

a hard layer of clay which contained pottery of the classical period. No trace of grave construction was discovered. The body was apparently laid out in the ground with no cover placed over it, since directly above it and partly hiding the skeleton is a small rubble wall. The circumstances which dictated this burial within the sacred area are by no means clear.

To the south and above the terrace wall we have exposed two small rooms which, to judge from the beddings for couches that are preserved on three sides, seem to have been modest dining halls. The pottery above the hard-packed clay floors is classical in date. A small rectangular niche in the southeast corner of the eastern room may have been used for storage of cooking utensils or perhaps for preparing food.

In the area to the west of the previous excavation we have cleared a narrow strip along the southern edge of the sanctuary. The discovery of numerous terracotta architectural fragments, including several lion-head spouts of Roman date, suggests that a Roman stoa (?) was once located here. Foundations for the north and south walls have appeared, together with a poros water channel along the south foundation (the front of the building, looking up the hill slope). There was possibly a classical predecessor to this stoa. Above the stoa to the south rock-cut steps create an apparent theatral area for which the stoa façade might have served as *scenae frons*. A little lower down the hill, to the north of the Roman stoa, two walls constructed of massive squared blocks were exposed. It is hoped that these two walls, which are certainly the most impressive discovered in the sanctuary to date, will prove to belong to a classical building of major importance to the site.

Terracotta figurines (P l. 132 a) and miniature votives (offering trays and *liknons* and even rattles and a sprinkler (P l. 132 b) have continued to turn up at a steady rate, but we have not yet encountered any important, closely defined deposits. The most important finds include: an Attic black-figured *epinetron* of the late 6th century B.C.; a fragment of a black-figured vase illustrating a temple façade with sculptured pedimental figures (P l. 132 c); more figurines of women holding pigs; a large-scale terracotta head of a barbarian (?) with full beard and moustache (P l. 133 a); and numerous fragments of large-scale terracotta scul-

pture. Four clay *pinakes* bear inscriptions which were written before firing (P l. 133 b); these are oblong in shape and all were inscribed by the same hand. Each tablet bears a single name in the genitive case, and of the four preserved (ΔΙΟΝΥΣΟΥ, ΟΛΟΛΥΝΓΟΥΣ, ΑΛΦΙΑΙΑΣ, ΙΩΓΡ[ΑΦΟΥ]) none appears to be a personal name. The meaning of these inscriptions and the purpose for which they were made are not clear.

During the year Mr. Charles K. Williams, Assistant Field Director of the Corinth excavations, continued his work of conservation in the North West Shops, just below the Archaic Temple to the south; he also undertook the installation of a new outdoor architectural museum adjacent to the Museum building on the south. Mr. Photios Zachariou, technician of the Greek Service of Antiquities and Restoration, whose services were generously put at our disposal by the Service, removed and remounted on canvas the wall paintings from the corridor of a Roman tomb excavated in 1962 to the north of the north city wall (P l. 134 a - c). Mr. Demetrios Skordos, for whose services we are also indebted to the Greek Service of Antiquities and Restoration, has almost completed the conservation of the early Roman mosaic pavement from the house excavated in Anaploga in 1962 and 1963. Both the wall paintings and the mosaic will be on display in the Corinth Museum in the very near future.

HENRY S. ROBINSON

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INVESTIGATIONS AT KENCHREAI

Excavations at Kenchreai, port of ancient Corinth, were carried out by the American School of Classical Studies at Athens during July and August of 1964. The work was done by the Indiana University and the University of Chicago, with E. S. Ramage and R. L. Scranton representing the two institutions as field directors. The general objective was to extend the investigation, begun in 1963, of the arrangement of the ancient town and port installations (P l a n 1). In the first campaign it had been established that at the southwestern end of the harbor (AREA A) there was an early church lying over a complex of warehouses and other Roman structures extending from the shore out on to a jutting pier with a mole projecting still



HARBOR OF KENCHREAI

JOSEPH SHAW & JOHN BANDEKAS 1964

Plan 1. Generalised Map of Site (Scale as provided, 1:2000)

further seaward; at the inmost corner of the harbor (AREA B) there was a complex of plainly built utilitarian structures of Roman and early Byzantine date; midway along the north side of the harbor (AREA E) there was apparently a relatively open area along the water front; at the northeastern end of the harbor at the base of the east mole (AREA C) there was a complex of structures dating from perhaps the late Hellenistic period and running through Roman times, the most prominent being a large Roman brick building — much of all this cut away by the sea to the east. In 1964 the complexes at the two ends of the harbor were further examined; investigations were conducted on the top of the central one of the three hills looking down on the harbor from the north (AREA G); and a structure about 750 m. north of the harbor on the east coast was examined.

The clearest and most abundant indications of pre-Roman activity on the site were found on the hill north of the center of the harbor (AREA G). The top of this ridge was examined by trenching, and almost everywhere were indications that the entire area had been quarried away during the fourth century B.C. The quarry-bed, with clearly defined outlines of the blocks removed, was well preserved over a wide expanse. On it lay some 0.40 m. of debris including quarry chips, and pottery, roof tiles, and figurines, some of which dated as early as the sixth century B.C., and almost none later than the mid-fourth. There is then a legitimate inference that the hill was occupied by structures of some sort prior to the quarrying, but not thereafter.

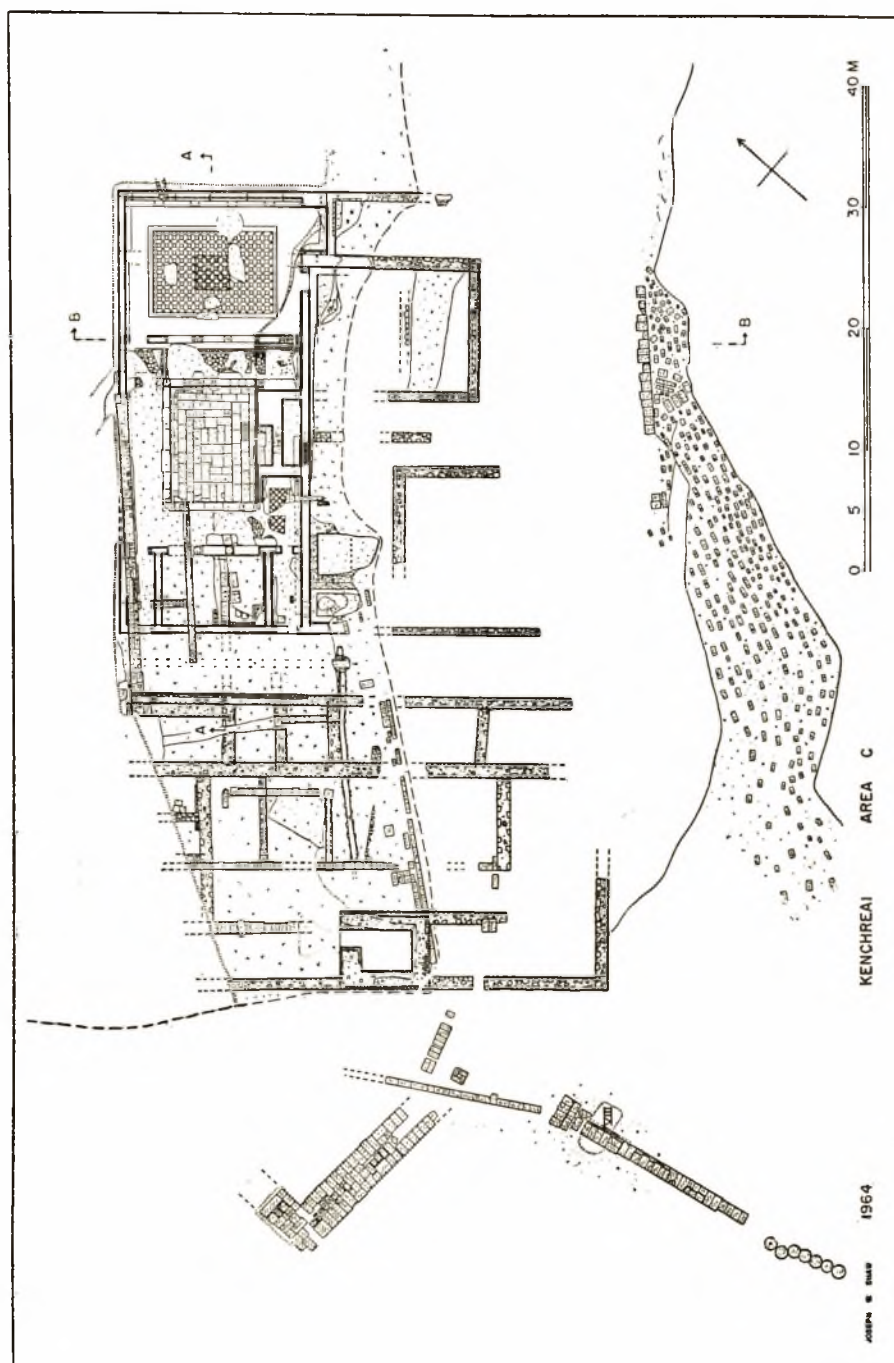
At the southern end of the hill, however, were extensive remains of walls, floors, water-proof basins and cisterns. Some of these were well made, and suggest the arrangements for a *fulling* establishment. Beneath these extends a rock-cut cistern in several branches, entered by a flight of seventeen steps. Nothing significant was found in the cistern, but the pottery associated with the floors of the buildings seems to date no later than the early part of the third century B.C.

At the northeastern end of the harbor (AREA C) (Pl. 135 a; Plan 2) the end of the present promontory was cleared — an area some 66 m. long (NE-SW.) and 18 m. wide. The NE. half of the Area — some 36 m. long — is occupied by part of a spacious and luxurious

Roman building with mosaic floors and fine brick walls, about half or two-thirds of which is lost in the sea to the east. The SW. end is occupied by a complex of concrete and poros foundations, representing buildings of which, again, much has been lost in the sea to the east.

Study of these structures is not complete, but some tentative conclusions may be ventured. The earliest structures, represented by a few walls of strikingly different orientation from most, and perhaps also by foundations visible in the water off-shore, may well be Hellenistic — some even from the period before Mummius. In general, deposits from before the time of Christ all along the shore seem to lie below sea level and have not been reached in the excavation, but even some of the walls with the «standard» orientation — NE-SW. — appear to be at least as early as the first century B.C. because they seem to be earlier than a drain-channel discovered in 1963 which contained pottery of about that period. Traces of walls of this second period are found beneath the SW. half and the middle of the Brick Building. The nature of the complex has not yet been clarified.

Around the end of the first century A.D. the Brick Building was erected, over the NE. part of the earlier complex, but the SW. part of the earlier complex probably continued to exist in remodeled state. The Brick Building itself included, in the part excavated, along the NW. side a large peristyle court surrounded by four columns on each side with a sunken area in the middle probably paved with marble slabs resting on the well-preserved poros foundations; and a spacious room facing on this from the SW., flanked by two narrow halls leading from narrow doors on the SW. end. There were also rooms to the east, now preserved only as ragged foundations on the sea-cliff. The structure was remodeled several times in subsequent periods. At one time, the structure was extended to the NE., and a room similar to that on the SW. erected; at this or another period the SE. side of the peristyle colonnade was replaced by a massive structure in the form of a rectangular niche, in which there are preserved indications that there may have been pipes sunk in the wall, as for water-spouts for a fountain. Behind this is a narrow sunken room with a long bench or step on one side, lined with marble, equipped with a drain. At still a later period the SW. half of the structure must have been destroyed; the



Plan 2. Northeast End of Harbor (Area C). Actual State

NW. wall was replaced by a rough rubble concrete wall with a new orientation, extending beyond the original SW. wall of the Brick Building and joining it to the complex lying to the SW.

The building was clearly one of some distinction, but its function has not been established. Numerous lamps and a few figurines were found in the debris; some of these refer in one way or another to Aphrodite, but no temple in the

and debris dumped onto the floor of the sea, rising to a height of 30 m. above the bottom of the harbor at its entrance. Several pits were excavated into the top and sides of the mass, some to a depth of about 2 m. In all of these were found pottery, lamps and coins of the second century A.D., but the significance of these with reference to stratification has not yet been fully determined. It is at least possible,



Plan 3. Southwest End of Harbor. Generalised and incomplete

ordinary sense was identified in the area excavated; what were taken as indications of a temple in 1963 proved illusory.

The Brick Building was evidently thoroughly destroyed around the end of the sixth century A.D. Remains of two large lime kilns in the ruins, and the coarse debris of demolition heaped over the floor, suggest that it suffered badly in an earthquake and was systematically plundered for lime and other building material.

At the southwestern end of the harbor (AREA A) efforts were made to investigate the complex of pier, mole and warehouses; other classical foundations thought to relate to the sanctuary of Isis mentioned by Pausanias and Apuleius; and the church.

Investigation of the pier and mole was conducted with scuba diving apparatus and underwater digging equipment including air lifts and Galeazzi water pressure hose. The southwest pier and mole, and the northeast mole, on superficial examination were found to be essentially similar in construction (Plan 3). They appear as masses of broken rock, earth,

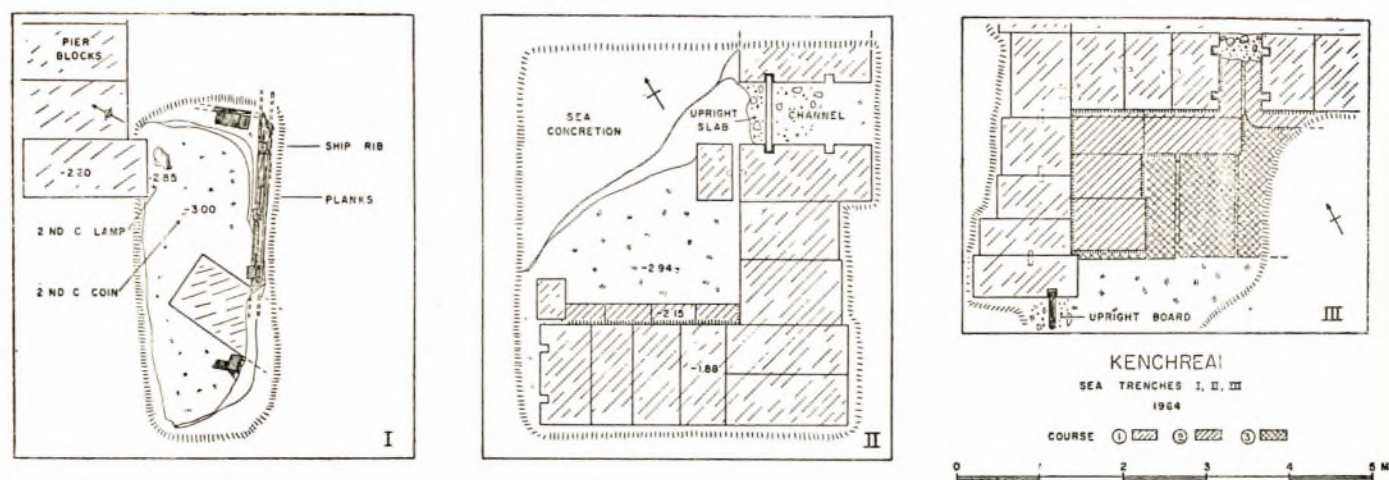
however, that the deposits examined represent enlargements and extensions in Roman times of earlier moles. Another pit was sunk into the floor of the harbor just off the southwest pier in the hope of obtaining a cross section of the normal accumulation of silt and debris, unaffected by purposive construction. The place chosen, however, proved to be a consolidated deposit of debris, including many fragments of pottery and glass, uniformly from the late first or early second century A.D.

On top of the southeast pier, which lies about two meters below the surface of the sea at the outermost end and rises to sea level at the shoreline, there have always been clearly visible in the water the foundations of a systematic array of quadrangular buildings and rooms, presumably warehouses, facing in on the harbor. Efforts to excavate in and around these walls at various points seem to show that they are in fact only foundations, the floors of the buildings now being gone; in front of them, along the harbor front, is still preserved a rough pavement of blocks of stone lined by kerbs or low walls

of poros ashlar blocks. A trench dug inland about 30 m. from the shore brought to light traces of walls resembling those of the warehouses preserved in the sea, in appropriate alignment, showing that the warehouses had a total front of at least 120 m. There were no traces of the pavement and kerbing in front of the westernmost end of the warehouse where exposed in the trench, and it might be supposed that the warehouses themselves extended to form an approximately right angle with the line of structures found in 1963 in Area B, though the actual

may represent the edge of the pier. The trench came down on the edge of a large boat or small ship, lying across the line of the wall. If ancient, the boat must date from the last days of the use of the harbor, to have been abandoned in such a place.

An effort was made to carry out a photogrammetric survey with under-water cameras of the foundations lying one to two meters deep on the outer third of the pier. At so small a distance, with the cameras directed straight down from the surface, the number of photographs



Plan 4. Three Trenches. Excavated under water; Actual State

R. HOHLFELDER & J. SHAW.

waterfront may have followed a curved or polygonal line in front forming a triangular open space in the corner.

At the outer end of the pier lies a complex of foundations, not shown on the generalised plan of the pier, whose relation to the warehouse system still remains uncertain (Plan 4). Pits sunk in investigation of some of these revealed that some of the walls are preserved in three courses of heavy poros blocks, although these two may be simply foundations, since no clearly recognizable floors were found. The rooms, or chambers, were equipped with passages. Three were found closed by a slab of wood, a large square roof tile, and a marble slab, respectively, set down in slots in the flanking blocks, like a portcullis. Each opening has two such closing slabs, or the slots representing them. At the southernmost corner of the pier a pit was cut to examine the structure of, and stratigraphy related to, a line of masonry which

required to cover the area was so great that it proved economically impossible to complete the photogrammetric chart.

Close to shore, where many foundations lie awash in the water, on the south side of the pier — behind the warehouses and away from the harbor — extensive investigations were made, chiefly with the Galeazzi force-stream (Pl. 135 b, 137). With this a number of the partially submerged foundations were «swept», so that their outlines and connections were rendered more clear. Immediately off-shore lies an apsidal structure; south of this a rectangular foundation with remarkably heavy walls. In front (seaward) of this there could be identified the foundations of a gateway with, on the north at least, an extraordinarily massive structure flanking it; a similar structure might be restored on the south, where any ancient construction has evidently been entirely removed. Thus one might develop the plan of a small

temple facing on a small court approached through a gate flanked by pylon-like towers, or at least huge, massive pedestals. The «pylon gate» was evidently replaced, or supplemented, in later times by a larger court to seaward, with more uniform surrounding walls.

The apsidal structure appears to consist of a rectangular enclosure some 10 by 8 m. with a large apse along the eastern side and a long hall some 3 m. wide along the west. Investigation with the aid of the Galeazzi disclosed that a flight of steps descends into the central space from the preserved top of the wall separating it from the west hall, to a floor about 1 m. below sea level. The steps were lined with marble revetment. Investigation at the juncture of the apse and the central quadrangular space showed that the floor of the apse is paved with slabs of vari-colored marble in geometric patterns and the floor of the quadrangular space is paved with mosaic — so far as ascertained presenting only a very simple geometric pattern. On the floor lies a mass of debris on top of which, exactly at sea level, there was once a floor whose coarse cement foundations are preserved over much of the area.

In the debris which was removed in the operation disclosing the lower floors, amounting to about three cubic meters, were found a wooden chair, or bench; many fragments of ivory carved as miniature architectural members — column capitals and bases and mouldings of various kinds; many fragments of a large sheet or sheets of tortoise shell, engraved with figures (P I. 136 a), though not enough was recovered to establish the whole design; and large amounts of opus sectile. The opus sectile is made of thin cut-out sheets of vari-colored marble and glass, with ribbon-like lines of glass strands, mounted on a heavy mud-mortar, including large sherds from coarse pots, the whole affixed to wooden lath. Many small fragments of this work were found, and at least one slab some 2 m. long and 0,60 m. high — the latter lying at an angle on the floor as though it were topmost in a stack of such slabs piled in the corner of the room. The design of the opus sectile is worked out in long horizontal bands. One is completely preserved on the exposed slab, and depicts ibis birds walking in a swamp with lotus and papyrus plants (P I. 136 b). The lower edge of the band above is barely preserved, and traces of what may have been a crocodile ap-

pear in it. Under all the circumstances it seems a reasonable inference that the opus sectile, perhaps most of the other material found with it, and the buildings in the vicinity, all belong in some way or other to the sanctuary of Isis mentioned by Pausanias and Apuleius. When the deposit was laid down and perhaps sealed by the higher floor at sea level is not fully established. A lamp of the first half of the fourth century A. D. found almost at the surface may offer a clue. But excavation of the deposit was postponed in order to make possible more complete preparation for the preservation of the materials.

Just to the west of this, immediately on shore, the area excavated in 1963, some 50 by 35 m., was slightly enlarged to the west and some detailed explorations were made within the previously exposed area. Substantially all of this is covered by an early church and its dependencies. Beneath the church, along the side toward the harbor, are the remains of parts of the warehouse, many of which were incorporated into the church. It now appears, however, that parts of the warehouse had been demolished to allow for the construction of some late Roman structures before the church was built. Among these Roman structures must, apparently, now be counted the westernmost of the two apses in the line of the nave of the church, although in the report of 1963 it was assumed that this apse was part of a late reconstruction of the church. It is almost certainly, however, earlier than the eastern of the two apses in question, and may indeed belong to the sanctuary of Isis. Other details of the chronology of structures earlier than the church still remain confused.

Little else was added in 1964 to the understanding of the complexities of the church itself, which are, however, too intricate to describe in a brief report. The most important contribution to the study of the church was made in the slight extension of the excavation to the west, where a «phiale» was disclosed, built within some of the well preserved walls of the earlier warehouse. It consisted of a rectangular marble-lined basin with a canopy in front (to the west). The canopy was supported on four columns, of which the bases remain; between the columns were screens supported on sills cut from other columns; at the front was an elaborate door or gate. All of this construction was set down into a fine mosaic floor of earlier date, though it would appear that this floor was in

general preserved and used at the period of the phiale.

In addition to the work in the area of the town itself, a monument some 750 m. north of the harbor on the coast was examined. This had been located in 1963, and from the substantial character of the masonry visible had been thought to be a temple. As partially cleared in 1964, however, it appears to be a large monument, some 10.50 m. square, built of heavy poros blocks and faced with marble. At the bottom is preserved a marble step on which rested a bench. From fragments of marble discovered in the debris it may be inferred that above this rose a podium crowned by a cornice; above the cornice was a fine guilloche moulding, evidently marking the base of a tall rectangular shaft which in turn was crowned by a finely carved cornice of which a magnificent block is preserved (Pl. 136 c). Numerous fragments of an extensive Latin inscription were found in front, though neither its restoration nor its original location have been determined. No external evidence for the date of the structure has been found, and visiting experts have dated the cornice variously to the first and the second century A.D. The monument evidently replaced an earlier structure, built of poros blocks and faced with plaster; the later monument was built around this, the space between being filled with small stones set in mortar. The monument stood in a roughly rectangular flat open area bounded on the south by a long narrow building with a large marble threshold. The purpose of the structure has not been determined.

Apart from the deposit in the apsidal enclosure associated with the sanctuary of Isis, in Area A, there were few individual objects of great intrinsic interest discovered, though the Roman pottery, glass and lamps, when studied, may well prove to be of considerable importance.

In general, considerable progress was made in the objectives of the enterprise, though the difficulties of getting at remains of the pre-Roman period, whether on land or in the sea, grow ever more baffling.

R. L. SCRANTON — E. S. RAMAGE

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PERACHORA, THE HERAION

The British School has now in hand the publication of more detailed accounts of those buildings excavated at the Heraion which were only summarily described by Humfry Payne in *Perachora* I. First to appear is Mr. J. J. Coulton's account of the stoa by the harbour (*BSA* 59, ff.). In 1964, in connection with this programme, cleaning and further study were undertaken in two areas: the house remains in the flat ground above the sanctuaries, by the writer, and the «Agora» adjoining the Archaic temple, by Mr. Coulton.

In the area of the houses (Plan 1) the purpose was to clear the visible remains of walls, re-survey them, and to make soundings in selected buildings in an attempt to establish the chronology. Work was based on the published survey of the town (*Perachora* I, pl. 137), which seemed to indicate that walls were numerous and clearly visible, and required only minor clearing to reveal separate structures. In the event this was not found to be the case. In particular, the area round the word «houses» on the Payne plan which promised houses and streets on a regular alignment produced only a few isolated blocks. Much of the surface remains shown on the Payne plan must therefore have been destroyed.

In the area further to the east several sets of foundations were clear (e.g. those around house B). Other walls, partially cleared with some difficulty in the undergrowth and shrubs turned out to be terrace walls. Other foundations on the slopes here were cleared and their plans satisfactorily revealed, but in general the depth of soil above bedrock is meagre in the extreme. One house, fortunately, was overlaid in antiquity by a later house, and a fair depth of soil gave more scope for study. The walls uncovered proved to be the northern half of a westward facing megaron of strictly rectangular plan. A beaten earth floor sealed a quantity of Proto-corinthian pottery, and on it was found a bronze «spit». A total absence of tile fragments (common in the other structures on the site) suggests that this house was thatched. There are obvious connections with the building model from the Heraion. We found no trace of timber columns.

The structure which partly covered this early building seems to have been a courtyard house. Pottery found here is inconclusive for dating;



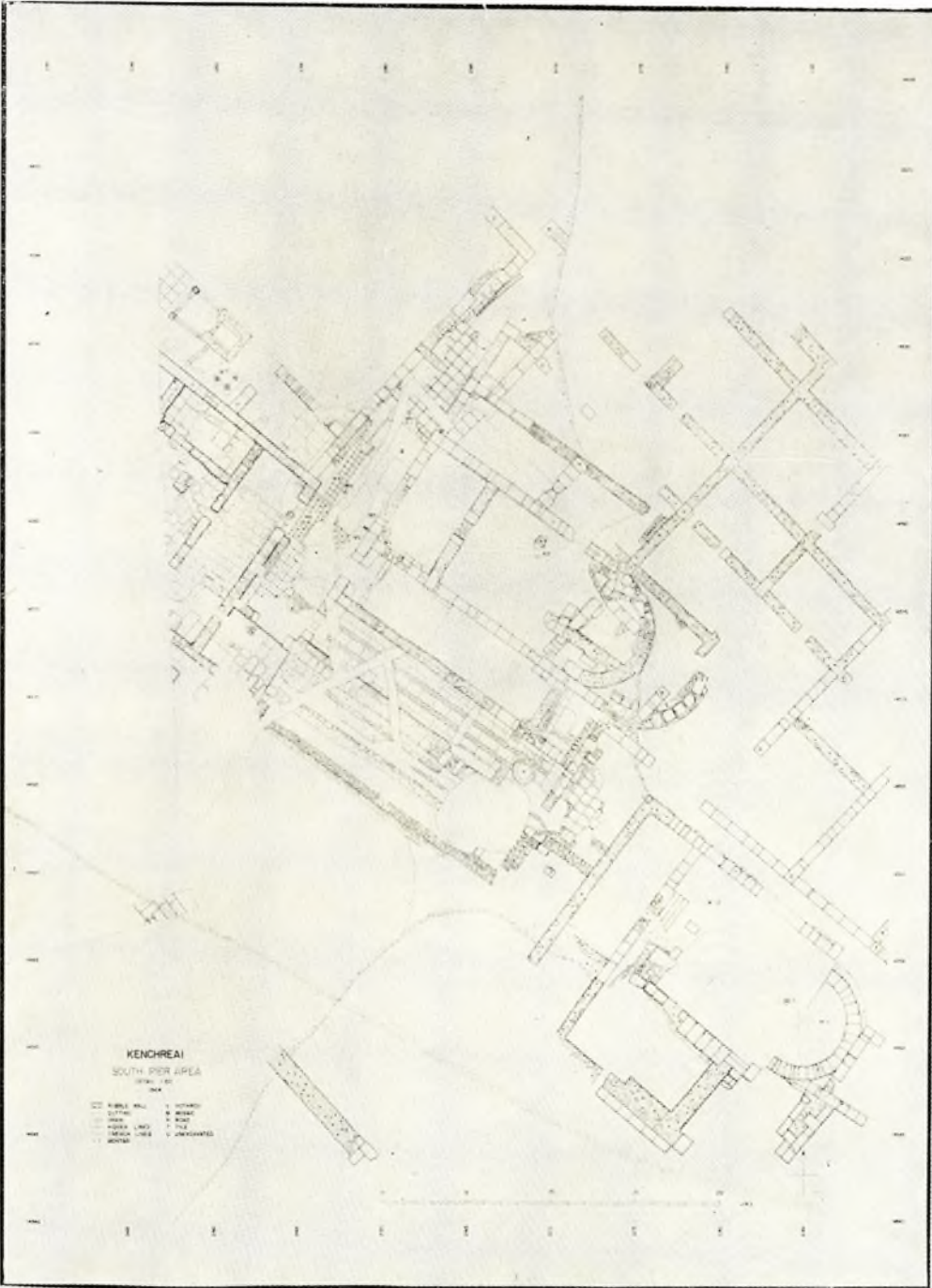
Kenchreai: a. Area C from North. Brick Building in Foreground, b. Area A from Northwest. Looking over Church toward Submerged Remains of Sanctuary

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Kenchreai: a. Fragment of Engraved Tortoise Shell, b. Slab of Opus Sectile with Ibis, Lotus, Papyrus (Photographed under Water), c. Cornice from Roman Monument. North of Harbor

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Kenchreai: Southwest End of Harbor main Excavation (Area A)

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