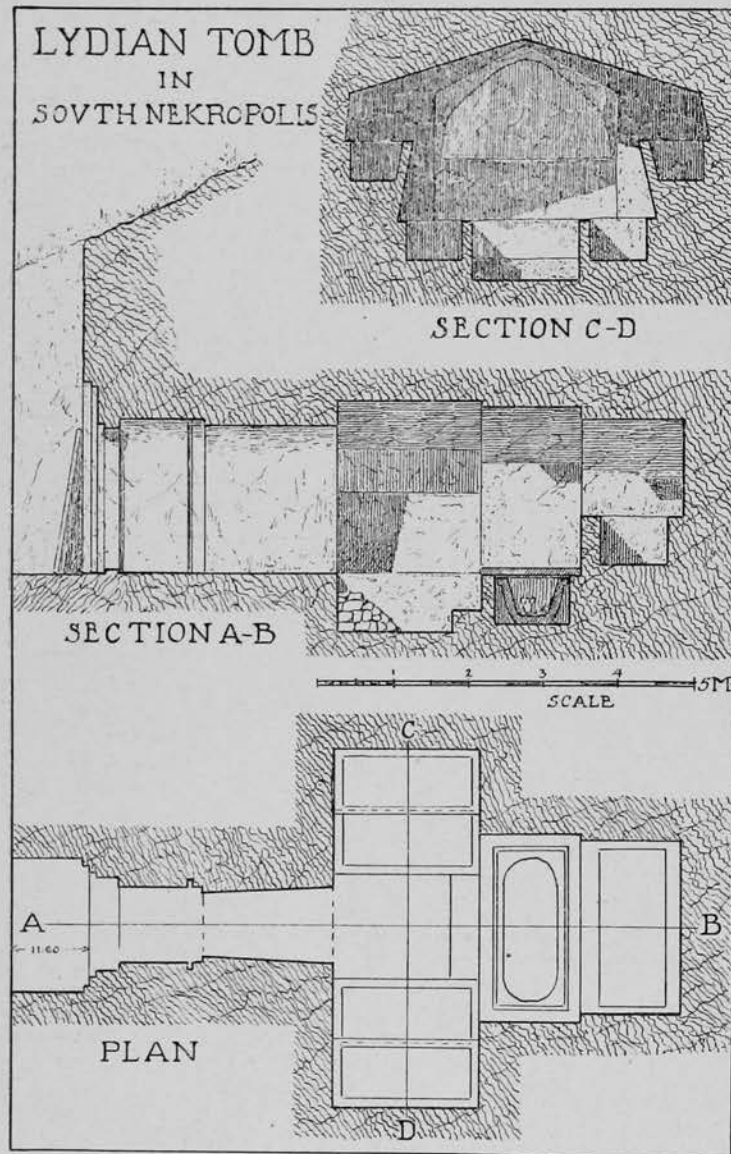
Ill. 183.



The adjoining tomb is of complicated design. Its long dromos is covered with a sharply pointed ceiling. The first chamber is irregular in plan, having on the left a rock-hewn sarcophagus and on the right a couch raised upon one step; the ceiling is obtusely pointed. At the east end is a broad irregular space opening eastward into a large oblong chamber, with sharply pointed ceiling, where a large grave is excavated in the floor a little to one side. To the left of this, and giving upon the same irregular space, is another oblong room extending eastward at a sharp angle, and with a

rounded ceiling. The interior walls of these three chambers are highly finished, and all the angles sharp and accurately cut. In this tomb was found the archaic ivory head shown in Ill. 156.

On the opposite side, that is west, of the river and well back upon the higher slopes, among a large number of rock-hewn tombs of the ordinary type, is another tomb of irregular plan (Ill. 183). Here, in the face of a low cliff, is an entrance, in the form of a recessed doorway closed with a stone, within which a dromos about 4 m. long slopes slightly downward to a second doorway and door. Beyond these are steps descending to a low narrow chamber with a burial couch on the right, 2 m. above the floor, and a narrow shelf at the same level on the opposite side. Farther in are a high set-off and a narrow chamber with two slightly sunk couches. All the ceilings are bluntly pointed. There are on all the walls ample remains of plaster of fine quality and of a beautiful pink colour. The dromos is partly



Ill. 184.

filled by an ancient stone wall built against one side, probably to prevent its caving in.

Of all the rock-hewn Lydian tombs the most elaborate and interesting is one high up in the precipitous side of a ravine, which opens into the valley of the Paktolos from the east. The entrance to it is shown in a photograph (Ill. 157) in an earlier chapter. It is approached by an open dromos, 11.60 m. long, 1.32 m. wide at the opening and 1.82 wide at the doorway. The passage, about 3 m. long, from the outer

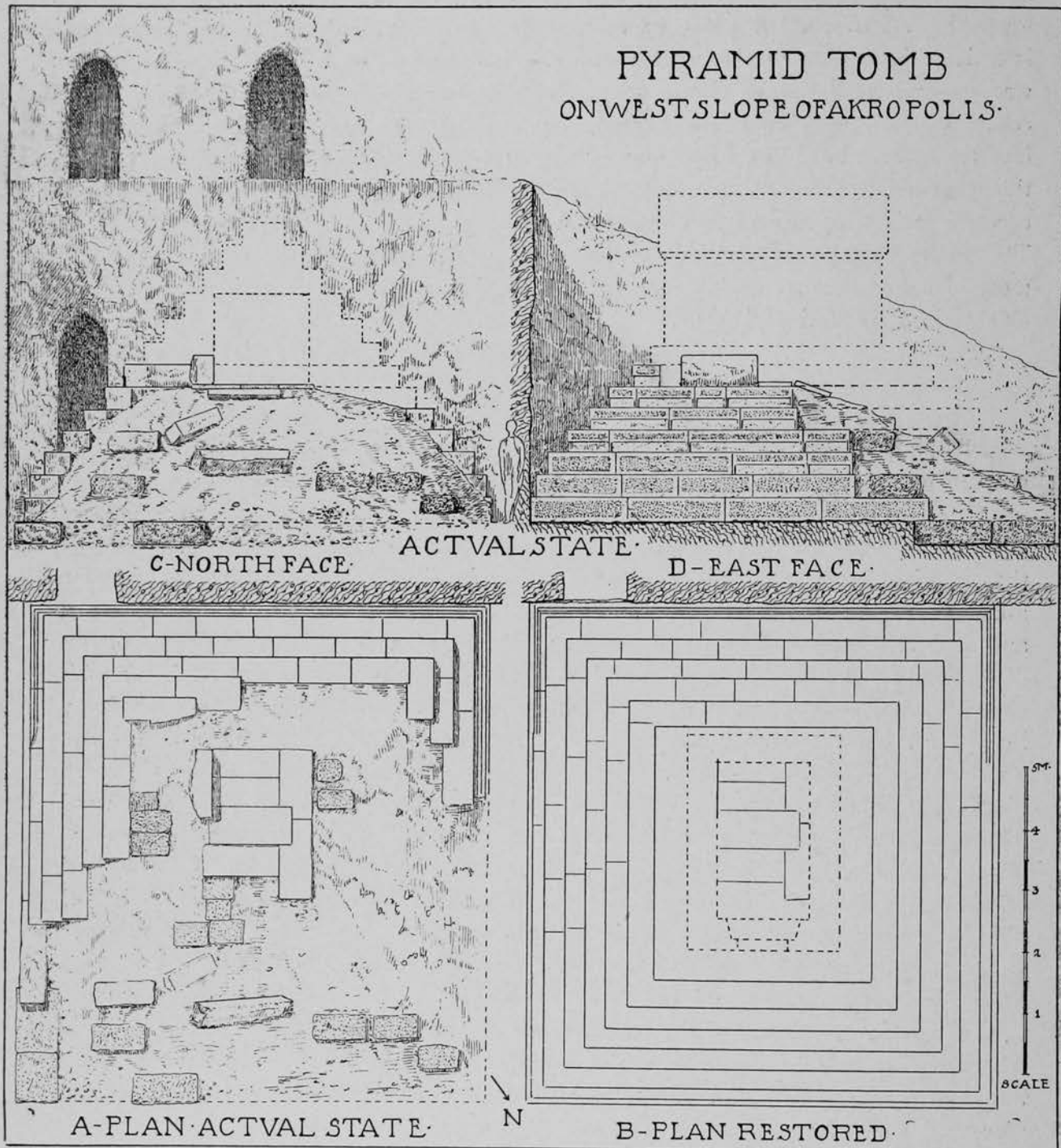
doorway to the chamber, is about half as wide as the dromos (Ill. 184), and in its sides are slots into which had been fitted an intermediate door. The middle space in the chamber is 4.75 m. wide and 2.20 m. deep. On either hand are two large rock-hewn sarcophagi, one above the other like steps, the faces of the upper ones slanting forward. At the end approached by a single step, is a platform, in the floor of which is a deep depression containing a well-made limestone sarcophagus. This, when found, was covered by flat stone slabs and perfectly concealed. Beyond is a raised arcosolium containing a single rock-hewn sarcophagus. The side walls of the main chamber, i. e. the walls above the upper sarcophagi, are inclined slightly inward, the ceiling of this part being obtusely, and that above the platform more acutely pointed, while the arcosolium is composed of two bluntly rounded angles, as shown in the section (Ill. 184). The entire surface of the interior had been covered with plaster of fine quality, but most of it had fallen off. The concealed sarcophagus had not been rifled and contained objects of gold and of bronze.

#### B. TUMULI.

It is quite evident from remains in at least two places that there were burial mounds, like the famous ones of Bin Tepé, though on a comparatively small scale, near the city and well up in the valley of the Paktolos. These tumuli were situated in high and commanding positions, and in each case so near the edge of some ravine that erosion on its side has wrecked the tumulus. The more interesting of the two, about which there can be no mistake, is situated up the Paktolos valley about a mile and a half from the Temple of Artemis. Attention was called to it by the discovery of a half-buried pile of limestone, which when excavated turned out to be an oblong chamber, lined with well finished blocks of white limestone and formerly roofed with long thick slabs of the same material. The chamber stands on high ground at the edge of a steep slope descending into a ravine. Quite by accident a row of sandstone blocks was found at a distance from the chamber describing a curve concave toward it. These stones, just visible above the surface, proved when excavated to be a wall, about 2 m. high, well built of quadrated blocks. The curve at one end was broken off at the edge of the defile, and disappeared in the gradual slope at the other. This had been the retaining wall of a tomb similar to the "Tomb of TANTALOS"; the wearing away of the side of the ravine had undermined one side of it. The rest being gradually eroded had exposed the interior chamber, which had probably not been placed in the centre of the tumulus, but at the side near the edge of the declivity. The chamber had of course been rifled at the time when its roof was broken through; but several fragments of Lydian pottery were found in the earth on the floor, including pieces of a flat lamp with five nozzles.

Remains of another structure which was almost certainly a tumulus were discovered at the top of a bluff directly across the river from the temple, to the south of the Lydian foundation-walls excavated below the tombs, near (H) in Ill. 18. Here was a curved earthen surface carefully revetted with stone from the river-bed. The revetment, about 50 cm. wide and 6 m. long, was a small segment of a large circle, and sloped

upward at an angle of about  $40^\circ$ , the whole being a fragment about 50 cm. high of a cone about 20 m. in diameter. This fragment was on the side next to the hill, where a paved gutter had deflected away in opposite directions the wash from above.



Ill. 185.

On the side toward the river a great land-slip, caused probably by a sudden change during some flood in the course of the stream, had carried away the rest of the conical structure, and now there is at this point a steep declivity descending to the



bed of the Paktolos. It is a great pity that this single example thus far discovered near Sardis of a tumulus faced with stone should have been placed in so precarious a position.

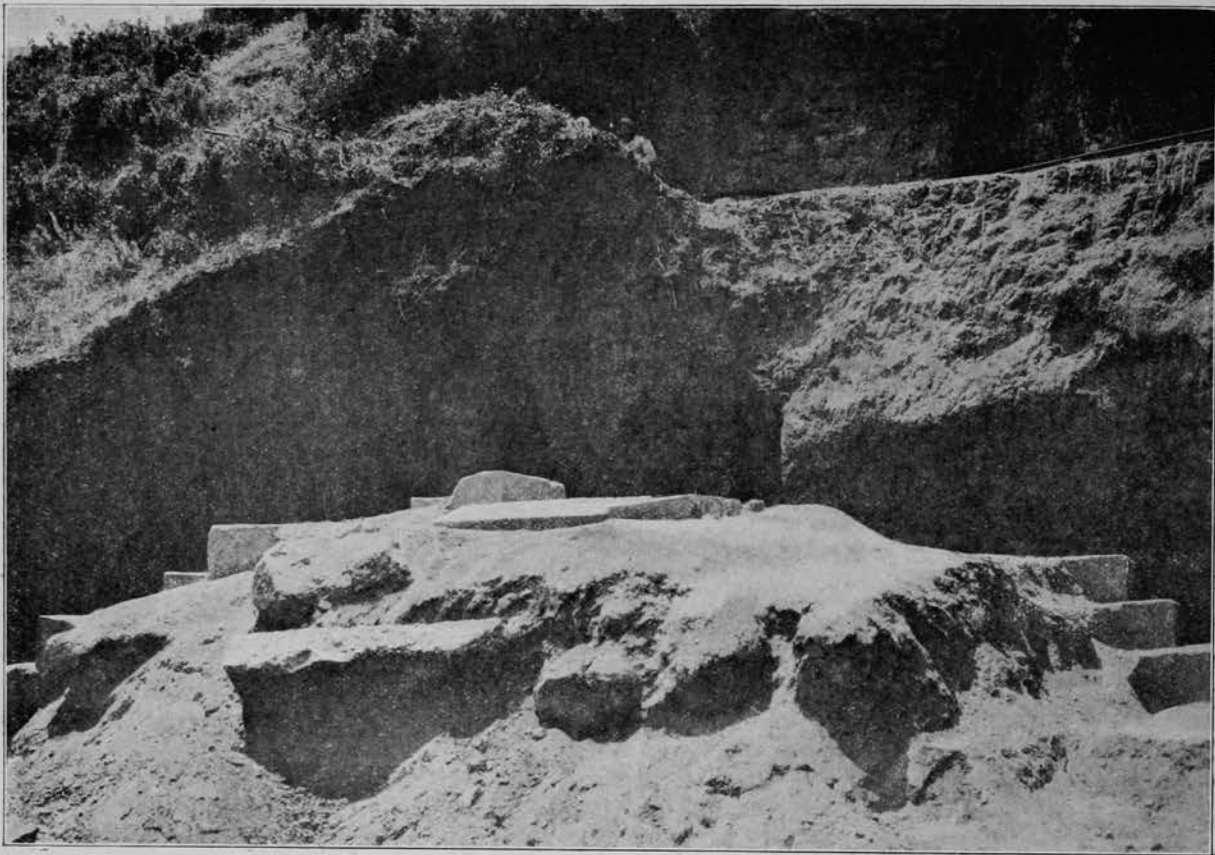
The clay formation of the hills and ridges around the base of the Akropolis has in numerous cases taken on symmetrical shapes, sometimes conical, which may easily be mistaken for tumuli. The wreck of the Akropolis Hill has itself also through erosion assumed these shapes at many points. A hillock directly behind the excavation-house looks very much like one of the Lydian tomb-mounds, but is almost certainly a mere fragment of the Akropolis rounded off into its present shape by natural causes.

Another somewhat smaller mound presented problems of its own. It stood upon a narrow plateau at the northwest foot of the Akropolis, above the village midway between the excavations and the high-road (see Ill. 18) and its shape and position seemed ideal for a Lydian tumulus of some importance. We attacked it with great confidence, and were almost at once assured of its artificial origin by the discovery of small bits of pottery. But our ardour was soon somewhat damped by coming upon a quantity of late Byzantine graves, and subsequently by the discovery of large tunnel-vaulted tombs of the same period. Convinced that an ancient tumulus had been used as a Christian cemetery, we burrowed through the entire structure until there was little left of it, without finding a trace of any early sepulchre. But, even now, I am not fully satisfied that there is not a Lydian burial-chamber somewhere beneath the ruins of that mound.

### C. STEPPED PYRAMID-TOMB.

A single example has been unearthed of a tomb in the form of a pyramid, or to be more exact, a stepped truncated pyramid. This was found, curiously enough, not on a naturally level space; but upon a terrace artificially cut back into the side of a slope, high above a ravine on the northwest shoulder of the Akropolis Hill, (K in map, Ill. 18). The pyramid was erected close to the terrace-wall of earth, in which are cut chamber-tombs of the ordinary type, while several others were found on a terrace immediately above (Ill. 185). The structure consisted of a square mound of earth (Ill. 186) covered on all four sides with steps of limestone. Four complete steps and half of the fifth are preserved on the south, — the side toward the terrace wall —, about one half of the east side steps up to the same level, and less than a third of those on the west side. Some foundations on the north give the probable limit of the bottom step on that side. Parts of the core appear to have been made of purple sandstone. The base was oblong, measuring 7.65 m. east and west, and 8.20 m. north and south including the farthest foundation stones. The lowest course projects hardly at all, the stones which compose it having draughted edges and slightly roughened faces. The first step, 35 cm. high, projects less than the others, only 19 cm.; the outer faces of the stones in it are treated like those of the course below; and in its upper surface was cut a narrow channel which extends across the rear and partly down the sides (Ill. 185, A). The second step, like all those above it, is 34 cm. high, with a tread of 29 cm. The first two stones at the south end of this step have smooth draughted edges and a very slightly roughened

surface, the others have two equal faces, or bands, the upper projecting more than a centimetre (Ill. 174). The lower band is very smooth, the upper has a wide smooth chisel-draught of unequal width about a narrow roughened surface. At either end of the lower face is a very narrow vertical strip, or lug, projecting as far as the face of the upper band and, just below this, chiselled off at an angle at the top. Two of these coming together at the joint between two stones produce a curious effect, not unlike a hem executed in stonework (Ill's. 174, 187). It is to be noted that a similar feature appears in the marble steps at the northwest angle of the Temple of Artemis. All the remaining steps and parts of steps are treated in the same manner,

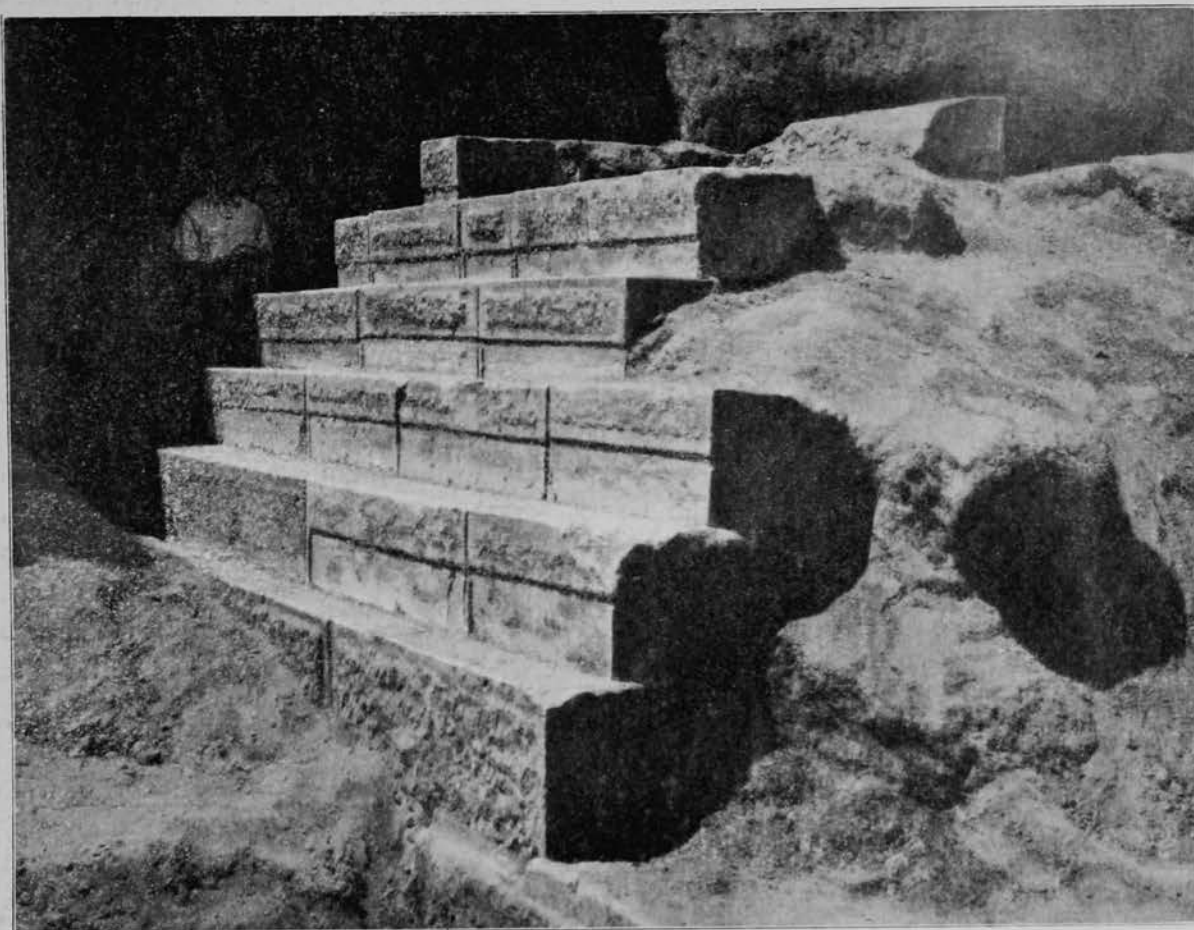


Ill. 186. Pyramid Tomb, View from Northwest.

but in some cases the upper band is wider than the lower, and as the steps ascend, the rough surface is more and more prominent, eventually becoming "quarry-faced".

One stone of the sixth step is in place at the south-east angle. On the level of the bottom of this stone, in the middle of the mound, is a pavement of large oblong slabs of limestone practically all in situ. On the east side of this pavement, at its south end, is a single wall-stone in its original position, with smooth face turned toward the pavement, showing that this formed the floor of a chamber, one side-wall of which is represented by that stone (Ill. 188). On all sides of this pavement are closely-fitted blocks of purple sandstone now very badly decayed.

It is possible with these data to restore the tomb in two ways, as shown in the



Ill. 187. Pyramid Tomb. View from the Northeast.



Ill. 188. Pyramid Tomb. View from the West and above.



drawings. In Ill. 185, C I have drawn in dotted lines a complete stepped pyramid of twelve steps, excluding the base course, and in 185, D I have shown an aedícula on the seventh step, making a restoration of the same type as the so-called Tomb of CYRUS the Elder at Pasargadae. The plan (Ill. 185, B) would answer for either. The chamber measures 2.50 m. long and 1.50 m. wide. In the restoration as a pyramid the ceiling of the chamber would be 1.50 m. high, and the third step from the top of the pyramid would consist of long slabs running through and forming its roof. If the chamber was to have been approached after the body or bodies had been placed in it, a break for a doorway might have been left in the middle of three or four steps of the north or south face. In the restoration as an aedícula the height of the chamber cannot be fixed by any structural considerations. There was apparently no receptacle for a body underneath the slabs of the pavement.

It is not possible to determine the date of this monumental tomb, yet I have no doubt that it belongs to either the Lydian or the Persian period. Limestone and purple sandstone were practically the only stones used in the lower pre-Hellenistic levels at the Temple of Artemis; limestone is used for steps, doors, sarcophagi and stelae in the earlier tombs across the river; and limestone for the walls of passages (Ill. 3) and for the entire construction of the chambers, appears also in the tumuli of Bin Tepé, where it is interesting again to observe the curious practice of draughting the edges of the stones and leaving hem-like lugs at the joints. Up to the present time we have found in this kind of stone, which seems to have been transported from across the Hermos, no Hellenistic or later architectural details.

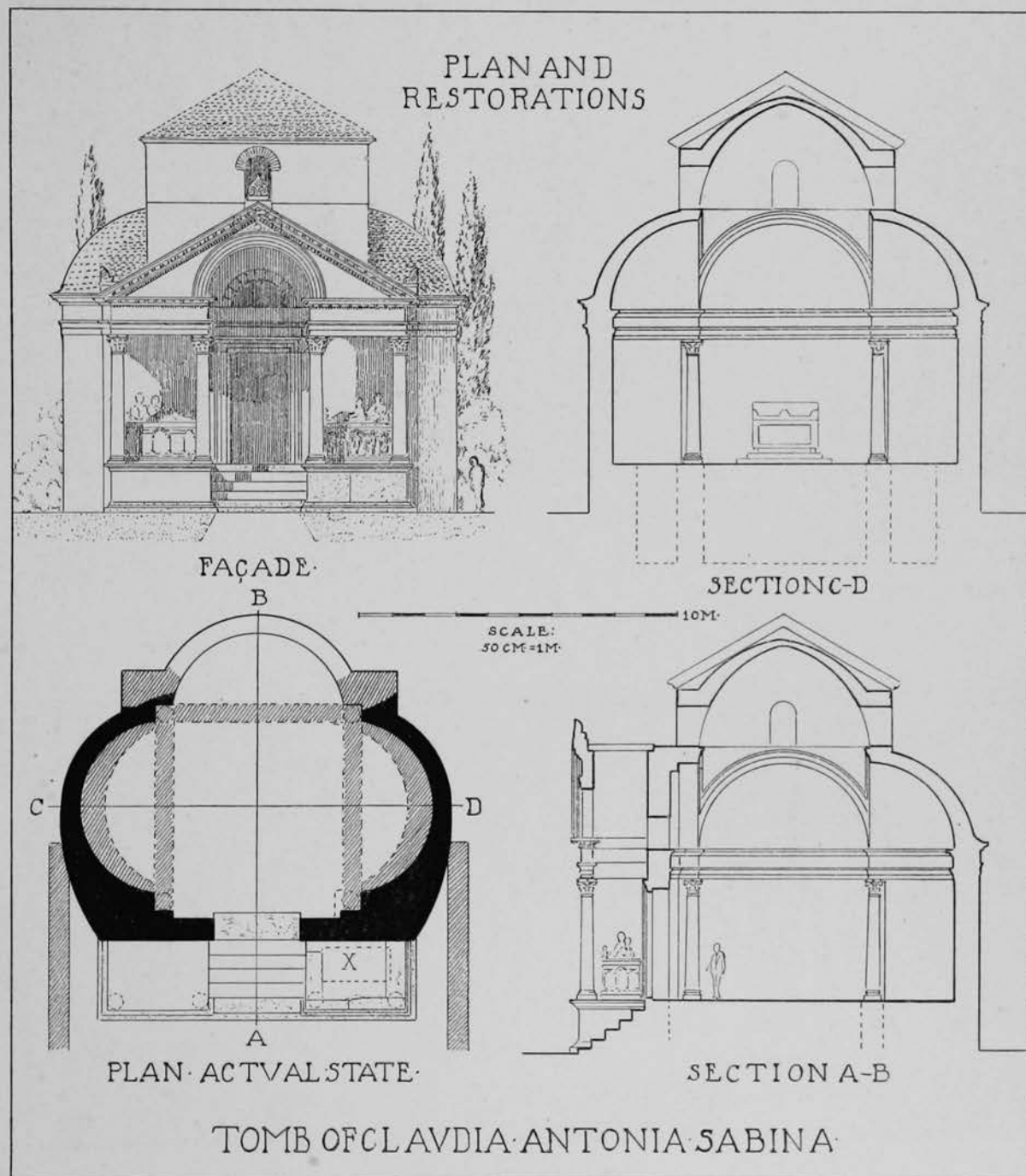
## 2. ROMAN TOMBS.

### A. TOMB OF CLAUDIA ANTONIA SABINA.

The tomb of which the sarcophagus of CLAUDIA ANTONIA SABINA, (p. 136) was an ornament, is the only one thus far discovered at Sardis unquestionably dating from the pre-Christian Roman period. The finding of this tomb was in fact an accident; for no attempt has been made by our expedition to investigate the remains of the Roman city. But the small excavation carried out in the plain in search of fragments of the sarcophagus brought to light a building of more than usual interest. It stands, not far west of the Paktolos and of the city wall, on the south side of the principal road, undoubtedly the successor of the ancient "Royal Road", and it faced upon this highway, which in Roman times passed through the city (see G in Ill. 18). The first architectural feature to appear was a large low marble pedestal, its die and base mouldings perfectly preserved, its cap missing. Around it lay many fragments of the sarcophagus, and as soon as the dimensions of this were known, we found that the pedestal was large enough to carry it with room to spare. The pedestal ended to the south against a wall of concrete masonry; next it on the east had been a flight of steps about 3 m. wide, the lower step of which was in situ, and to the east of these were the base-mouldings of another pedestal similar to the first (see Ill. 154). It will

be observed that the pedestals form two large parotids on each side of a narrow flight of steps, at the top of which the marble threshold of a doorway is still in place.

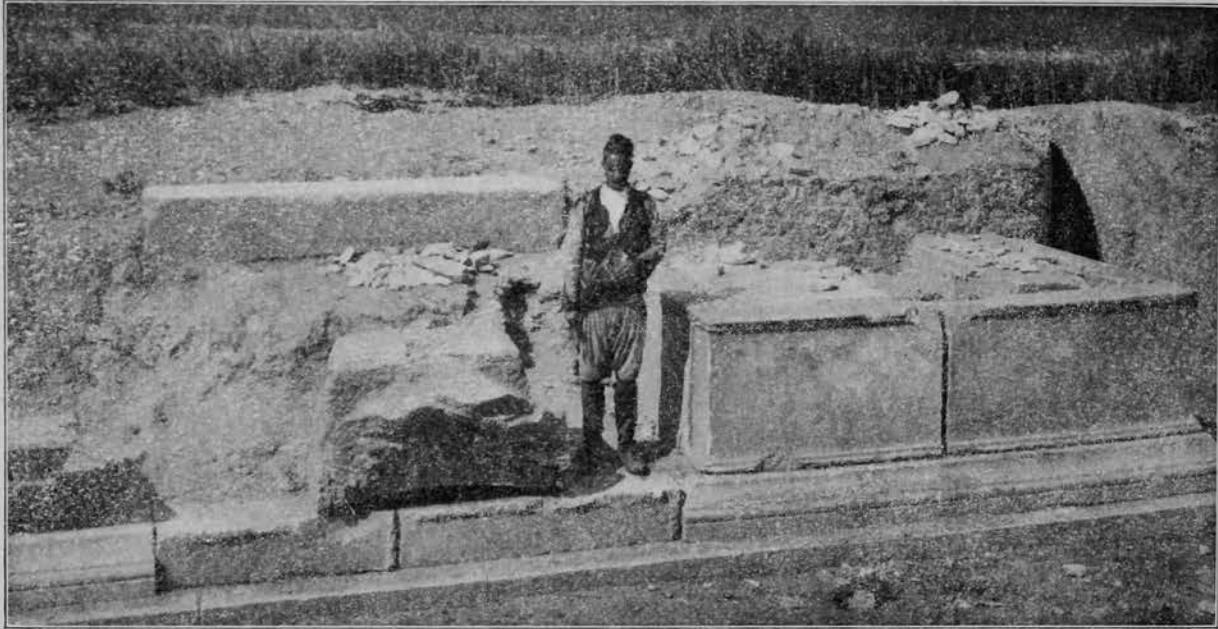
The wall of concrete behind the pedestals ends abruptly with their outer limits, and then curves southward and slightly outward on either side (Ill. 189). Outside of



Ill. 189.

the parotids, and not more than a metre from them, are masonry walls extending forward from the curved walls and decreasing rapidly in height. These probably marked the limits of the property attached to the tomb. Excavations beyond the

threshold and the wall on each side of it revealed exedrae forming the east and west ends of the building; their outside curves were not concentric with the inside ones,



Ill. 190. Remains of Roman Tomb. View from the North.

but extended in a larger arc to the outer ends of the parotids. The south wall of the building had been much damaged; but we uncovered foundations of a third exedra



Ill. 191. Details from Roman Tomb.

and of thick triangular exterior buttresses at the points where the exedrae meet. Thus we had a small building in form of a triconchos with a straight fourth side against which were set the two parotids and the steps. In the interior were foundation walls



forming a square inside the triconchos, and within the exedrae curved foundation walls not concentric with the exedrae. All these foundations extended about 3 m. below the level of the threshold.

The many architectural remains aid greatly in working out a restoration of the building. These consist principally of fragments of an order, the uppermost members of which, having fallen first and been buried, are the best preserved. Other details, which are in small fragments, include bits of the bases, shafts and capitals of columns of the Corinthian order about 35 cm. in diameter, complete blocks of straight and raking cornice, and a large angle antefix. The under side of a block forming the apex of the gable is curved, showing that it was set over an arched middle intercolumniation (Ill. 192); its upper surface is brought up to a flat plane with a dowel-hole to which an akroterion was adjusted. These fragments of course belonged to a gabled porch in front of the tomb. After careful measurement it was found that the columns, formerly standing at the four outer angles of the pedestals, carried architraves over the side spaces and an arch over the middle intercolumniation (Ill. 189, B) as in the tomb of MAMASTIS at Termessos.<sup>1</sup> The sarcophagus of CLAUDIA should be replaced upon the pedestal near which it was found, and a similar sarcophagus, perhaps that of her husband, should be restored to the opposite pedestal.

The restoration of the main building is far more problematical. The interior curves of the exedrae are slightly less than semicircles; but the angles of the square of walls inside them offer footings for four columns, the capitals of which would provide imposts for the archivolts of three quadri-spherical half domes. Such columns I have introduced in my restoration, and upon them have erected a continuous entablature and three half domes. The interior as we found it was covered by a heap of concrete, much of which had been used in vault construction, and the triangular buttresses at the angles of the exterior seemed to provide support for central vaulting. I have not restored a dome on pendentives, feeling that the period of the building is rather too early for such a construction, but have resorted to a four-sided cloister vault, with four windows set at the crowns of the arches, after the manner of the Praetorium at Mismiyeh<sup>2</sup> which is of about the same date as this tomb. I have carried a purely hypothetical entablature



Ill. 192.

<sup>1</sup> G. NIEMANN and E. PETERSEN, *Städte Pamphylens und Pisidiens*, Wien, 1892, Band II, p. 114, Fig. 83.

<sup>2</sup> M. DE VOGÜÉ, *La Syrie Centrale* . . . , Paris, 1865—1877. Pl. 7. — G. REX, *Voyage dans le Hauran*, Pl. III.

around the whole building, and have placed a tile roof on a pyramid of timbers above the vault, and tiles directly upon the half domes; these latter would be carried out on a warped surface over the discrepancy between the outer and inner curves of the exedrae at the point where the roof of the porch extends back toward the half domes.

The architectural details, some of which are shown here in a photograph (Ill. 191) others in drawings (Ill. 192), are rather crude in both design and execution, but are closely allied to corresponding details in Syrian buildings of the end of the second century of our era like the Tychaion at is-Sanamên.<sup>1</sup> It is important to observe that the sima of the cornice is, except in scale, almost precisely the same as that in the entablature of the sarcophagus, proving conclusively that the building and the sarcophagus are contemporaneous. The rest of the over-elaborate cornice is not drawn or executed with firmness or precision. The partly preserved akroterion not being symmetrical was apparently not fitted on to the apex of the gable, but was an angle antefix from one of its lower ends. The photograph and drawing (Ills. 191, 192) show its composition; unfortunately not enough of it is left to form the basis of a reasonable restoration.

#### B. PAINTED TOMB.

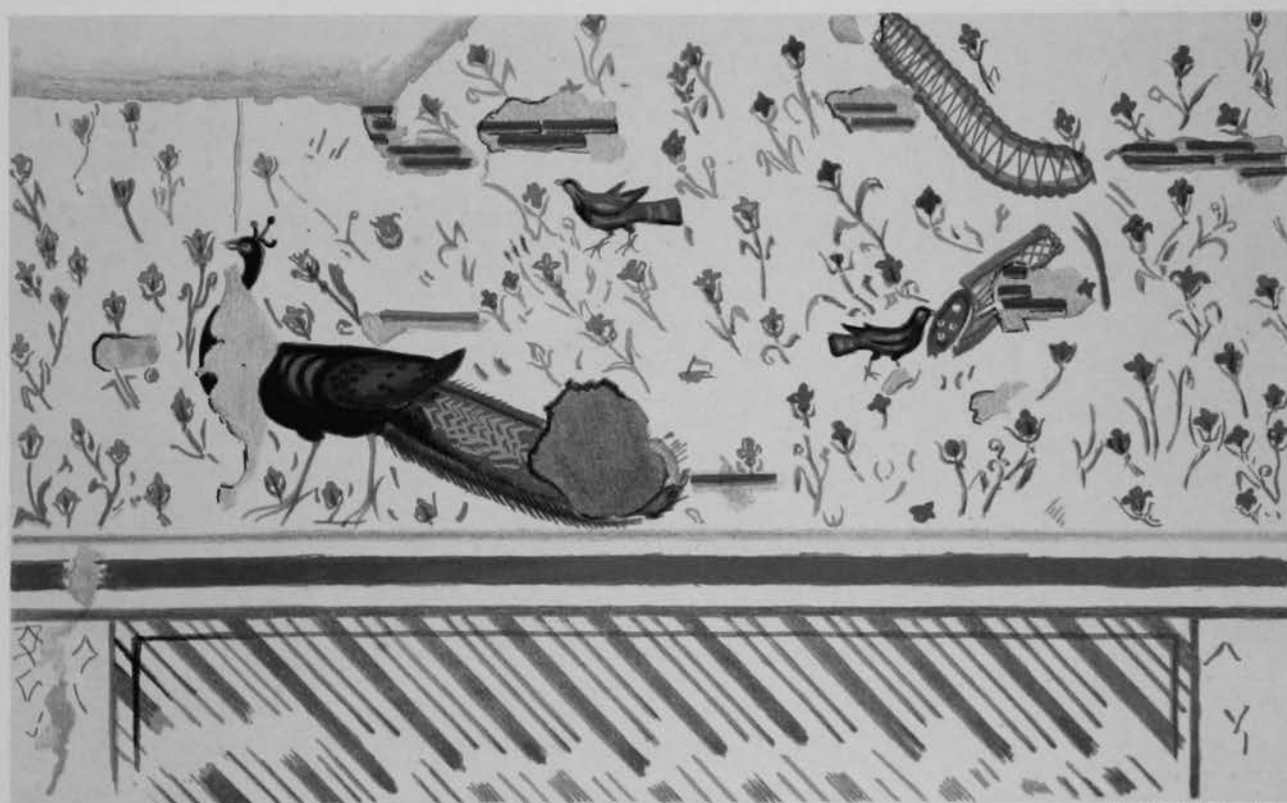
Only one of the early Christian tombs seen by us, of the type described above as a brick chamber with tunnel vault, has plastered walls and painted decoration. Several tombs of this form were unearthed in the excavations near the temple, one quite intact but undecorated, the others all in a completely ruined state. This painted chamber was discovered by natives beside the main highway, just east of the tomb of CLAUDIA ANTONIA SABINA and on the opposite side of the road (cf. map, Ill. 18). It had been rifled and partly filled up with stones; but the stone slab covering the entrance, at the eastern end of its vault, was in place and the wall paintings were intact.

Shortly after the discovery was reported to us, the tomb was maliciously attacked at night and the crown of its vault broken to pieces. The greater part of the paintings, however, remained intact, and a careful copy of them in colours by Mr. FREDERICK M. GODWIN, is reproduced herewith (Pls. IV and V). The tomb was too small to permit the taking of satisfactory photographs. It will be noticed that corbel steps were inserted in the east wall below the entrance. A description and discussion of the wall-paintings by Professor CHARLES RUFUS MOREY will be found in Appendix II, pp. 181 to 183.

<sup>1</sup> *Syria*. Publications of the Princeton University Archaeological Expedition to Syria, Div. II, Sect. A, pp. 315—320.



WEST END.



SOUTH SIDE.

F. M. Godwin del.

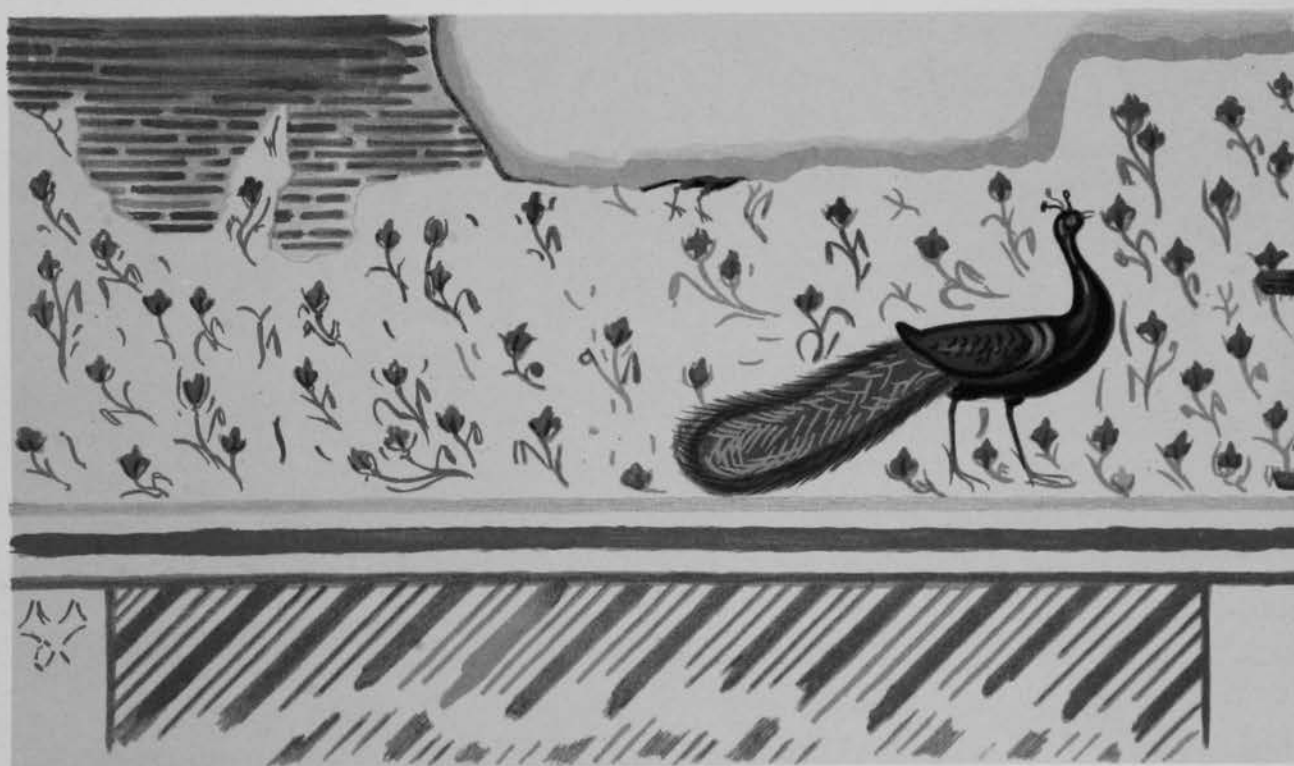
CHRISTIAN TOMB IN THE PLAIN.







EAST END.



NORTH SIDE.

F. M. Godwin del.

CHRISTIAN TOMB IN THE PLAIN.





## APPENDIX I.

### REPORT ON THE GEOLOGY OF SARDIS.

The area covered by this report extends from the line of the Smyrna-Cassaba Railway to the summit of the foothills of Mt. Tmolos, a distance of 6,000 metres in a south-southwesterly direction and includes the Akropolis and Nekropolis Hills. From Mr. L. T. EMORY's topographic map of this area it will readily be seen that for approximately 1,000 metres from the railway, that is up to the southern edge of the Hermos valley, the relief is very slight. The soil is rich loam, producing excellent crops of barley and wheat and supporting a considerable population. Beyond this begin the slopes of the two spurs, known as the Akropolis and Nekropolis Hills. At first smooth, these slopes rapidly become steep and finally precipitous, the spurs culminating in faceted peaks 420 and 465 metres high respectively. The southern slopes connecting the spurs with the foothills of Mt. Tmolos are more gradual, but deeply furrowed by ravines emptying into the Paktolos, which separates the two spurs, and cutting through the southern slopes of the Nekropolis Hill severs it also from the foothills. These ravines are roughly perpendicular to the course of the Paktolos, occasionally branching, beginning very abruptly and with very steep sides. They are fed entirely by rainwater, there being no springs near by; consequently they are dry most of the year. This area extends about 4,000 metres southward from the edge of the Hermos valley. It is but little cultivated, though the more gradual slopes support fields of barley and others afford pasture for goats and a few cattle. The steepest slopes are devoid of soil and have no vegetation, except straggling pines and clumps of hardy scrub which take advantage of every possible foothold. In the bottoms of the ravines, filled with coarse gravel where water remains until very late, there are also plane trees and clumps of oleander. The population of this and the next area is very small, living in mean hamlets.

The next area extends a distance of 1,000 metres to the summit of the foothills. The slope is smooth and gradual for approximately 500 metres, but then changes rapidly from a grade of  $35^{\circ}$  to one of  $70^{\circ}$ , forming a steep ridge 800 metres in altitude. This ridge is bisected by a deep rocky water-course, fed by springs in the foothills and running in a very irregular bed north-north-west to empty into the Paktolos. The lower slopes are partly cultivated, partly used for pasture. The upper

slopes are covered with a dense growth of stunted oak, pine, and coarse scrub, with a few scattered clearings containing irrigated fields with very thin, poor soil. At the east end of the ridge is the precipitous ravine of the Dabbagh Tchai which flows along the east side of the Akropolis to the Hermos. In this ravine, as in the smaller water-course to the west, there are a large number of plane trees.

In this brief summary of the physiographic features it has been convenient to proceed from north to south. In considering the lithology, however, it will be more convenient to begin with the oldest rocks which are on the south side.

The ridge is a part of a large anticline striking north-86°-west and dipping near the top 58° north, and near the bottom of the slope 42° north. On this anticline two formations are exposed: (1) a hard, closely foliated muscovite schist containing many veins of quartz, frequently used for doors to tombs, lids for sarcophagi, and in the shape of boulders for building-stones in the most ancient buildings; (2) a hard metamorphosed limestone, pale blue to white in colour, varying much in texture — the lower layers being very coarsely crystalline and the upper fairly fine-grained — used as building stone in the temple and other buildings as well as for sculptures, and on the whole a marble of very fine quality.

The marble has been eroded from the top of the ridge and from a large part of the northern slopes. By reason of the fact that the strike of the beds diverges from the axis of the ridge, a greater thickness of these beds is exposed toward the west. The bisecting ravine known as the "Marble Wadi" cuts through the beds for some distance, forming solid cliffs 60 to 75 m. high, from which the marble used in the city was quarried. At the northern edge of the marble a non-conformity marks the beginning of a new geological series. This series consists of unfolded beds of alluvium exhibiting three distinct phases. The first, or lowest, phase, is composed of massive homogeneous beds of fine red clay. These thin out very much at the edge, so that no adequate measurements can be obtained of their thickness which is approximately 30 m. This material bears every resemblance to deep-water marine deposits, being evenly distributed, perfectly sorted so that it contains no coarse material, and stained an even dark-red colour by oxide of iron.

The second phase consists of grey or pale green beds, in all about 200 metres thick, of fine sandy clay interbedded with gravel containing pebbles of quartz and occasionally of schist rarely more than 2 cm. in diameter. The fine beds vary in thickness from 5 to 50 cm. and the coarse beds from 10 cm. to 5 metres. Their texture is frequently quite loose, though more often the material is solidified by lime cement. The beds dip slightly toward the north because of having been deposited against the ridge. They are evidently shoal-water deposits; the succession of coarse and fine layers indicates a seasonal variation in the streams bringing down the material deposited and an absence of currents to sort it out. That these are subaqueous deposits is shown by the continuance of the beds; their light colour is probably due to a growth of reeds which leached out the iron oxides.

The third phase, by far the most conspicuous because it has most resisted erosion, is exposed in the bare cliffs of the Akropolis and Nekropolis Hills. It is composed of fine grains of kaolin, muscovite, biotite and probably other ferro-magnesian.

minerals, and a little quartz, with quantities of pebbles; flat pebbles of schist usually about 10 cm. in diameter but frequently much larger or smaller, irregular pebbles of gneiss often slightly angular, but always water-worn, quartz and pebbles of all sizes up to 20 cm., but usually not over 10 cm., in diameter. In the Akropolis and on the east side of the Nekropolis Hills the beds are mostly uniform and massive, but about every 3 or 4 metres occurs a thin layer 30 cm. thick of well sorted fine material. The colour is dark brown, excepting that in the case of the fine material a dark red colour is caused by weathering. The bottom beds of this phase, which are best seen in some deep ravines in the south and west sides of the Nekropolis Hill, contain less coarse material and are better sorted. They average 50 cm. in thickness, and are composed of fine sandy clay, coarse sand, or sand and small pebbles. In colour they are dark red. These are the only cemented beds in this phase, the medium being lime, washed with oxide of iron by rain water, which has filtered through the upper layers leaving them without distinct red colour or lime cement. From these beds the modern water-courses derive their weathered boulders of red or purple-red sandstone and conglomerate, which have been much used in the Lydian buildings, while in the temple are squared blocks from the same formation hard enough to make a good building stone. The soft upper layers of this phase contain most of the tombs, but the finer tombs were cut in the harder beds of the second phase.

This is the last of the subaqueous deposits. Where the alluvial material has broken down under erosion, assisted by the seismic shocks frequent in this region, there have been considerable subaerial deposits. These resemble closely the third alluvial phase — that being the formation most eroded — and are mainly found on the west slope of the Akropolis and on the edge of and in the Hermos valley.

The series of subaqueous alluvia represents three great cycles, coming soon after the folding which formed the anticline of the foot-hills and which took place during the disturbances affecting this region during the Mesozoic. In the early Tertiary the area occupied by the Hermos valley was probably a synclinal or synclinal valley. During a period of depression it became at first a submarine valley in which were made the alluvial deposits of the first phase. Their fine material was probably carried some distance and found its way thoroughly sorted into this submarine trough, while coarser materials were deposited on the higher levels nearer the places where erosion was going on. This was the first cycle.

The second cycle began with an elevation which raised the level of the valley so that the deposits then exposed were brought down by erosion in large quantities and spread rapidly over the valley bottom which then formed a large inlet. The level of the land, however, was sinking rapidly and deposit after deposit was made always in shoal water. After some time, the loose material left by the elevation had practically all been washed away and the agents of deposition could no longer keep up with the steady subsidence of the land. The depth of water over the deposits increased, the reeds were drowned, and the materials no longer having their iron oxides leached out retained a red-brown color. This is the beginning of the third cycle.

The third cycle was very long; for the total thickness of the deposits must have been very great, and the comparative thinness of the beds shows that deposition must



have been slower and more regular than in the second cycle. All through this period subsidence was going on, until at last the change from this process to one of elevation marked the end of the constructional, and the beginning of the destructional cycles.

This elevation, like the subsidences, must have been very gradual; for the Hermos valley is broad, and to clear it all out the river, which can never have been large, must have had a great deal of time. Slowly the soft deposits reached the surface, and as they were raised above it the streams from the ridges cut their way through to the centre of the valley where the river was formed, meandering from side to side and carrying the material out between the mountains of Hasanlar Dagħ and Jamanlar Dagħ where it was dropped into the sea. As the river sank deeper, keeping up with the gradual elevation, it came in contact with some low anticlinal ridges of the synclorium forming the original valley. One of these caused it to leave on the north edge of the valley opposite Sardis a large ox-bow which is now the shallow, reedy Mermeré Giöl. Gradually the deposit at the mouth increased until it became the large delta of flat silt and gravel on the north side of the Gulf of Smyrna. But the elevation was too rapid for the strength of the river, so that the valley is to-day edged with deposits cut through slowly by the tributary streams and cut back by the river but not destroyed. Thus have been formed the Akropolis and Nekropolis Hills and the deposits between them and the foothills, which in every rainy season are being gradually reduced and carried by the Paktolos and the Dabbagh Tchai down to the Hermos. This river still continues its destructional work, bearing down silt and gravel to add to the deposit at its mouth. The elevation is probably slowly but surely going on, for this region is far from being in a settled state, as evidenced by the frequency of seismic disturbances which are an important agent of destruction.

It is with one of these disturbances that we have now to deal. The ancient city was built on both banks of the Paktolos, and must have extended up the western slope of the Akropolis. From POLYBIUS we know that the slope facing Mt. Tmolos, that is toward the north-northwest, was precipitous in the third century B.C., and this leads us to believe that the other slopes were not so steep. From this and from the topography it is evident that the hill was at that time roughly semicircular, with the straight face toward Mt. Tmolos quite precipitous, and the city built on the west-northwest side. This configuration probably remained until the year 17 A.D. when the earthquake in question occurred. The west end of the hill, rendered unstable by the precipitous face on one side and the drainage toward the Hermos, was shaken from its foundations by the earthquake, and broke away toward the west leaving the broad precipitous west face of the Akropolis about as it is to-day.

The débris fell against a spur which seems to have culminated in an elongated cone like those now surrounding both hills. This was not overthrown — though it may have been moved some distance down the slope — and now projects from the surface just behind the excavation-house. Soon after the catastrophe the part of the city not overwhelmed was covered with fine silt, washed from the loose débris and fairly evenly distributed over the slope toward the Paktolos, forming a deposit resembling an alluvial fan. Shortly after this, however, two well defined drainage channels were formed, separated by the above mentioned spur and flowing nearly parallel into

the Paktolos. The streams in these channels cut away the sides of the fan first deposited and left only a narrow ridge of the fine material protected by the spur. Heavy rains then brought down further deposits of fine material and built up thin beds over the ridge, so that the whole resembles a sharp anticlinal fold.

As soon as the irregular mass of *débris* began to yield to erosion, the northern stream encroached upon the southern and almost completely captured it, so that during part of the year it became a considerable torrent, while the southern stream ran only during periods of very heavy rainfall and carried down only very light material. The northern stream furthermore became an important destructional agent, bearing *débris* into the Paktolos, and cutting away also the horizontal beds of gravel and sand which at the time of the earthquake had constituted the uppermost levels. This cutting extended to the northern foundations of the temple itself, which were protected by the concrete walls put in after the earthquake. The ground before the temple, being directly in line with the ridge above mentioned, was sheltered by it, and at the same time the temple helped to prevent the stream from moving southward and so carrying away the lower end of the ridge.

The northern stream having thoroughly scoured its bed began to fill this up with *débris*, laying down first coarse gravel and filling up slowly to a level, reached toward the beginning of the third century A.D., about 1.20 m. above the temple platform. The material was first piled up against the obstructing ridge on the southern side of the stream, which in consequence moved its course gradually northward. Meanwhile the more southerly torrent had covered the space in front of the temple and part of its floor with fine material. The temple was now in disuse and the city had moved to the northern slopes of the Akropolis. In the fourth century were built, to the north of the temple, the brick church and a few structures by means of which this level is dated. The church was built upon the fine deposits of the southern stream under the shelter of the ridge, and the other buildings on the coarse deposits of the northern stream.

The pause in deposition which then took place was caused by the northern stream having filled up its bed so much that, except at times of very heavy rainfall, there was no longer sufficient drop from the graded mound formed by the earthquake to enable the small volume of water to transport material. For the same reason more water ran down the southern channel, and after the third century we find it making deposits similar in kind and quantity to those of the northern stream.

In the course of years more and more material was brought down, and as the city was then far removed from this neighbourhood, no attempt was made to preserve the temple or the buildings around it. The church was gradually covered and the columns in front were buried to a depth of about ten metres. Approximately the present level was reached in the tenth century A.D. By that time the highest point on the ridge to which either stream could rise was covered, and the streams, unable to converge because of it, diverged rapidly. The more northerly now flows into an older ravine north of the temple and the more southerly, having captured most of the other's water supply, has cut a very considerable channel, as may be seen by the map.

Immediately in front of the temple, beneath the end of the ridge formed after

the earthquake, are the horizontal beds which were the upper levels at the time of that disturbance and which were partly carried away by the northern stream. Those uncovered are three in number. Uppermost is an irregular gravel bed of subaerial origin containing no pottery or other evidence of having accumulated during human occupation. Below is a bed of sand 30 cm. thick, and below that more gravel well water-washed, the flat stones being dipped southward and not, as in the case of the layers above this level, eastward. It was, therefore, laid down by water flowing northward, which could only be that of the Paktolos. This stream, which had then moved farther west, also accumulated the bed of sand as a beach deposit. The sub-aerial gravel was subsequently made up out of material eroded from the Akropolis and formed the level upon which was built the ancient city.

WILLIAM WARFIELD

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## APPENDIX II.

### THE PAINTED CHAMBER-TOMB.

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The decoration of the chamber (Pls. IV and V) is in the style termed by ROSTOVTZEFF<sup>1</sup> "mixed incrustation and floral"; the lower wainscoting is a degenerate reminiscence of that imitation of marble incrustation the best examples of which have been found in the "catacombs" of the second and third centuries at Kertch in South Russia<sup>2</sup>. In our frescoes, the "incrustation" is reduced to oblong panels marked with blue diagonal bands alternating with pairs of narrow blue strips; the diagonals all run in the same direction on the long sides of the chamber and are symmetrically arranged in a chevron pattern on the short sides, pointing upward at one end and downward at the other. This wainscoting is separated from the upper part of the wall by a border of three bands symmetrically spaced, a narrow blue band on the upper edge of the wainscoting, a broader central band of red, and the uppermost strip brown, of the same width as the blue.

Above this border the wall is decorated on all four sides in ROSTOVTZEFF's "floral" style, the main motif being a profusion of green plants which with few exceptions blossom into a single red flower, presumably a poppy. Monotony is relieved on one of the long sides by a peacock in blue and reddish brown; on the other side a second peacock appears in relative symmetry to the first, but here the flowered field is further diversified by two blue birds with red bills and feet, one of which pecks at the fruit issuing from an overturned basket. Above this is a garland in red, so stylized and degenerate in drawing that, did we not possess its prototype in the South Russian frescoes, it might be mistaken for a garden worm.

In one of the lunettes of the short sides appears a basket in reddish-brown, containing a heap of red fruit and flanked by two birds, drawn and coloured like the other pair, but here perched upon sprigs and pecking at the leaves. In the centre of the other lunette is a green wreath bound at the bottom with a red knot from which emerge two red bands representing *lemnisci*, and inclosing the Constantinian monogram, flanked by A and Ω and displaying the open P characteristic of Eastern examples of the *salutare signum*<sup>3</sup>.

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<sup>1</sup> *Jour. Hell. Studies*, XXXIX, 1919, p. 144 ff.

<sup>2</sup> E. H. MINNS, *Scythians and Greeks*, p. 314 ff., figs. 225—231. ROSTOVTZEFF, *op. cit.* p. 152.

<sup>3</sup> DE ROSSI, *Bull. arch. crist.* 1880, p. 159. LAURENT, *Bull. Corr. Hell.* XIII, 1889, p. 217.

This late Hellenistic wall decoration<sup>1</sup> is derived according to ROSTOVITZEFF from textile design, and is primarily an Eastern style contrasting with the architectural mode prevailing in the West, but even there gradually supplanting it in the late Roman period. Two subdivisions of it are noted by him, the "carpet" style wherein the floral ornament is stylized and symmetrically disposed according to the needs of textile design, and the "naturalistic" flower-style which strews the flowers about the surface in more or less disorder, mingling them with plants, birds, beasts and sometimes with figured scenes. The "carpet" style seems to be Egyptian in origin; the "naturalistic" style has hitherto been chiefly represented by the paintings in the "catacombs" of Kertch, where it is usually combined with wainscoting imitating marble incrustation but differing in character from the first Pompeian style.

This "mixed incrustation and floral" style was regularly used in the tombs of Kertch in the second and third centuries of our era. It is represented at its height in the second-century "catacomb" excavated by STASOV in 1872<sup>2</sup>. Closer to the decoration of the Sardis tomb is the style of the frescoes adorning a "catacomb" of the third century discovered in 1873<sup>3</sup>, wherein the motifs are remarkably similar to those employed by the Sardis decorator. Here we have four dancing female figures, and a different kind of flower which MINNS describes as a "heart-shaped rose"; this and the worm-like garland above one of the peacocks are characteristic of "all the late Kertch catacombs and can be paralleled from Sicily and from textiles made in Egypt under Greek influence"<sup>4</sup>. The ornamental repertory of the Kertch painter is wider, and his treatment freer than is the case at Sardis, but the peacocks appear in both places as a major motif, the same sprinkling of plants about the field is found in both, and in both is displayed the peculiar worm-like object supposed by MINNS to be a bag filled with flowers for a garland.

The "garland" of our tomb has reached an extreme stage of convention, and the relative freedom of movement accorded to the peacocks in the third-century example at Kertch is denied to our peacocks, who do not turn their heads or twist their necks, but confront each other with heraldic rigidity. We can observe also that the floral pattern is in the Sardis fresco more regular and less interrupted by other motifs, and that the perspectives in the dado of the Kertch catacomb are here replaced by flat bands.

All this indicates a growth of formalism and a loss of naturalism incident to the final phase of late Roman decoration, — a phase aptly characterized by RIEGL in his *Spätrömische Kunstindustrie* as "crystalline", — wherein each unit is isolated from its neighbours and all are so placed as to produce a rhythmic pattern of light and dark. The contrast between the freer treatment of the third century example at Kertch, and the more formal handling of the same design at Sardis, leads us therefore to place the date of our frescoes in the fourth century A.D.

This date is confirmed by three details. One is the square  $\omega$ ; a well known

<sup>1</sup> ROSTOVITZEFF, *op. cit.* p. 149 ff.

<sup>2</sup> MINNS, *op. cit.* p. 315, fig. 225.

<sup>3</sup> KONDAKOF, TOLSTOI and REINACH, *Antiquités de la Russie méridionale*, I, figs. 32, 33.

<sup>4</sup> MINNS, *op. cit.* p. 316.

form found most frequently in Greek inscriptions of the third and fourth centuries<sup>1</sup>; the second is the motif of the bird pecking the fruit spilled from an overturned basket, — a favorite device used by fourth century sculptors to fill the triangular spandrels above the arcades of columnar sarcophagi. Final confirmation is found in the appearance in one of the lunettes of the Constantinian monogram, no certified example of which antedates the year 300<sup>2</sup>.

We thus have an example of the "floral" style of wall decoration securely dated in the fourth century A.D., and since the series of frescoed tombs in Kertch closes with the third, the Sardis paintings assume importance as representing a still more advanced stage in the steady disintegration of Hellenistic naturalism traced by ROSTOVTZEFF.

C. R. MOREY

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<sup>1</sup> LARFELD, *Handbuch der griech. Epigraphik*, II, p. 505.

<sup>2</sup> In the dated Christian epitaphs of Rome, the monogram flanked by A and Ω, as here, is found first (in a restored example) on an epitaph of the year 355; the first complete example is furnished by an epitaph of 360; DE ROSSI, *Inscr. christ. Urbis Romae*, I, nos. 127, 143.





LISTS OF MAPS, PLATES AND ILLUSTRATIONS.





## I. — LIST OF MAPS.

I. Map of Sardis and Environs . . . . .	at end of Vol. I Part 1.
II. Temple Area before Excavations . . . . .	" " " " " "
III. Temple Area in June 1914 . . . . .	" " " " " "

## II. — LIST OF PLATES.

[illegible]

### III. — LIST OF ILLUSTRATIONS.

III.	1.	Peyssonnel's Drawings of the Akropolis of Sardis . . . . .	Page	6
"	2.	Colossal Head found by Dennis . . . . .	"	8
"	3.	Dromos and Chamber of a Tumulus at Bin Tepé . . . . .	"	11
"	4.	Akropolis of Sardis. View from North . . . . .	"	15
"	5.	The Twin Columns of Sardis. View from the North . . . . .	"	17
"	6.	The Akropolis of Sardis, the ruined Temple and the Bed of the Paktolos. View from the West . . . . .	"	18
"	6a.	The Peak of the Akropolis. Photograph by D. M. Robinson . . . . .	"	19
"	7.	The Nekropolis Hill with the Twin Columns in the Foreground . . . . .	"	18
"	8.	The Foothills of Mount Tmolos and the Valley of the Dabbagh Tchai. View From the Akropolis, looking Southeast . . . . .	"	20
"	9.	The Great Waterfall and the Marble Cliffs . . . . .	"	21
"	10.	The Dabbagh Tchai below Hot Baths . . . . .	"	22
"	11.	Valley of the Dabbagh Tchai, View looking Northwest. Toward the Akropolis of Sardis . . . . .	"	22
"	12.	The Valley of the Paktolos. View from above Sardis looking North . . . . .	"	23
"	14.	Part of the Akropolis Wall, showing Second-hand Materials . . . . .	"	24
"	15.	Fragment of Wall at Northwest end of Akropolis . . . . .	"	25
"	16.	The Columns with Snow-capped Tmolos in the Distance. View from the Northwest . . . . .	"	26
"	17.	Setch-Plan of Columns at Sardis . . . . .	"	27
"	18.	Map of the Ruins of Sardis . . . . .	"	30
"	19.	Peyssonnel's Drawings of Roman Buildings at Sardis . . . . .	"	32

Ill. 20. Inscription lying in a Field Northwest of the Akropolis . . . . .	Page 34
" 21. View in the Nekropolis . . . . .	" 35
" 22. Cliffs honeycombed with Tombs along the Paktolos above Sardis . . . . .	" 35
" 23. East Bank of the Paktolos showing Cross-section of Débris . . . . .	" 37
" 24. Second Day of the Excavations . . . . .	" 39
" 25. Row of Marble Bases, the first Objects to come to light . . . . .	" 40
" 26. Marble Bases at South End of Steps . . . . .	" 41
" 27. Bases at North End of Steps . . . . .	" 41
" 28. Stelae at North End of Lydian Building . . . . .	" 42
" 29. Lydian Building. View from the Northwest . . . . .	" 43
" 30. Cylindrical Base with Greek Inscriptions, soon after it was found . . . . .	" 43
" 31. Byzantine Waterpipes of Terra-cotta . . . . .	" 44
" 32. Large Terra-cotta Pipe crossing the Lydian Building . . . . .	" 44
" 33. Water-conduit and Settling-pot . . . . .	" 45
" 34. First Appearance of Marble Foundations. Pier A . . . . .	" 45
" 35. Plan of Lydian Building, and Foundations at West End of Temple . . . . .	" 46
" 36. Second Marble Pier, B in Plan . . . . .	" 47
" 37. Plinth Block on Pier E . . . . .	" 47
" 38. Breach between Piers B and D . . . . .	" 48
" 39. The First Waggon in Operation . . . . .	" 48
" 40. Plinth at F. and Fluted Drum in Process of Excavation . . . . .	" 49
" 41. Steps adjoining Piers F. and G. on the North . . . . .	" 50
" 42. Moving Column-drums to solid Foundations . . . . .	" 50
" 43. Foundations and Column-drums at the West End of the Temple. View from the North . . . . .	" 51
" 44. Excavation in front of West Wall of the Cella . . . . .	" 51
" 45. North Wall of Treasury Chamber . . . . .	" 53
" 46a. The first Capital as it came to light . . . . .	" 54
" 46b. The first Capital set upright . . . . .	" 54
" 47. Relief Statue found in West Porch of the Temple . . . . .	" 55
" 48. Statue found at West End of the Temple . . . . .	" 55
" 49. Lydian Inscription found in Nekropolis . . . . .	" 57
" 50. The Excavation House in Process of Erection. View from East . . . . .	" 57
" 51. The Excavation House on June 16th, 1910 . . . . .	" 58
" 52. The Excavation House on June 22nd. View from N. E. . . . .	" 58
" 53. The Excavation House on July 9th. View from S. W. . . . .	" 59
" 54. Excavation House. View from the Knoll to the East . . . . .	" 59
" 55. The Excavations in the Snow of 1911 . . . . .	" 61
" 56. Interior of Treasury Chamber, looking North . . . . .	" 63
" 57. Colossal Head found in the Cella . . . . .	" 64
" 58. Fragment of Ornament found in the Cella . . . . .	" 64
" 59. Interior of the Cella, from the Northeast; "Basis" at extreme Right . . . . .	" 65
" 60. Stele with Lydian Inscription . . . . .	" 66
" 61. Second Colossal Head found in the Cella . . . . .	" 67
" 62. Interior of the Cella. View from the Northwest . . . . .	" 69
" 63. South Wall of the Cella, near the East End . . . . .	" 70
" 64. Excavations in the East Porch. View from the North . . . . .	" 71
" 65. Great Architrave Block found near Southeast Anta . . . . .	" 72
" 66. Fragments at East Portal . . . . .	" 72
" 67. Column-drum set on East Wall . . . . .	" 73
" 68. Base of one of the Standing Columns, appearing for the First Time . . . . .	" 74
" 69. A Fluted Column coming to Light . . . . .	" 75
" 70. View of Excavations from the South, at the Close of the Season of 1911 . . . . .	" 75

Ill.	71. Sandstone Basis . . . . .	Page	75
"	72. Moulded and Coloured Terra-cotta Sima, from Excavations on Nekropolis Hill . . . . .	"	76
"	73. Coloured Terra-cotta Tile from Excavations on Nekropolis Hill . . . . .	"	77
"	74. Terra-cotta Fragments from Various Parts of Sardis . . . . .	"	77
"	75a. Lydian Pottery from a Tomb in the First Nekropolis . . . . .	"	80
"	75b. Lydian Pottery from a Tomb in the First Nekropolis . . . . .	"	80
"	76. Hellenistic Figure in Terra-cotta . . . . .	"	81
"	77. Objects in Bronze, Pottery and Terra-cotta, from Hellenistic Tombs in First Nekropolis . . . . .	"	82
"	78. Coloured Terra-cotta Mask . . . . .	"	82
"	79. Terra-cotta Mask . . . . .	"	82
"	80. Sarchophagus in Terra-cotta, from First Nakropolis . . . . .	"	83
"	81. Sarchophagus in Limestone . . . . .	"	83
"	82. Bronze Mirror and Silver Libation Bowl . . . . .	"	84
"	83. Some of the Jewelry and other Gold Objects found during 1911 . . . . .	"	85
"	84. Cast of Hellenistic Intaglio . . . . .	"	85
"	85. Gold Necklace, Rings and Seals from Lydian Tombs . . . . .	"	86
"	86a. Casts from Lydian Seals . . . . .	"	87
"	86b. Casts from Lydian Seals . . . . .	"	87
"	87. The Excavations at the Beginning of the Season of 1912, View from the West . . . . .	"	89
"	88. Southeast Angle of Excavations, February 1912 . . . . .	"	90
"	89. The Eastern Trench, with the Half Dome appearing . . . . .	"	90
"	90. The "Island" of the Column Drums . . . . .	"	91
"	91. The Half Dome, from inside . . . . .	"	91
"	92. The Church and East End of Excavations . . . . .	"	92
"	93. East Porch of the Temple in March 1912; View from the Southwest . . . . .	"	93
"	94. Widening the Excavations on the North Side . . . . .	"	94
"	95. Lydian Inscription found on South Side . . . . .	"	94
"	96. Fragment of Ancient Sculpture, found in Late Grave . . . . .	"	95
"	97. Deepening the Excavations on the North Side . . . . .	"	95
"	98. Marble Heads found North of the Temple . . . . .	"	96
"	99. Lions Head from the Cornice of the Temple . . . . .	"	97
"	100. West End of the Temple and Lydian Building. View from the North. . . . .	"	97
"	101. Christian Graves directly South of the Church . . . . .	"	98
"	102. Trestle for Lengthening the Dump . . . . .	"	98
"	103. East End of the Temple on June 6th 1912 . . . . .	"	99
"	104. East End of the Temple on June 10th 1912 . . . . .	"	100
"	105. Setting up Fallen Details . . . . .	"	100
"	106. Fragment of an Anta-cap . . . . .	"	101
"	107. Fragments of the East Portal . . . . .	"	101
"	108. East Porch of the Temple. View from the Southwest . . . . .	"	102
"	109. East Porch of the Temple. View from the Northeast . . . . .	"	103
"	110. Base of Column No. 6 . . . . .	"	105
"	111. Base of Column No. 10 . . . . .	"	105
"	112. Base of Column No. 16 . . . . .	"	105
"	113. Columns of the East Porch, looking Northeast from the Great Portal . . . . .	"	106
"	114. Columns Nos. 11 and 12 . . . . .	"	107
"	115. Capitals of the two Standing Columns. View from the East . . . . .	"	108
"	116. East Portal of Temple . . . . .	"	109
"	117. Fragment of the Jamb of the Portal . . . . .	"	110
"	118. West Wall of the Church . . . . .	"	112
"	119. Church, Plan and Sections . . . . .	"	113
"	120. Apse of Church with Altar . . . . .	"	114



Ill. 121. Windows of outer Apse . . . . .	Page 115
" 122. Steps and Stele of a Lydian Tomb . . . . .	" 116
" 123. The Lydian-Aramic Bilingual Inscription . . . . .	" 117
" 124. Objects from a late Lydian Tomb . . . . .	" 118
" 125. Pottery from one of the Earlier Lydian Tombs . . . . .	" 119
" 126. Lydian Pottery . . . . .	" 119
" 127. Moulded Bowls of the Hellenistic Period . . . . .	" 120
" 128. Moulded Ware. Black and Red-figured Wares and Alabastra . . . . .	" 120
" 129. Gold Rings . . . . .	" 121
" 130. Cast of Seal, with Archaic Artemis . . . . .	" 121
" 131. Cast of Cylinder Seal . . . . .	" 122
" 132. View of Excavations from the South . . . . .	" 123
" 133. Northern Half of the East Porch. View From Southeast . . . . .	" 124
" 134. Concrete Structure North of Temple, from the West . . . . .	" 125
" 135. Concrete Structure North of Temple. View From West . . . . .	" 125
" 136. Marble Bases and Sculptures appearing on the North side . . . . .	" 126
" 137. Lions and Eagle set up on a Pedestal . . . . .	" 126
" 138. Bases and Sculptures, and the men who Excavated them . . . . .	" 127
" 139. Capital found at Northwest Angle of Excavations . . . . .	" 128
" 139a. Face of Capital shown in Ill. 139 . . . . .	" 128
" 140. Stele with Greek Inscription . . . . .	" 129
" 141. Steps North of the Lydian Building . . . . .	" 129
" 142. Deepening the Excavations North of the Temple . . . . .	" 130
" 143. East End of the Excavations from the North . . . . .	" 130
" 144. Moving Column Drums . . . . .	" 131
" 145. The East Portico of the Temple of Artemis . . . . .	" 131
" 146. Roman Constructions at the Southeast of the Excavations . . . . .	" 132
" 147. Base in Rectangular Exedra . . . . .	" 132
" 148. Plastered Wall on Upper Terrace . . . . .	" 133
" 149. Working on Terraces at the Northeast Angle of the Excavations . . . . .	" 133
" 150. Digging a Trench in front of East Porch . . . . .	" 134
" 151. Right End of the Sarcophagus . . . . .	" 136
" 152. Figures at Right End of Front . . . . .	" 137
" 153. Figure on Right Side of Left End . . . . .	" 138
" 154. Tomb Structure near which the Sarcophagus was found . . . . .	" 139
" 155. Rock-hewn Tomb above the West bank of the Paktolos . . . . .	" 140
" 156. Ivory Head from South Nekropolis . . . . .	" 141
" 157. Dromos of a Tomb in the South Nekropolis . . . . .	" 142
" 158. Gold Ornaments from Tomb at Sardis . . . . .	" 143
" 159. The American Excavations early in the Season of 1914; View from the West . . . . .	" 145
" 160. Concrete Structure. View from the North . . . . .	" 146
" 161. The High Bank at the Northeast Angle . . . . .	" 147
" 162. Excavation East of the Concrete Structure . . . . .	" 147
" 163. Walls emerging from the Bank . . . . .	" 148
" 164. Colossal Face . . . . .	" 148
" 165. Western Half of the Excavations. View looking Southwest . . . . .	" 149
" 166. Sandstone Foundations in Treasury . . . . .	" 149
" 167. New Trench Northeast of the Main Excavations . . . . .	" 150
" 168. Small Objects from the New Trench . . . . .	" 150
" 169. Long Street in the New Trench . . . . .	" 151
" 170. Pottery Fragments from New Trench . . . . .	" 151
" 171. View of the Akropolis of Sardis; the Excavations at the End of the Season of 1914, from the West . . . . .	" 152

Ill. 172. Sculptures from the New Trench . . . . .	Page 153
" 173. Sculptures from the New Trench . . . . .	" 153
" 174. Steps of Pyramid Tomb Northwest of Akropolis. View from the Northeast . . . . .	" 155
" 175. Typical Lydian Tomb . . . . .	" 158
" 176. Interior View of Double Chamber Tomb . . . . .	" 159
" 177. Lydian Sarcophagi in a Single-Chamber Tomb . . . . .	" 160
" 178. Lydian Tomb With Single Chamber . . . . .	" 161
" 179. Cap of Stele bearing bi-lingual Lydian-Aramaic . . . . .	" 161
" 180. Cap of Lydian Stele . . . . .	" 162
" 181. Lydian Tomb on Two Levels . . . . .	" 162
" 182. Tombs in South Nekropolis . . . . .	" 163
" 183. Tomb in Southwest Nekropolis . . . . .	" 163
" 184. Lydian Tomb in South Nekropolis . . . . .	" 164
" 185. Pyramid Tomb on West Slope of Akropolis . . . . .	" 165
" 186. Pyramid Tomb. View from Northwest . . . . .	" 168
" 187. Pyramid Tomb. View from Northeast . . . . .	" 169
" 188. Pyramid Tomb. View from West and above . . . . .	" 169
" 189. Tomb of Claudia Antonia Sabina . . . . .	" 171
" 190. Remains of Roman Tomb. View from the North . . . . .	" 172
" 191. Details from Roman Tomb . . . . .	" 172
" 192. Drawings of Details . . . . .	" 173





## INDICES.



## INDEX I: PERSONS.

ALEXANDER the Great	at Sardis	1, 12, 115.
	coins of, found	74.
ALYATTES, king of Lydia	tumulus of	5, 9, 11.
	historical mention of	8, 9.
ANTIGONOS Monophthalmos	probably mentioned in inscription	52, n. 2.
	coins of, found	74.
ANTIOCHOS I	coins of, found	76.
ARRIAN	on Sardis	2, 115.
ARTAXERXES	inscription dated under	117.
AUGUSTUS, emperor	letter from, to Sardians	114.
BACON, FRANCIS H.	describes Dennis' excavations	7, 10, 13.
	mentions the theatre	31.
BELL, HAROLD W.	member of staff	viii, 37, 55, 134.
BERRY, WILLIAM R.	member of staff	ix, 62.
BUCKLER, WILLIAM H.	member of staff	viii, xi, 38, 62, 78, 115, 117, 140.
BUTLER, HOWARD CROSBY	director of excavations	viii, xi, 37.
CAESAR, GAIUS IULIUS	adoptive son of Augustus	114.
CAVALCANTY, GEORGE D.	dragoman	37.
CHANDLER, RICHARD	visits Sardis about 1764	5, 25, 27, 28.
CHASE, GEORGE H.	studies pottery of Sardis	viii, 145, 151.
CHISHULL, EDMUND	visits Sardis in 1699	4, 5, 25.
CHOISY, AUGUSTE	at Sardis in 1876	9, 10.
COCKERELL, C. R.	at Sardis in 1812	5, 26, 28.
COMMISSIONER, IMPERIAL	AZIZ Bey,	x, 123.
	FAKRI Effendi	62.
	YAKUB Effendi	40.
CONSTANTINE the Great	coins of	44.
	coins earlier than, rare	74.
	monogram attributed to	183.
COOK, CHARLES F.	chief engineer, 1910	xi, 37, 62.
CROESUS, king of Lydia	mentioned	x, 2, 3, 8, 57, 115, 149.
	coin of, in "Basis"	76, 148.
CURTIS, C. DENSMORE	on jewelry of Sardis	viii, 143.
CYRIACUS	at Sardis about 1426	4.
CYRUS, king of Persia	mentioned	1, n. 1.
	tomb of	170.
DEMETRIOS Poliorketes	daughter of	43.
	coins of	76.
DENNIS, GEORGE	at Sardis in 1882	4, 7, 13.
	objects found by	8, 12, 64.
	traces of his work,	8, 27.
	at Bin Tepé	10, 155.
	finds floor of cistern	52, 64.



EMORY, LLOYD T.	makes survey	x, 123, 175.
EURIPIDES	mentions Sardis	21.
FAUSTINA the Elder	statue of	7, 64.
	2	
GELZER, HEINRICH	mentioned	3.
GODWIN, FREDERICK M.	member of staff	123, 139, 174.
GREGORIOS	foreman, 1910	38.
GYGES, king of Lydia	tomb attributed to	9.
HALIL EDHEM Bey	director of Imperial Ottoman Museum	x.
HAUSSOULLIER, BERNARD	on date of inscription	52, n. 2.
HERACLIDAE	at Sardis	3.
HERACLIUS, emperor	coins of	44, 69.
HERODOTUS	on Lydia and Sardis	2, 3, 29.
	on Bin Tepé tumuli	8, 9, 15, 34.
	on Samian aqueduct	26.
HOGARTH, DAVID G.	mentioned	2, 12, 13, 38.
	discoveries of, at Ephesos	65, 74.
HONORIUS, emperor	coins of	44.
IBRAHIM	Turkish gendarme	86.
IOLLAS	inscription of	43.
JUSTIN II, emperor	coins of	69.
JUSTINIAN, emperor	coins of	44.
KARO, GEORG	saves the finds and records	ix.
KEIL, JOSEF	publishes Lydian inscriptions	12, 57.
LABORDE, LÉON DE	visits Sardis, 1826	7.
LEAKE, WILLIAM MARTIN	Journal of	5, 7, 27.
LEO I, emperor	coins of	44.
LITTMANN, ENNO	publishes Lydian inscriptions	vii, viii, x, 117, 118.
	visits Sardis, 1913	123.
LUCAS, PAUL	visits Sardis about 1714	5.
MACY, V. EVERIT	finds coins in "Basis"	74.
MACY, Mrs. V. E.	finds bracelet	84.
MCCORMICK, CYRUS	member of staff	145, 152.
MENDEL, GUSTAVE	excavates at Sardis	4, 8, 26, 73, 98.
MERMNADAE	at Sardis	3.
MINNS, ERNEST H.	mentioned	182.
MOREY, CHARLES RUFUS	on Roman sarcophagus	viii, 138.
	on frescoed tomb	174, 183.
NORTON, CHARLES ELIOT	letter to, quoted	7, 10, 13, 31.
OSBORN, HENRY FAIRFIELD	mentioned	153.
OSMAN HAMDY Bey	mentioned	8, 37.
PAGE, L. RODMAN	surveys aqueduct	123.
PEPYS-COCKERELL, Mrs.	mentioned	5.
PEYSSONEL, CHARLES DE	visits Sardis about 1750	5, 25, 27.

PEYSSONEL, CHARLES DE	drawings of	6, 23.
	<i>I, 19</i>	
PHILETAIROS	coins of	76.
PHILIP, HOFFMAN	counsellor of Embassy	x.
POLYBIUS	on Sardis	2, 17 n. 1, 29 n. 1, 178.
PREMERSTEIN, ANTON VON	publishes Lydian inscriptions	12, 57.
PROKESCH, ANTON VON	visits Sardis, 1825	7.
PRUSSIAN CONSUL	at Smyrna	9.
	on Lydia	2.
RADET, GEORGES	on Sardian tile	12, 78.
RAMSAY, Sir WILLIAM M.	opinion of, cited	12, 52 n. 2.
READ, CHARLES N.	assistant engineer	37, 62.
RIEGL, ALOIS	mentioned	182.
ROBINSON, DAVID M.	works at Sardis	viii, 17 n. 1, 38, 43.
ROCKHILL, WILLIAM W.	American ambassador	x.
ROSTOVITZ, MICHAEL	quoted	181-183.
	sarcophagus of	ix, 136, 158.
	Pl. III, 154, 189-191.	
	tomb of	139, 170-174.
SAYCE, A. H.	mentioned	12.
SCOPAS	mentioned	95.
SELEUKOS I	wife of	43.
	coins of	76.
SCHMAVONIAN, Mr.	of U. S. Embassy	x.
SHEAR, T. LESLIE	member of staff	viii, 11, 145, 154, 155.
SMITH, THOMAS	visits Sardis about 1670	4, 25.
SPIEGELTHAL, H.	works at Bin Tepé	4, 7, 9, 10, 12, 13.
STASOV	quoted	182.
STOEVEER, EDWARD R.	chief engineer	62.
STOEVEER, PHILIP	assistant on staff	123.
STRABO	mentioned	8.
STRATONIKE	inscription of	43.
SWEDISH CONSUL	at Smyrna	ix.
	visits Sardis, 1670	4.
TAVERNIER, JEAN-BAPTISTE	coins of	44.
THEODOSIUS, emperor	mentioned	31.
TIBERIUS, emperor	destroys Sardis	4.
TIMOUR LENG		
	coins of	44.
VALENS, emperor		
	reports on geology	vii, 123, 133, 180.
WARFIELD, WILLIAM	supply equipment	37.
WHITE, J. G. & Co	opinion of, cited	52 n. 2.
WILAMOWITZ-MÜLLENDORF, ULRICH VON	opinion cited	52 n. 2.
WILHELM, ADOLF	visits Sardis, 1750	4, 5, 25.
WOOD, ROBERT		
	mentioned	117, 140.
ZEPATOS, STEPHANOS		

## INDEX II: PLACES\*.

AEOLIS	bounded by Hermos	15.
AHMEDLI	village near Sardis	9.
AKROPOLIS (of Sardis)	inscriptions on	12.
	description of	16, 17.
	Pl. I, 4, 6, 6a.	
	capture of, 216 B. C.	17, n. 1.
	view from, described	19, 20.
	walls of, described	21-25.
	<i>13-15</i>	
	disintegration of	24, 25, 178.
	cisterns on	25.
	city walls on N. side of	29.
	aqueduct on	35, 36.
	fragments and debris of	57, 66, 67, 90.
	geology of, discussed	176, 177.
ASSOS	American excavations at	7.
ASSYRIA	relations of, with Lydia	1, 2.
ATHENS	German Archaeological Institute at	ix.
	area of Olympieion at	102, n. 1.
BAALBEK	mentioned	5, 15.
BIN TEPE	Spiegelthal's work at	4, 9, 10, 12.
	Dennis' work at	4, 7.
	described	8-11.
	tumulus chamber at	11.
	<i>3</i>	
	views of	15, 21, 58.
	tumulus at, excavated 1914	154, 155.
	masonry in tumulus at	170.
BOGHAZ-KIÖI	Hittite city at	2.
BOZ-DAGH	Turkish name of Mt. Tmolos	16, 19, 20.
COLOË (Lake of)	mentioned	9, 21.
	geology of	178.
CRETE	pottery from	13.
DABBAGH-TCHAI	river near Sardis	20, 21, 176, 178.
	Map I, 10	
	aqueduct in ravine of	36.
EPHESOS, ARTEMISION OF	sculptured drums from	8.
	Lydian inscription from	56.

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\* Italic figures refer to the Illustrations.



EPHESOS, ARTEMISION OF	"basis" discovered at, by Hogarth	65.
	temple deposit in "basis" at	74.
	area of	102, n. 1.
	sculptured pedestals of	107.
GYGAEAN LAKE	see <i>Coloë</i> .	
HAURAN	tombs in	118.
HASANLAR-DAGH	mentioned	178.
HERMOS (River)	mentioned	15, 155.
	plain of	20.
	views of	21, 58.
	tumuli in valley of	157.
	geology of valley of	177, 178.
IONIA	relations of, with Lydia	2, 3.
	bounded by Hermos	15.
IS-SANAMEN	Tychaion at	174.
JAMANLAR-DAGH	near Hermos	178.
KARA-BEL	rock sculptures of	2.
KERTCH	tombs of, compared	181, 182.
LYDIA	Assyrian relations with	1, 2.
	culture of	2.
	relations of, with Ionia	2.
	early coinage of	12.
	objects from, scarce	12-14.
	plain of	15, 21.
	period of greatness of	2, 153.
	Persian conquest of	160.
	see <i>Akropolis, Bin Tepé, Coloë, Hermos, Nekropolis Hill, Paktolos, Sardis, Tmolos</i> ; and, in Index III, <i>Lydian Building, City</i> , etc.	
MAGNESIA AD SIPYLUM (= Manissa)	mentioned	2, 14.
MERMÉRÉ GIÖL	see <i>Coloë</i> .	
MILETOS	area of Didymaion at	102, n. 1.
MISMIYEH	Praetorium at	173.
NEKROPOLIS HILL	described, and view of	17, 58.
	50, 54.	
	excavations on side of	76-78.
	tombs in, geology of	176-178.
	see, in Index III, <i>Nekropolis, Tombs</i> .	
OEDEMISH	mentioned	20.
PAKTOLOS (River)	Maps I, II, III, 18.	
	ran through Sardis	2, 15, 16.
	bed of, described	3, 4.
	tributaries of	19.
	valley of	21.
	12.	
	ruins of bridge over	31.

- |                  |  |                     |
|------------------|--|---------------------|
| PAKTOLOS (River) | E. bank of, 1910 23.   | 39.                 |
|                  | mentioned  | 38, 67, 76.         |
|                  | tumuli in valley of  | 157, 165.           |
|                  | tombs in bluff near  | 162.                |
|                  | geology of   | 178-180.            |
|                  | see <i>Sardis</i> , and, in Index III, <i>Gold</i> .   |                     |
| PALMYRA          | mentioned  | 5.                  |
| PASARGADAE       | tomb of Cyrus at   | 170.                |
| PERGAMON         | bilingual inscription from   | 57.                 |
| PERSIA           | Sardis under rule of   | 2, 22, 160.         |
|                  | king of  | 1, n. 1, 160.       |
| SALIHILI         | labourers from   | 60.                 |
| SAMOS            | aqueduct of, mentioned   | 36.                 |
|                  | Heraion of, its area   | 102, n. 1.          |
| SARDIS           | antiquity and importance of  | 1-3, 20, 22, 152.   |
|                  | Map I, 1, 4, 18, 19.   |                     |
|                  | agora of   | 3.                  |
|                  | extant remains of  | 3, 21-34.           |
|                  | part of, deeply buried   | 3.                  |
|                  | art and industry of  | 12, 13, 150-155.    |
|                  | antique objects from, few in 1910  | 12.                 |
|                  | topography and geology of  | 15, 175-180.        |
|                  | see <i>Akropolis</i> , <i>Dabbagh Tchai</i> , <i>Lydia</i> , <i>Nekropolis Hill</i> , <i>Paktolos</i> , <i>Tchamur Hammam</i> , <i>Tmolos</i> , and, in Index III, <i>Aqueduct</i> , <i>Bridge</i> , <i>Church</i> , <i>Earthquake</i> , <i>Excavations</i> , <i>Inscriptions</i> , <i>Lydian Art</i> , etc., <i>Nekropolis</i> , <i>Temple</i> , <i>Tombs</i> . |                     |
| SART             | Turkish name of Sardis   | 5, 16, 67, 68.      |
| SELINOUS         | area of temple at  | 102, n. 1.          |
| SMYRNA           | objects from Sardis taken to   | ix.                 |
|                  | antiquity-market of  | 13, 14.             |
|                  | bay of   | 15, 178.            |
| SYRIA            | mentioned  | 88, 174.            |
| TCHAMUR HAMMAM   | hot baths of, near Sardis  | 20, 21.             |
| TERMESSES        | tomb at, referred to   | 173.                |
| TMOLOS (Mount)   | mentioned  | 4, 15, 16, 21, 178. |
| TRALLES          | objects found at   | 12.                 |

### INDEX III: SUBJECTS\*.

ALABASTRA	found in tombs	56, 83, 121, 144.
AMERICAN JOURNAL OF ARCHAEOLOGY	reports in	vii.
ANTAE, EAST (of temple)	93, 106. anta of S. side found space between fragments of cap found bases of mentioned found	69. 71. 71, 101, 108. 105. 49-50. 42.
ANTAE, WEST (of temple)		
ANTEFIX	25. two, described	112.
APSE	119. see <i>Church</i>	
AQUEDUCT	described Map I. at Samos survey of	35, 36. 36. 123.
ARCHITRAVE (of temple)	65, 93, 108. part of, in place, about 1750 complete block of 65. fragment of represented with wings	25. 71, 72, 92, 93. 101, 108. 12, 78, 122.
ARTEMIS	74, 130. see <i>Temple of Artemis</i> .	
ARTEMISION	see <i>Temple of Artemis</i> , and in Index II, <i>Ephesos, Artemision of</i> .	
ATTIC WARE	found in tombs	79, 118, 154.
BASE (of statue or stele)	group of early bases 25-28, 35. in exedra E. of temple 147. of statue in stoa	40, 42, 127, 128. 132 153
BASES (of columns)	mentioned 110-112. see <i>Foundations, Torus</i> .	50, 72, 105, 110, 111.
BASIS (of cult image)	found in temple 59, 71. silver coins found in see <i>Temple, Earlier</i> .	65. 74, 76.
BERLIN MUSEUM	Lydian text in	57.
BRICK	in Akropolis walls Lydian city probably built of in Roman city church built of Byzantine tomb built of	23, 25. 29. 33. 91, 92, 112, 113. 128, 129.

\* Italic figures refer to the Illustrations.



- BRIDGE remains of, over Paktolos 31.
- BRITISH MUSEUM head from Sardis in 7.
- 2.
- pottery from Sardis in 9, 13.
- Ephesos inscription in 56.
- sculptured pedestals in 107.
- BRONZE objects in tombs 56, 142, 154.
- mirror of 84.
- 82.
- small instruments of, in cups 127.
- BUILDING of uncertain use 30, 31.
- remains of, Byzantine 16, 33.
- small, E. of church 132.
- 146.
- rectangular, N.W. of temple 127.
- see *Brick, Church, Concrete, Temple.*
- BYZANTINE city and walls 16, 29.
- 18.
- remains in Akropolis 22.
- remains of buildings 16, 31, 33.
- water pipes 44, 45, 95.
- carved slab 87, 88.
- 86 D.
- tombs near temple 94, 128, 129.
- graves S. of church 94.
- 101.
- pottery found 197.
- graves in tumulus 165.
- CAPITALS (of columns) one awry, in 1699 and 1764 25.
- found on surface, 1910 28.
- of standing columns 28-29, 107, 111.
- 115.
- complete one found 52, 53.
- 46 A, 46 B.
- fragment, set on plinth 101.
- 105.
- three found, S. side 101.
- description of 107.
- one found, N. of temple 128.
- 139, 139 A.
- CASTELLA (of aqueduct) mentioned 36.
- CELLA (of temple) wall of, visible in 1750 25.
- W. wall of 50.
- 44.
- made into cistern 52.
- N. wall of 52, 68.
- 45.
- walls and interior of 68, 69, 104.
- 59, 62, 63.
- entirely cleared 69, 103.
- moulding on wall of 104.
- see *Cultus Chamber, Opisthodomos.*

CHAMBER-TOMB	type of, described	56, 158.
	175, 176.	
	see <i>Lydian Tombs, Tombs, Tumulus.</i>	
CHURCH	structure alleged to be	33.
CHURCH (E. of temple)	two columns connected with	70, 112.
	63.	
	excavation of	90-92, 112, 113.
	89-92, 118, 119.	
	apses of	91, 112.
	120, 121.	
	date of	113.
	small buildings E. of	132.
	146.	
	built on late deposits	179.
CISTERN	in Akropolis hill	25.
	in temple, pavement of	7, 63, 64.
	in temple, making of	52, 63, 69, 74.
CLAMPS	in "Basis"	65.
COINS	with Lydian letters	12.
	Byzantine, found	28, 44, 49, 67-69.
	found in "Basis", 54 silver	74.
	found in "Basis", one Lydian	76, 148.
	finds of	74, 95.
	hoards of, found	68, 69, 113, 134.
	Sardian, showing two temples	114, 115, 124.
	Hellenistic, found	74, 127.
	one in grave	134.
COLUMNS (exterior)	two standing in 1910	3, 16, 25, 26, 104, 105.
	page 1, 5, 7, 16, 17, 93.	
	destruction of	28.
	arrangement of discussed	103, 104.
	dimensions of	105.
	in E. porch	105.
	113.	
	inscription on, Greek	110, 111.
	inscription on Lydian	106, 126.
	see <i>Capitals, Drums, Foundations, Temple, Torus.</i>	
COLUMNS (fluted)	in E. porch	72, 107.
	69, 114.	
	at W. end	50.
	43.	
COLUMNS (interior)	of cultus chamber	63.
	foundations of, found	69.
	see <i>Temple, Earlier.</i>	
COLUMNS (on pedestals)	in E. porch	72, 106.
	69, 114.	
	see <i>Inscriptions, Lydian.</i>	
COLUMNS (miscellaneous)	two S. of temple	70, 112.
	63.	
CONCRETE	in city walls	29, 33.
	in "gymnasium"	31.
	in temple cistern	63.
	structure N. of temple	124, 127, 133, 135, 146.

- CONCRETE 134, 135, 160.  
                   tombs of, found 145.  
                   see *Foundations.*
- CONDUIT see *Water-pipes.*
- CONSOLE see *Portal.*
- CORINTHIAN WARE found in tombs 79, 121, 154.
- CORNICE (of temple) fragment of 96, 108.
- CORPUS INSCR. GR. 99.  
No. 3467, site of 33.  
                  *F on Map I.*
- COUCH see *Tombs, Tumulus.*
- CREMATION practice of 56, 157.
- CROSS in Akropolis walls 24.
- CULTUS CHAMBER mentioned 63, 103.  
light wall across 64.
- CUPS see *Columns (interior).*  
small, with eggshells 127, 128.
- CYBELE temple of, alleged 7.  
head of, supposed 7, 8, 64.  
                  2.
- "CYRENAIC" WARE in tombs 154.
- DILETTANTI, SOCIETY OF mentioned 5.
- DIONYSOS born on Tmolos 15.
- DOOR of chamber in tumulus 11.  
                  3.  
of tomb, inscribed 56.  
                  49.
- DOORWAY see *Portal.*
- DROMOS of tumulus 11.  
                  3.  
of chamber tombs 58, 141, 158.  
                  135, 157, 163, 175, 184.
- DRUMS (of columns) fallen, mention of 70, 73, 89.  
                  67, 90, 93.  
removal of 90, 92, 130.  
                  144, 155.
- DRUMS (fluted) fallen, mentioned 27, 50.  
                  39-43.  
of elevated columns 106.  
of old columns, re-used 111.
- DUMP mention of 73, 99.  
                  102.
- EAGLE statue of, with snake 125, 126.  
                  137, 138.
- EARTHQUAKE of 17 A.D. 17, 25, 31, 111, 134, 178, 179.
- EGGS shells of, in cups 127, 128.
- EXCAVATION HOUSE damaged and robbed, 1920 ix.  
building of 57-60.  
                  50-54.  
water supply of 93.
- EXCAVATIONS problems to be solved by 1-3.  
at temple, 1910 38-55.  
Pl. I, 24-28.



EXCAVATIONS	at temple, 1911	61-76.
	55-70.	
	at temple, 1912	89-115.
	87-121.	
	at temple, 1913	123-135.
	132-150.	
	at temple, 1914	145-154.
	159-173.	
	in the plain	135-139.
	see <i>Nekropolis, Pyramid Tomb, Tombs</i> , and, in Index I, <i>Bin Tepé</i> .	
EXEDRA	E. of church	132.
	Map III, 147.	
EXPLORERS	early	4-8.
FIGURINES	see <i>Terra-Cotta</i> .	
FINDS	method of locating	54, 55, 99, 100.
	rewards for	99, 142.
FIRMAN	for excavation	37.
FOOT	of statue, two found	53.
	with gilded sandal	153.
FOUNDATIONS (of columns)	concrete casing of	42, 45, 46-49, 54, 95, 111, 129, 134.
	marble, excavated	45, 54, 68, 69.
	34-36, 38, 43.	
	well partly under casing	129.
	sandstone, of older temple	47, 50, 148.
	166.	
	see <i>Temple, Earlier</i> .	
FRESCOES	of Christian tomb	139, 181-183.
	Pls. IV, V.	
GEMS (engraved)	in bracelet	84.
	84.	
	"Graeco-Persian"	85, 86.
	85-86 B, 130, 131.	
	Lydian, found in tombs	86, 121, 122.
	Lydian, settings of, described	86, 142.
GEOLOGY	report on	175-180.
GERMAN ARCHAEOLOGICAL INSTITUTE	mentioned	ix.
GLASS	objects found	viii, 83, 154.
GLOBE	marble, inscribed	43.
GOLD	in Paktolos	16 n. 1.
	objects in tombs	56, 84, 85, 121, 143, 144, 154.
	83, 158.	
GRAVES	Byzantine, found	94, 98, 145, 165.
	101.	
GREEKS	as labourers	60.
GYMNASIUM (so called)	ruins of	16, 31, 33.
	18.	
	inscription in	33.
HATTI	see <i>Hittites</i> .	
HEAD	see <i>Horse, Ivory, Lion, Masks, Sculpture</i> .	
HEAD (colossal)	of Faustina the Elder	7, 17, 64.

HEAD (colossal)	fragmentary, of man	63.
	57.	
	fragmentary, of man	66.
	61.	
	face of woman	147.
	164.	
	fragments of, found	147.
HELLENISTIC CITY	walled in	29.
	extent of	31.
HITTITES	remains of, in Lydia	2, 126.
HORSE	marble head of	153.
	172, 173.	
	on Lydian pottery	151.
	170.	
HOT BATHS	see, in Index II, <i>Tchamur Hammam</i> .	
HOUSES	modern, at Sardis	16.
	ancient, remains of	76.
IONIC ORDER	of temple	25.
INHUMATION	practice of	56, 159.
INSCRIPTIONS, BILINGUAL	Lydian-Aramaic	117.
	123, 179.	
	Lydian-Greek, from Pergamon	57.
	Lydian-Greek, found	126.
	138.	
INSCRIPTIONS, GREEK	in Akropolis walls, etc.	24.
	agonistic	31.
	C. I. G. 3467	33.
	20.	
	of Stratonike and Iollas	43.
	mortgage on wall of cella	52, 110.
	fragments of, in temple	52, 53, 67, 94, 96.
	on terra-cotta vases	79.
	on base of column 4	110, 111.
	mentioning Zeus	124, 147.
	on stele N. of temple	128.
	140.	
	on sarcophagus of Sabina	136.
	fragments of, S. of temple	145.
	in Christian tomb	181, 183.
	Pl. IV.	
INSCRIPTIONS, LATIN	a few already known	24, 33.
INSCRIPTIONS, LYDIAN	preserved in 1920	ix.
	on coins	12.
	three published	12.
	Sardian, not known till 1910	33.
	on tomb door	56, 160 n. 2.
	49.	
	from Ephesos	56.
	on stele near temple	66.
	60.	
	on limestone block	94.
	95.	

INSCRIPTIONS, LYDIAN	on fluted column	106, 126.
	eleven found in Nekropolis	117.
	on stele S. of temple	146.
	mostly inscribed on marble	160.
	on terra-cotta vases	154.
IVORY	small objects of	viii, 43, 142.
	head found in tomb	140, 164.
	156.	
JEWELRY	specimens of, found	56, 84, 121, 143, 154.
	Lydian, character of	12, 84.
	83-85, 129-131, 158.	
	see <i>Gems, Gold, Rings.</i>	
LAMPS	terra-cotta, from tombs	ix, 121.
LANDSLIDES	on parts of site	19, 24, 166.
LEVELS	in excavations	39-42.
LIME-KILNS	on site of temple	28, 67, 74.
LIMESTONE	used in tumulus	11.
	ball on top of tumulus	19.
	pavement in Lydian Building	42.
	sarcophagus of	159, 160.
	stelae and steps of	160.
	in early buildings	170.
LION	heads of, in gold	84.
	head on temple cornice	96.
	99.	
	marble, one couched, one sitting	125, 126.
	136-138.	
	these not in situ	130.
	human headed, in gold	143.
	158.	
	in signet ring	144.
	129.	
	small, in gold	154.
LYDIAN ART	see <i>Coins, Jewelry, Sculpture, etc.</i>	
LYDIAN BUILDING	walls and steps of	41-43, 65.
	26, 29, 100, Map III.	
	clearing of	44, 52.
	35.	
	space adjoining	65.
	stele found near	66.
	relation of, to temple	104.
	walls on level of	127.
	steps found near	128.
LYDIAN CITY	possible site of	21.
	extent of	31.
LYDIAN KINGS	alleged tombs of	4.
	palace of	115.
LYDIAN LANGUAGE	see <i>Inscriptions, Lydian.</i>	
LYDIAN LEVEL	mentioned	66, 130.
LYDIAN OBJECTS	description of	11-14.
LYDIAN POTTERY	most of, saved	ix.



- LYDIAN POTTERY      found by Dennis      12.  
                              specimens of      79, 118, 159.  
    75A, 75B, 124-126.  
                              fragments of, found      129, 134, 142.  
                              found N. of temple      150-153.  
    168, 170.  
                              not found elsewhere      154.  
                              dates of      155.  
 LYDIAN TOMBS      mentioned      55-57.  
                              described      158-165.  
    176-178, 181-184.
- MAP      of Sardis and environs: 18, Map I  
                              Temple area, February 1910: Map II  
                              Temple area, June 1914: Map III
- MARBLE      in Akropolis walls      23.  
                              taken from theatre      31.  
                              quarry of, near Sardis      19, 176.  
    9.  
                              taken from temple      28.  
                              used for lime      49, 68.  
                              geological formation of      176.  
                              see *Foundations, Stelae.*
- MASKS      of terra-cotta      81, 121.  
    78, 79, 124.
- MINOTAUR      tile depicting      78.
- MIRRORS      found in tombs      56.  
                              large one of bronze      84.  
    82.
- MORTGAGE      inscribed on temple wall      52, 110.
- MOULDING      of Lydian stelae      42.  
                              with anthropomorphic design      64.  
    58.
- MUSEUM (of excavations)      referred to      ix, 60.
- MYRINA WARE      figurines resembling      81.  
    76, 77.
- NAOS      see *Cultus Chamber.*
- NEKROPOLIS      excavations in, 1910      55-57.  
    " " 1911      81-86.  
    " " 1912      115-122.  
    " " 1913      140-144.  
    " " 1914      154-155.
- "NIOBE" (near Magnesia)      a Hittite monument      2.
- OPISTHODOMOS      of temple      52, 62, 63, 103.  
    45, 56.  
                              walls of, described      104.
- OTTOMAN MUSEUM, IMPERIAL      Sardian objects in      x.  
                              see *Halil Edhem Bey, Osman Hamdy Bey.*
- PAINTING      see *Frescoes.*
- PAROTIDS      of Lydian Building      41.  
                              of temple steps      103.

- PAROTIDS of tomb steps 171.
- PAVEMENT of cistern 7, 63, 64.  
of temple found 40.  
of temple platform 103.  
of church 112.
- PEDESTALS (of columns) in E. porch 72, 106, 107.  
108, 109, 113, 114.
- PEDESTALS (of statues) two north of temple 125, 126.  
137, 138.  
see *Base*.
- PLATFORM (of temple) excavations on 63.  
not of masonry 103.
- POLYGONAL stonework near temple 127.
- PORTAL, E. (of temple) standing in 1699 25.  
fallen in 1764 25, 28.  
remains of 69, 71, 72, 101, 108, 109.  
62, 66, 67, 107, 117.  
steps in front of 103.  
plan and elevation 108.  
116.
- POTTERY fragments of, near temple 53, 54, 56, 133, 134.  
Hellenistic 121.  
127.  
Byzantine 127, 197.  
early, found below lions 130.  
fragments of early, found 140.  
decorated in relief 151.  
170.  
fragments of, in tombs 154, 155.  
see *Corinthian Ware, Cups, Lydian Pottery, Terra-cotta, etc.*
- PYRAMID TOMB discovered 1914 154, 167-170.  
174, 185-188.
- QUARRY see *Marble*.
- RAILWAY used in excavations 62, 65, 73, 124, 130, 146, 150, 152.  
additional equipment 67, 68.  
86 C.
- RAIN-SPOUT see *Cornice*.
- REWARDS given for finds 99, 142.
- "RHODIAN" WARE in tombs 79, 154.
- RINGS found in tombs 56.  
two in sarcophagus 141.
- see *Gems, Gold, Jewelry*.
- ROMAN CITY remains of 3, 31-33.  
18, 19.  
inscriptions in 12.  
site of 16, 21, 31-34.  
18.
- ROOF-TILES marble, of temple 76, 110.
- see *Terra-cotta*.
- "ROYAL" ROAD passing through Sardis 2, 15, 30, 135.  
18 (marked High-road).  
tomb facing on 135, 170.
- "ROYAL" TOMBS see *Tumulus*.

- SANDSTONE in early structures 41, 42, 65, 148.  
balls of 41.  
26.  
altar table of 112.  
tombs cut in 140, 162.  
blocks of, around tumulus 165.  
formation of 177.  
of terra-cotta 81, 144.  
80.  
of limestone 81, 159, 160.  
81.  
in Lydian tombs 116, 141, 159, 160.  
of Sidamara type 135-137, 170.  
151, 152, Pl. III.  
rock-hewn 165.  
Egyptian, found 56.  
preserved in 1920 ix.  
marble feet found 53.  
Byzantine relief 88.  
86 D.  
relief with animals 94.  
96.  
two Hellenistic heads 95.  
98.  
lion's head in cornice 96.  
99.  
fragments of 53, 96.  
sarcophagus of Sabina 135-138.  
151-153.  
male torso 146.  
fragments of two heads 147, 148.  
horse's head 153.  
172, 173.  
two marble feet, one hand 153, 154.  
see *Eagle, Head, Ivory, Lion, Statue.*  
see *Gems.*
- SEALS
- SETTLING-POTS Byzantine 44, 134.  
33.
- SIDAMARA type of sarcophagus 135, 137, 138.
- SILVER objects in 83.  
82.  
see *Coins, Gems.*
- SMYRNE, CASSABA etc. RAILWAY mentioned 15.  
Map I.
- SNAKE sculptured, with eagle 127.  
138.
- SNOW on excavations 61, 62, 123.  
55.
- SOIL depth of 3, 65.  
see *Dump.*
- STADIUM near Theatre 16, 31.  
Map I, 18.
- STATUE fragment of, in relief 53.  
47.



STATUE	of female, poor	53.
	48.	
	colossal thumb of	67.
	61.	
	fragments of	96, 153, 154.
	see <i>Sculpture</i> .	
STELE	base of, specimens	40, 42.
	Map III, 35.	
	Lydian, found	66.
	60.	
	with Greek inscriptions	67.
	two found in tombs	83.
	at Lydian tomb	116.
	122.	
	of limestone	160.
	decorated cap of marble	160.
	179, 180.	
	location of	160.
	178.	
	see <i>Inscriptions, Greek, etc.</i>	
STEPS	of Lydian Building	41.
	26, 29.	
	of temple to N. E.	49, 50, 97, 104.
	35, 41, 100.	
	of E. portal	103.
	N. of Lydian Building	128.
	141.	
	of tombs	158, 162, 165.
	of pyramid tomb	155, 167.
	174, 187.	
STOA	as plan of Lydian Building	42.
	N. of temple	152, 153.
STREET	on N. E. side of temple	151.
	169.	
STUCCO	see <i>Walls</i> (stuccoed).	
TANTALOS	tomb of	9, 165.
TEMPLE-DEPOSIT	mentioned	74, 76.
TEMPLE, EARLIER	possible site of	42.
	foundations of	47, 50, 148.
	166.	
	"Basis" a survival from	65.
TEMPLE OF ARTEMIS	ruins of, uninjured	ix.
	formerly called "of Cybele"	7.
	Dennis' work at	7.
	excavations at, 1910	38-55.
	" " 1911	61-76.
	" " 1912	89-115.
	" " 1913	123-135.
	" " 1914	145-154.
	pseudo-dipteral	47, 73.
	S. pteroma of	47, 52.



TORUS (of columns)	two complete	98, 110.
	100.	
	description of	105, 106.
	110-112.	
TORUS (of wall)	described	104, 105.
TREASURY CHAMBER	see <i>Opisthodomos</i> .	
TUMULUS	specimens of, at Bin Tepé	8, 9, 48, 155, 157.
	examined by Dennis	10.
	interior of	11, 170.
	3.	
	small hill resembling	57, 167.
	excavated in 1914	154-156.
	in Paktolos and Hermos valleys	157, 165.
	see, in Index II, <i>Bin Tepé</i> .	
TURKS	as labourers	60.
VASILIKI WARE		13.
WALL (stuccoed)	of Lydian Building	41, 42.
	27.	
	of building E. of church	132.
	148.	
WALLS	ancient, near hot baths	21.
	of Akropolis	21-25.
	13-15.	
	of Roman city	29-31.
	18.	
	in temple cella	62.
	made of boulders	94, 95.
	near Lydian Building	127.
	see <i>Cella, Concrete, Temple, Tumulus</i> , and, in Index II, <i>Akropolis</i> .	
WATER	used in excavation	93.
WATERFALL	of tributary to Paktolos	19, 20.
	9.	
WATER-PIPES	Roman or Byzantine	44, 45, 95.
	31-33.	
WELLS	found N. of temple	129.
	found S. of temple	134.
	Map III.	
ZEUS (Polieus or Olympios) temple of		114, 115, 124.
	worshippers of, mentioned	124, 147.







NOTE:  
 --- ROADS (UNIMPROVED)  
 --- TRAILS (FOR ANIMALS)  
 --- STREAMS (UNIMPROVED)  
 --- AQUEDUCT (ROMAN)  
 \* QUARRY (WORKING FACE)  
 \* AN OBJECT OF INTEREST  
 O TRIANGULATION POINT

MAP  
 OF  
 SARDIS AND ENVIRONS  
 ASIA MINOR

SCALE 1:50,000

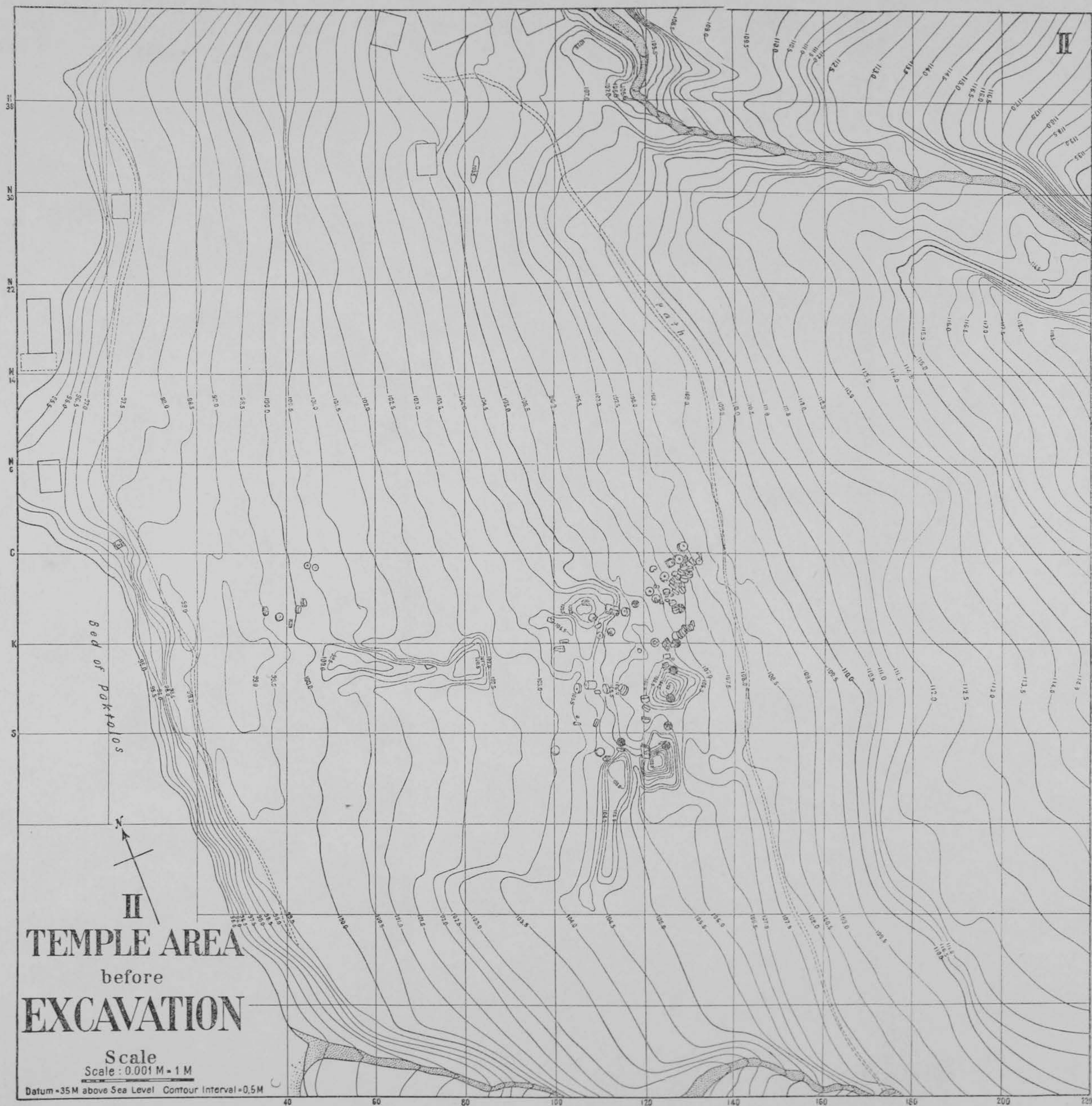
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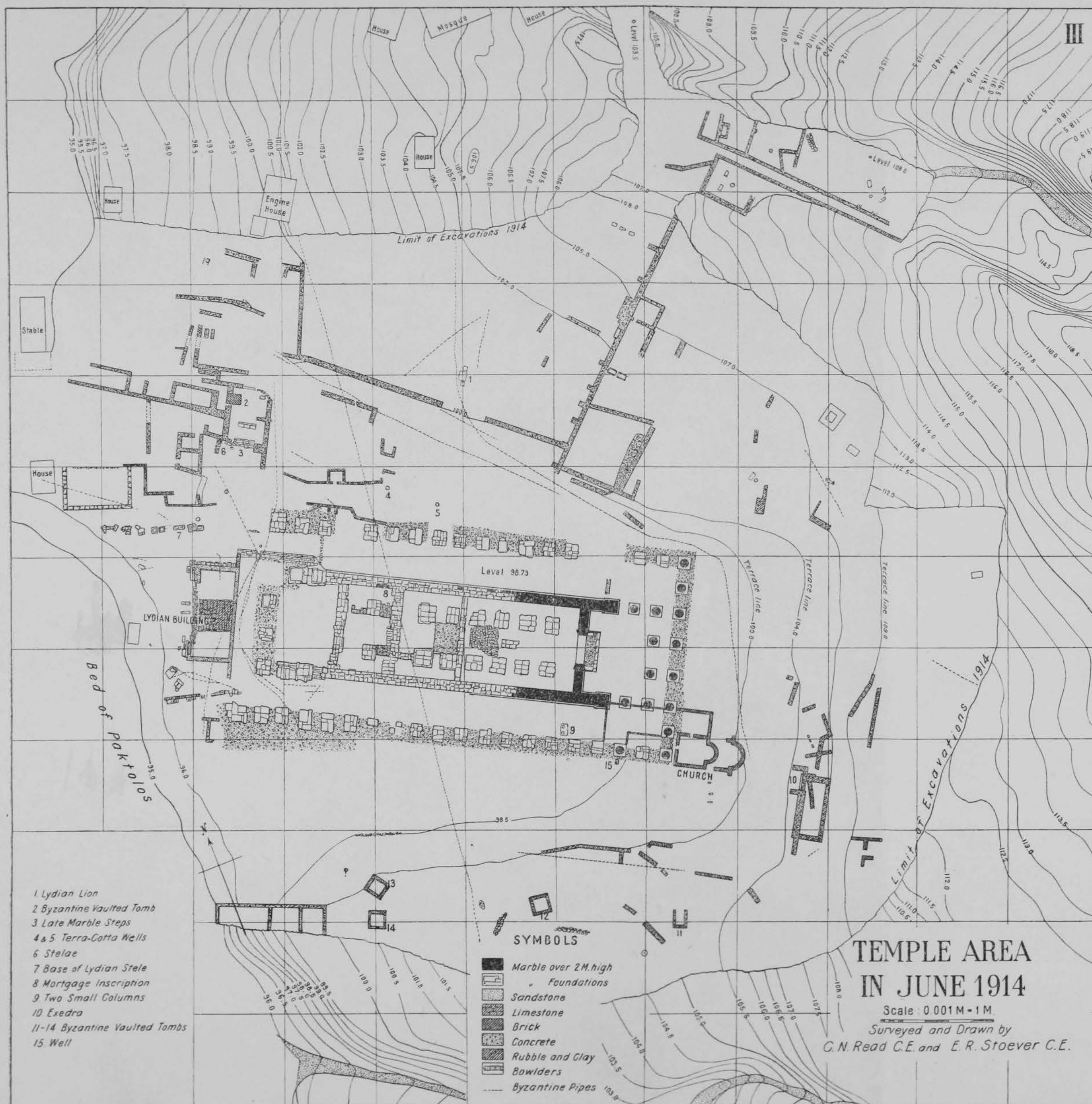


































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