

EXCAVATIONS AT PORTO CHELI AND VICINITY PRELIMINARY REPORT IV: THE LOWER TOWN OF HALIEIS, 1970-1977.

(PLATES 87-89)

Previous reports on these excavations:

- Report I:* Michael H. Jameson, "Excavations at Porto Cheli and Vicinity, Preliminary Report, I: Halieis 1962-1968," *Hesperia* 37, 1969, pp. 311-342.
- Report III:* W. W. Rudolph, "Excavations at Porto Cheli and Vicinity, Preliminary Report, III: "Excavations at Metochi 1970," *Hesperia* 43, 1974, pp. 105-131.
- Final Report 1970:* M. H. Jameson, Δελτ 26, B', 1971 (1974), pp. 114-119.
- Final Report 1971:* M. H. Jameson, Δελτ 27, B', 1972 (1976), pp. 233-236.
- Final Report 1972:* W. W. Rudolph, Δελτ 28, B', 1973 (1977), pp. 159-163.
- Final Report 1973:* M. H. Jameson, Δελτ, Χρονικά (in press).
- Final Report 1974:* W. W. Rudolph, Δελτ, Χρονικά (in press).
- Final Report 1975:* W. W. Rudolph, Δελτ, Χρονικά (in press).
- Final Report 1976:* W. W. Rudolph, Δελτ, Χρονικά (in press).

Abbreviated versions of these reports have already appeared in *BCH*, "Chronique des Fouilles" and in *JHS*, *Archaeological Reports*.

INTRODUCTION

THE Halieis Excavations have reached the stage where preparations for final publication have begun.¹ To compensate for the inevitable delay, this and following preliminary reports are intended to provide a first overview of the excavation results and activities and to invite comments and discussion as well. The goal of the Halieis Excavations—which see themselves as a large component in the general sur-

¹ The excavations at Halieis were carried out under the auspices of the American School of Classical Studies under the successive directorships of Henry S. Robinson and James R. McCredie. They were conducted by the Program in Classical Archaeology of Indiana University and the Department of Classics and the University Museum of the University of Pennsylvania. The supervising agency for the Greek Archaeological Service was the 4th Ephoria Argolid-Korinthia. For their assistance we wish to express our gratitude to the late Ephors N. Verdelis and S. Charitonides. In recent years we are much indebted to Mrs. Th. Karageorga and Ch. Kritzas, but above all to Mrs. E. Protonotariou-Deilaki, who has shown a particular interest in the problems of the excavations.

Much of this work was made possible through the assistance of a research grant from the National Endowment for the Humanities. The findings and conclusions presented here do not necessarily represent the views of the Endowment. Major support came also from the E. A. Schrader Endowment for Classical Archaeology, Bloomington, Indiana, as well as from both universities. The Ford Foundation, New York, N. Y. provided Archaeological Traineeships, and Esso Pappas, Greece helped defray the cost of land transportation. Among numerous individual

vey of the Southern Argolid—is to present an over-all idea of the existence of a small, provincial town in one of the heartlands of Greece during the Archaic and Classical periods. To this extent the preliminary reports are but an introduction to the history of the city and its region, a sketch which may be subject to certain reviews.

This report deals with the town exclusively, as it is defined by its outer wall which contained the regular living quarters for the citizens of the *polis*. Parts of the results of earlier campaigns have already appeared, including excavations on the Acropolis, on the Industrial Terrace, and in the Lower Town.² To make clear the principal stratigraphic sequence in the Lower Town of Halieis a short résumé of the main levels is given below. This sequence moves from the top down, does not take into account possible subdivisions, and is valid, at least at present, for the Lower Town only.

LATE ROMAN LEVEL

Ca. 4th/5th to early 7th centuries after Christ, concentrated in the present central part of the littoral plain; re-use of existing house plans (?), building of a bath. Two burial grounds to the southeast and southwest have been located, still at least partially within the defensive wall of the Classical city.

LEVEL A

Ca. 350 to *ca.* 300 B.C., extending throughout the whole Lower Town, including the western sector. City wall and regular city plan.

donors we wish to thank especially Mr. Baird-Smith, Porto Cheli, and Mr. Thomas T. Solley, Bloomington, Indiana.

The principal staff members during the campaigns 1970-1976 were
 Field Director: Wolf W. Rudolph. Architecture: Frederick A. Cooper, Nancy K. Cooper, Marian H. McAllister, David Blackwell and Thomas D. Boyd (Assistant Field Director since 1975). Conservation: Steve Koob, Nicholas Didaskalou. Photography: Reginald Heron (Director of Photographic Operations since 1972), Charles D. Gold, Judy Durick, Michael Moore, Graydon Wood. Balloon Photography: Julian and Eunice Whittlesey, Will and Elly Myers. Drawing: Martha Breen, Ingrid Keller. Ecology: David Harper. General Staff: Janice Bennett, Philip Betancourt, Susan Blackwell, Harriet Blitzer, Diana Bowler, Shelby Brown, Philippa Buhayar, Peter Calengas, Jeff Danielson, James Dengate, Christina Dengate, Steve Diamant, Gregory Elftman, Jerry Forney, Michael Fotiades, Dianne Frost-Larsen, Stockton Garver, John Goodheart, Ortolf von Harl, Randy Helm, Ninette Heron, Thomas Hitzl, John Humphrey, Steven Hutzl, Louis Jerkich, Judy Jerkich, Donald Keller, Arcadia Kocybala, Laetitia LaFollette, Susan Langdon, Joan Langdon-Mastronarde, Jane Leslie, Jackie Linker, Brian MacDonald, Priscilla Murray, Jan Østergaard, Karl Petruso, Nancy Petruso, Diane Price, Birgitta Rafn, Evelyne Rudolph, Curtis Runnels, David Rupp, Diane Seider, Nancy Skon, Lone Sørensen, Georgia Strange, Terry Tinker, David Walton, Fred A. Winter. Geology: Robert Giegengack. In the 1975 campaign David Rupp directed the Brock University Archaeological Practicum, a group of a dozen volunteers, who assisted in a major way with the excavations in Area 7. We wish to thank these and all others whose names have been mentioned in other reports for their steady and fruitful efforts and for the smooth running of the excavations, even in the crisis year of 1974.

² *Report I*. A summary of the situation in the Lower Town, where work had concentrated since 1970, appears in *Final Report 1975*, and an abbreviated version of this appears in *BCH* 100, 1976, pp. 610-614.

LEVEL B

Ca. 400 to *ca.* 350 B.C., extending certainly throughout the eastern half of the Lower Town, possibly also throughout the western sector. City wall and regular city plan.

LEVEL C

First half of the 6th century (?) to *ca.* 460 B.C., extent as Level B. City defenses and first organization of city plan (hypothetical).

LEVEL D

Ca. 700 to first half of the 6th century B.C. (?), extent unknown, possibly corresponding to Levels B and C. City defenses, other evidence widely scattered and scanty.

The following discussions of problems concern the layout of the city and frequently refer to particular parts of the excavations. To provide for easier cross-referencing, the following numbered areas have been designated as shown in Figure 1. The numbers in brackets refer to the years of excavation within each area.

AREA 1

Tower 10 and vicinity to the East Gate with the exit of Avenue B. (1968-1970)

AREA 2

The eastern half of Field 7 on the upper terraces of the southeastern stretches of the city wall.³ (1970)

AREA 3

The western part of Field 7 on the terraces below the Acropolis, above the first large escarpment, approximately midway along the inner city wall. (1970)

AREA 4

Field 2, in the western part of the city, test trenches near the shore. (1962)

AREA 5

Field 10, in the central part of the Lower Town. (1972)

AREA 6

Field 24, a long strip of land extending southward from the shore in the northeastern quarter of the city. (1962, 1972-1976)

AREA 7

Field 27, at the Southeast Gate and the exit of Avenue C. (1972-1976)

The road designations are explained by T. Boyd, below. Houses are numbered for Area 6 only, for only there is it certain that more than one house has been excavated. The underlying system for the recording of all architectural remains and of all excavated finds adopted in 1972 is based on the coordinates of the Greek Geo-

³ Field numbers refer to the numbers assigned to the plots owned by individuals on the map of the Archaeological Zone Halieis, drawn up by the Greek Archaeological Service.

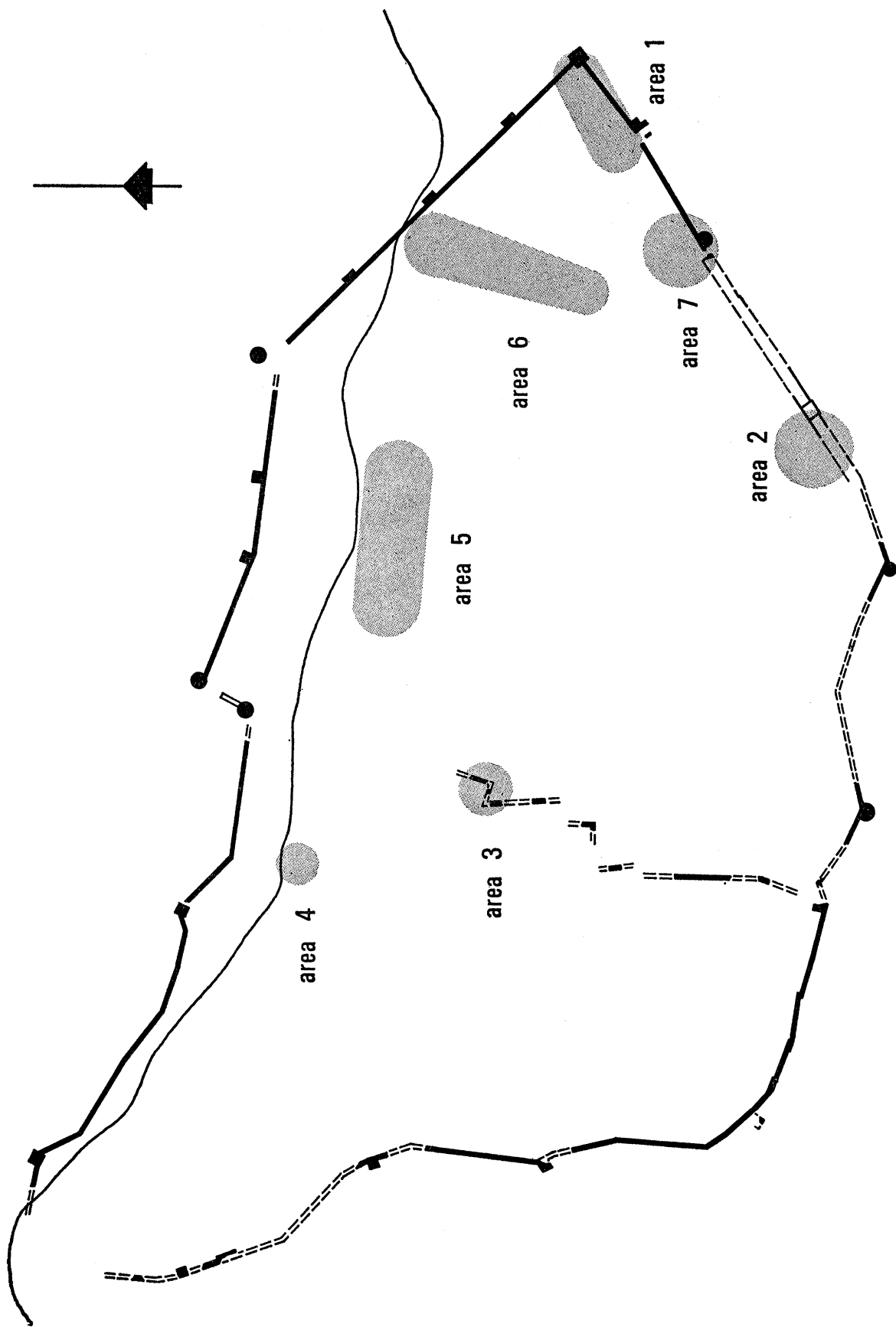


FIG. 1. Location of excavation Areas 1-7.

graphical Survey. This system also supplied the designation for the numerical coding of the trenches, which are normally 5 by 5 meters square, laid out according to the compass. The trench numbers used in the reports refer to this system. The establishment and constant maintenance of the system on the site was primarily the work of Professor Frederick A. Cooper of the University of Minnesota. His untiring efforts were supplemented in equal spirit by T. Boyd, N. Cooper, M. H. McAllister and, in 1970, by D. Blackwell. Without the professional skills of this crew the results to be set forth here would not have been obtained.

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THE LAYOUT OF THE CITY⁴

This report is limited to the last century or so of habitation at Halieis before it was abandoned about 300 B.C. The excavations have concentrated on post-5th century levels, though earlier levels going back as far as the 7th century have been explored on a smaller scale. There is some evidence to indicate that there was a destruction about 350 B.C., but the architectural organization remained basically the same. In the eastern half of the city, at least, a gap in occupation is indicated by a complete lack of finds assignable to the second half of the 5th century. The problems of chronology are complex, and the historical implications indicate that many difficulties are yet to be resolved. Future reports in this series will address themselves, in part, to some of these problems.

The recovery of the plan of Halieis is based upon a detailed survey of the excavated remains and of unexcavated wall foundations located throughout the city. Much of the basic topography of the city was established in other years, and was published in an earlier report.⁵ A major effort to locate all visible architectural traces within the city was undertaken between 1970 and 1975,⁶ during which time also the excavated remains were incorporated into the topographic survey. The balloon photographs taken by the Whittlesey Foundation have also proved invaluable in recording details of the topography of Halieis. In 1977 a detailed re-examination of the submerged remains in the northwestern part of the city was also undertaken, with significant results.⁷ A plan of the city at a scale of 1:500 was prepared from the results of this work, and from this a photomechanically reduced version was obtained at a scale of 1:1000. The latter was adapted for publication and appears here, further reduced, as Plate 87.

The fortifications of Halieis enclose an area of approximately 18 hectares. From the Acropolis, approximately 50 meters in elevation above the harbor, the city spreads fanlike in a northerly direction, extending down to the shore. Gates have been identified at a number of points in the trace of the defensive wall. In the eastern stretches the precise location of two gates has been determined, labeled the East Gate and the Southeast Gate. The former has been known for some time, its foundations being clearly visible in a vineyard. The latter was discovered through more recent surface reconnaissance, and was subsequently excavated. In the northern stretches of the

⁴ I would like to offer special thanks to J. Walter Graham, Marian H. McAllister and Charles K. Williams, II for their invaluable discussion and criticisms of the information and ideas presented in this report.

⁵ *Report I*, especially fig. 2.

⁶ For the organization and execution of the topographic survey of the site and its immediate environs in those years, the project owes a considerable debt of gratitude to Professor Cooper. This work was in addition to and in conjunction with his establishment and maintenance of our geographic coding system, described above.

⁷ The foundations in shallow water south of Avenue I were seen to be more extensive than was indicated on earlier plans of the site, and so these were recorded by transit and tape.

city wall there appear to have been four gates. The largest of these, the Harbor Gate, was cleared in 1967 and 1968.⁸ The Hermione Gate, located *ca.* 180 m. east of the Harbor Gate, has not been clarified in detail, for a Roman bath was built over it in late antiquity. The position of the round tower with respect to the trace of the city wall suggests that there was a gate here. Furthermore, balloon photographs and underwater investigation indicate a road outside the Hermione Gate.⁹ Two sally-ports have been identified, beside Towers 13 and 16 respectively.

From the cumulative results of excavations since 1962 in various parts of the city it has become apparent that Halieis was laid out, at least in part, according to a system which approximates an orthogonal plan. Numerous streets and avenues have been located through excavation, and from these the location of several others can be proposed with a fair degree of confidence. The broader of these, oriented approximately southeast to northwest, have been termed avenues. Two, here labeled Avenues B and C, are known through excavation, while Avenue A may be proposed on the basis of remains visible under water. It is indicated by a continuous strip, free of any foundations, running against the interior face of the city wall between the Hermione Gate and the Mint.¹⁰ We have assumed that Avenue A then resumes its course southeast of the Mint, continuing to Tower 10, where it turns to the southwest and becomes Street 1, which will be discussed below.

Avenue B leads from the East Gate to the vicinity of the Hermione Gate. It is not parallel to Avenue A, but converges toward it in the direction of the Hermione Gate. Excavations confirmed the presence of road metal at the interior of the East Gate, and a test trench located *ca.* 15 m. northwest of the same gate revealed the continuation of the metaled road, with wheel ruts clearly visible in the hard-packed gravel surface. The further continuation of Avenue B was located in the course of excavations in Area 6 where, approximately 100 m. northwest of the East Gate, a 22 m. length of the avenue was exposed. The width of Avenue B in Area 6 varies from 3.55 m. to 4.20 m. The avenue is lined on both sides by the remains of houses, to be discussed below.

Avenue C proceeds into the city from the Southeast Gate, likewise in a northwesterly direction, but it is not parallel to Avenue B. It has been exposed over a 20 m. stretch inside the gate, and also consists of a hard-packed gravel surface in which wheel ruts are clearly visible. Just as Avenue B, this avenue was found to vary in width, in this case from 4.50 m. to 5.05 m. By contrast, the passageway through the Southeast Gate is but 2.30 m. wide. The precise course of Avenue C further to

⁸ *Report I*, pp. 333-337.

⁹ *Ibid.*, pls. 90, 91: c.

¹⁰ This building, set against the interior face of the city wall, has been known since the 1962 campaign: *ibid.*, pp. 329-330. Its identification as the mint of Halieis is the result of more recent work, and will be discussed in a subsequent report. It should be noted that it seems entirely possible that this building served other functions as well, and that coinage was minted here only as required.

the northwest is a matter of speculation. No apparent continuation of this avenue was encountered at the extreme south end of Area 6, and it has been assumed that Avenue C passed just to the south of it. Whether it continued in the same direction west of Area 6 or turned slightly so as to become parallel to Avenue B is also a matter of speculation.

Four streets at approximately right angles to Avenues A, B and C have been discovered through excavation. The easternmost of these, labeled Street 1, runs along the interior face of the city wall between Areas 1 and 2, and joins Avenue A at Tower 10. Two streets were exposed in Area 6, roughly parallel to one another and to Street 1. That closer to Street 1 is not perfectly straight, but bends back and forth slightly between Avenues B and C. Like Avenues B and C it varies in width, in this case between 2.50 m. and 2.80 m. The second street in Area 6 was found to intersect Avenue B at a point approximately 100 m. northwest of the East Gate. It varies in width also, from 2.60 m. to 2.80 m. The distance between these two streets in Area 6, from the center of one to the projected center of the other, varies slightly, due to the meandering course of that closer to Street 1, between 30.5 and 31.5 m. This is approximately half the distance from the center of Street 1 to the center of the easterly of the streets in Area 6, and a third of the distance from the center of Street 1 to that of the westerly. Therefore, it is proposed that there was an additional street between Street 1 and the easterly of those in Area 6, equidistant from each. This hypothetical street will then be Street 2, while those in Area 6 will be Streets 3 and 4.

In the course of test excavations in Area 5, a short section of a street was found, parallel to Streets 1 through 4. From its center the distance to the center of Street 4 is *ca.* 95 m., and to the center of Street 1 at the Southeast Gate the distance is twice that, or *ca.* 190 m. It is proposed, therefore, that there were two additional streets between Street 4 and that in Area 5, spaced equidistantly. These will be Streets 5 and 6, and that in Area 5 will be Street 7. The average distance between the centers of each of these seven streets will be one sixth of the 190 m. separating Streets 1 and 7, or approximately 31.7 m. This figure coincides reasonably well with the distance between the centers of Streets 3 and 4. Finally, a street is proposed to the northwest of Street 7, and is labeled Street 8. Using the module just established, the derived location of Street 8 coincides well with the position of the Hermione Gate.

This interval between streets attracts further attention, for this dimension comes tantalizingly close to the metric equivalent of 100 Greek feet. We suggest, therefore, that a foot *ca.* 0.317 m. in length was used for the layout of the streets of Halieis.¹¹ A certain lack of concern for precision in the layout of Halieis is apparent,

¹¹ The derived unit of 0.317 m. is somewhat smaller than the supposed equivalent of 0.326-0.328 m. for the Doric foot. There appears to be sufficient evidence that the Doric foot was not as universal as has been suggested. In Dorian territory a foot as small as 0.273 m. has been established for the Archaic Temple of Apollo at Halieis, and as great as 0.334 m. for the Iktnian Temple of Apollo at Bassai. Thanks are due Professor Cooper for drawing attention to these

indicated by the meandering course of some streets and avenues, and by the non-parallel layout of the known avenues. It seems fruitless to attempt to determine the length of the foot employed in the layout of the city to any higher degree of precision at this time. Furthermore, it does not seem productive to attempt to identify this derived unit of *ca.* 0.317 m. with units of linear measurement found to have been in use elsewhere at any given time at any given site. The opinion that a particular standard was used for an individual building (or, in the case of Halieis, a program of land division) and not necessarily for any other, even if contemporary and on the same site, seems a reasonable view.¹²

While the streets in the eastern quarter of Halieis may be assumed to have been set 100 feet apart, the interval between avenues cannot be clarified properly, since they are not parallel to one another. Along Street 1 the distance from the center of Avenue B to that of Avenue C is *ca.* 75 m., or *ca.* 237 feet of 0.317 m. each. Along Street 3, however, the equivalent distance will be in the order of 89 m., or *ca.* 281 feet. At this time further excavation seems unlikely, and so it does not appear possible to clarify the lengths of the insulae, and therefore to determine the proportions of width to length as has been possible elsewhere.¹³

The recognition of an orthogonal layout of streets and avenues in the north-eastern part of the city has led to a search for additional insulae, similarly organized, elsewhere in the city. The slope upward from the shore to the Industrial Terrace and the Acropolis in the eastern half of the city is relatively gentle until about the 20 m. contour. At about this point the gradual slope is interrupted sharply by a rocky escarpment, above which the site slopes upward at a greater rate to the Acropolis. As a result of the completion of the topographic survey of Halieis, it is clear that the majority of visible wall foundations in the eastern half of the city below the escarpment are oriented either northwest-southeast or northeast-southwest; in other words, they conform to the general orientation of the known streets and avenues. Below the escarpment, in the vicinity of the 15 m. contour, one might expect to find yet another avenue, roughly parallel to Avenues A, B, and C. It would extend from Street 1 in Area 2 towards the northwest, perhaps as far as a projected southwesterly extension of Street 6 or 7. If we assume the existence of this hypothetical avenue, which would be labeled Avenue D, we would also assume that the streets continued well to the south of Avenue C, for indeed the extension of Street 1 into Area 2 has already been confirmed. One might also assume that these streets continued beyond Avenue D and terminated at the rocky escarpment.

One anomaly upsets the logic of this hypothetical layout to the southwest of

extremes, and for making possible their mention in this report. The discussion of the Greek foot in J. E. Jones, *et al.*, "An Attic Country House below the Cave of Pan at Vari," *BSA* 68, 1973, pp. 422-424, is also useful in this regard.

¹² *Ibid.*, pp. 422-423, note 159.

¹³ J. Walter Graham, "Notes on Houses and Housing Districts at Abdera and Himera," *AJA* 76, 1972, p. 300.

Avenue C. A group of foundations, measuring at least 14 m. by 50 m., and located approximately 100 m. west of the Southeast Gate, conforms neither to the general orientation of the known streets and avenues nor to that of the great majority of other visible traces of walls in this sector. On the other hand, this group of foundations conforms well with the orientation of Avenue C. The considerable extent of this complex seems to suggest that Street 4, and perhaps Street 3 also, bend at their respective intersections with Avenue C so as to conform on the southwest side of that avenue with this variant orientation. The meager evidence at hand, based upon the topographic survey and not upon excavation, makes it difficult to assess the effect of this group of foundations on the layout of the city in this sector.

To the west of Street 8, in Area 5, a distinct shift in the general orientation of visible wall foundations takes place. From here, and extending westward for approximately 300 m., the orientation remains fairly consistent. We surmise, therefore, that an orthogonal layout of streets and avenues existed in the lower or northern part of Halieis west of Street 8, but with an orientation different from that of the eastern part of the city. An examination of the submerged remains in the northwestern part has resulted in a partial reconstruction of the layout of streets and avenues in that sector.

The submerged avenue, now labeled Avenue I, was recognized following the survey of this sector carried out between 1965 and 1968.¹⁴ Between Avenue I and the city wall two passageways set *ca.* 32 m. apart are discernible between building foundations, and intersect the avenue at approximately right angles. The interval separating them is sufficiently close to the *ca.* 31.7 m. interval between streets in the eastern part of the city to permit the tentative identification of these passageways as streets laid out according to a system similar to that employed for Streets 1 through 8. Accordingly, they have been labeled Streets a and b. The width of Street a measures *ca.* 2.0 m., while that of Street b measures *ca.* 3.5 m. The north end of Street b leads to a secondary gate or sally port in the city wall, an observation which supports the identification of a street in this location.

Following the re-examination of the submerged remains on the opposite or southern side of Avenue I in 1977, it was found that Streets a and b could be traced as far south as the modern shoreline. Here, they are set 31.5 m. apart, and each measures *ca.* 2.5 m. in width. At that time also, it was found that at distances of 30.5 and 61 m. respectively, east of Street b, there are additional passageways indicated by the visible foundations, and parallel to Streets a and b. These have been labeled Streets c and d, and measure *ca.* 2.5 m. and *ca.* 2.4 m. in width, respectively. The foundations of walls on land further to the south appear to agree well with the projected lines of these streets. Additional evidence was discovered in 1977 which lends considerable weight to the identification of these passageways as streets. On the west side of Street c, *ca.* 12 m. south of its intersection with Avenue I, a *prothyron*

¹⁴ *Report I*, p. 328.

entranceway was found (Pl. 89:a), apparently that of a house. This includes an anta base marking the southern jamb of the outer doorway, just as in House C in Area 6, to be discussed below. This *prothyron* entranceway on Street c displays the same basic characteristics as the entranceways to all but one of the houses excavated in the eastern part of the city. Consequently, the foregoing details of the orthogonal layout of the western part of Halieis are proposed with little reservation.

If we accept Streets a through d, we would expect to find as many as five streets, parallel to these, between Street d and Street 8. It is to the west of Street 8 that we perceive the general shift in the orientation of wall foundations from that of the eastern part of the city to that of the western part. We do not, on the other hand, propose the existence of streets parallel to Street a and to the west of it, for there the terrain is less suited to orthogonal planning, and furthermore the visible foundations do not agree with the orientation of Streets a through d. It seems reasonable to suppose that there was an additional avenue, however, perhaps as much as 90 m. to the south of Avenue I and parallel to it. Since it is not possible at this time to determine a standard length for the insulae in the eastern part of Halieis, the location of this hypothetical Avenue II is not shown. Likewise, the details of the transition from the orientation of Streets 1 through 8 to that of the streets in the western part of the city are not shown. It is tempting to suggest, however, that it is not inconceivable that Avenue C, if extended to the northwest, might find its continuation in Avenue I. The somewhat casual attitude with regard to straight lines and right angles apparent at Halieis would seem to permit enough flexibility in the layout to admit this possibility. It is also possible that Street 8 and Avenue I intersect. If this is the case, the route of Avenue C in that same region may prove to have been somewhat different. It is difficult to resist one last suggestion. It would seem that Avenues D and II as proposed here (both are hypothetical) would probably join and form one thoroughfare.

The upper, or southern reaches of the city, particularly above the 20 m. contour, must remain outside any discussion of the formal layout of Halieis. Foundations of walls are visible, but they suggest no consistent pattern. The buildings excavated on the Industrial Terrace appear to be separated by several narrow lanes, but the area excavated is insufficient to lead to the recognition of a street pattern applicable to the over-all upper reaches of the city. The buildings excavated on the Acropolis demonstrate a different orientation from that of the Industrial Terrace, and here too no regular street pattern can be discerned.

The orthogonal layout of Halieis can only be demonstrated in the lower half of the city, where our anonymous planner divided the city into at least two zones of insulae. The trace of the fortification and dictates of terrain appear to have led to the decision to break the continuity. Though it is perhaps the least sophisticated such plan known from Classical antiquity, at the same time it demonstrates a heretofore unsuspected application of orthogonal planning in mainland Greece.

The date of the layout of Halieis is, at present, a vexing problem. Too little of the pre-4th century levels has been explored to permit at this time a definitive statement on the street layout in the Archaic and early Classical periods. In a series of tests under the road metal carried out in Areas 6 and 7,¹⁵ architectural remains were encountered in only one instance. At the intersection of Avenue B and Street 4 a crude rubble wall was exposed. In every other instance the fill below the road metal produced only a few sherds, and these appear to be of the 4th century. Further down, the fill was found to be uniform, a reddish, gravelly soil, apparently sterile up to a meter below the bottom of the road metal. While this perhaps suggests that the streets were laid out in the 4th century, it is also important to recognize another factor. The Archaic and early Classical architectural remains exposed in Areas 6 and 7, that is, those of the period prior to the apparent gap in the occupation of the lower town in the second half of the 5th century, follow the same orientation as those of the 4th century planned city.

AREA 1

THE DOMESTIC ARCHITECTURE

Between Tower 10 and the East Gate the remains of at least one, perhaps two houses were explored, but only in part. These represent habitation levels of the 4th century, though deep soundings revealed foundations which can be associated with the Archaic and early Classical periods. The most significant architectural feature encountered there was the first of several entrances of the *prothyron* type at Halieis.¹⁶ The entrance is 2 meters removed from the interior face of the city wall, this space representing the course of Street 1.

AREA 2

Several test trenches were dug in the vicinity of Tower 8. A short section of Street 1 was exposed along the interior face of the fortifications. Again, the remains of one or more houses were explored in this series of tests. One such trench revealed a room with a well-built floor, into which was set a relatively shallow storage basin. This room is tentatively identified as a kitchen. The entrance to a house, not necessarily that containing the room just described, was found facing Street 1. Too little of the entrance was exposed to determine whether or not this entrance was of the *prothyron* type.

¹⁵ The road metal was found to consist of an extremely hard layer of compacted gravel, and to vary in thickness from *ca.* 0.30 to *ca.* 0.45 m. As a measure of its hardness, testing through the road metal could only be carried out by the use of a pneumatic drill (jackhammer), rented locally.

¹⁶ All entrances but one to the houses at Halieis discovered thus far appear to be of the *prothyron* configuration. It is common elsewhere, especially at Olynthos: David M. Robinson and J. Walter Graham, *Excavations at Olynthos*, VIII, *The Hellenic House*, Baltimore 1938, pp. 154-156. Those at Halieis are decidedly shallower than those at Olynthos, it should be noted.

AREA 3

Here, a modest area was excavated with the initial purpose of exploring what were thought to be traces of a defensive wall dividing the city into eastern and western halves. The presence of such a wall was confirmed, and at least two phases of adjacent structures were also excavated. The wall was found to have been constructed about 350 B.C. over the foundations of earlier buildings. The identification as houses of the structures other than the wall is dubious, though at this time we refrain from attempting alternative explanations of their function.

AREA 4

Excavations here were conducted in 1962 and were the subject of an earlier preliminary report.¹⁷ Two additional observations are offered at this time. Though not excavated in its entirety, it is clear that the remains are those of a house. It now seems most likely that the house was entered from Street d, though the excavations of 1962 did not extend far enough to the east to confirm or deny this. Also of interest is the grouping of four rooms which form a unit. This unit perhaps represents an example of the *prosta*s format first identified at Priene, and later at Kolophon, Abdera and elsewhere.¹⁸ The identification of this group of rooms as a *prosta*s unit is not certain, and their arrangement may in fact bear no more than a superficial resemblance to the *prosta*s type of room grouping.¹⁹

AREA 5

No comprehensive architectural remains were excavated in this area, the subject of test excavations in the 1972 campaign. For the most part, excavations here proved difficult due to the high water table, the area being adjacent to the modern shoreline. Considerable Roman remains were encountered, but discussion of these is reserved for a subsequent report in this series. A short section of Street 7 was excavated, and near by, to the west of this street, a handsome *andron* was also explored, with a low, raised platform *ca.* 0.90 m. wide running around the perimeter. The Classical remains in Area 5 for the most part represent habitation quarters. Due to the intentional scatter of trenches in that campaign no other readily identifiable architectural forms were encountered.

¹⁷ *Report I*, p. 328.

¹⁸ Cf. Graham, *op. cit.* (footnote 13 above), pp. 296-299.

¹⁹ Though the grouping of the four rooms is quite similar to that of *prosta*s units elsewhere, two points of variance should be noted. Firstly, if room 1, the largest apart from the *prosta*s (?), room 2, is to be identified as the *oikos*, then the *prosta*s itself is not entered opposite the entrance to the *oikos*, as it is in all other known instances. If room 4 were to be identified as the *oikos* this condition would be satisfied, but room 4 seems unsuitably small to serve as the *oikos*, the principal room in such a unit. Secondly, if the unit faces east, as it would with room 1 as the *oikos*, or north, as it would with room 4 as the *oikos*, the precepts of Aristotle and Xenophon are violated insofar as the unit does not face south so as to capture the sun in winter and to be sheltered from the north wind at the same time: see Robinson and Graham, *op. cit.* (footnote 16 above), pp. 144-146 in this regard.



FIG. 2. Plan of Areas 6 and 7.

AREA 6 (Fig. 2)

The most comprehensive architectural remains excavated to date at Halieis are here, in a field some 110 m. long and varying in width from 10 m. at its southern end to 24 m. at its northern. The Mint of Halieis is located in the northeast corner of this area; all other remains represent houses and streets. Only a selection of the houses in this area is described here: those whose plans have been recovered entirely or nearly so. The labeling of the individual houses represents a minor problem, for it has proved impossible to impose a systematic numbering scheme such as that used at Olynthos. Only those houses which can be clearly isolated from their neighbors are labeled, and then arbitrarily, in alphabetic sequence.

House A (Fig. 3) is the smallest of the houses excavated at Halieis, and is located on the north side of the intersection of Avenue B and Street 4. It is entered from the avenue through a *prothyron* entranceway. The outer opening is wider than the inner, common in such entrances. One of the bases for the jambs of the outer opening was found *in situ*, while both were found for the inner. Cartwheel ruts are visible on the threshold block of the inner opening of this entrance.

Entering the house one notes a large, square pit, *ca.* 1.5 m. square and about a meter deep, which perhaps served as a cellar. Beyond this are two, well-cut limestone blocks, each measuring *ca.* 0.45 m. square, which appear to have served as bases for vertical supports. Whether the supports were wooden or stone columns or pillars is not possible to determine, for no traces of such supporting members were found in the course of excavation. Opposite the *prothyron* entrance, in the eastern corner of the house, are the foundations of a square, cement-paved enclosure. It seems entirely possible that, rather than an enclosed room, these foundations mark a slightly raised working area, such as those found in houses A, C, D and the house in Area 4. The entire southeast half of the house will then have been a courtyard. Part was surely open to the sky in order to illuminate the interior of the house, though precisely which part is a matter of speculation.

The northwest half of the house is divided into a series of rooms. Those toward the west, against Avenue B, seem to have contained kitchen and bathroom facilities. The largest room, in the westernmost corner of the house, is partially paved with cement, and a sunken pithos, with the mouth exposed at floor level, is sealed into the floor toward the northeast side of the room. To the southeast of this room which is tentatively identified as the kitchen, one enters a much smaller room with cement-lined floor and walls. In all probability this is the bathroom. Analogous rooms, both in terms of their finish and their location with respect to the kitchen, are to be found at Olynthos.²⁰ The remaining rooms would have served as storage, sleeping and entertaining quarters. No evidence whatsoever was found which would indicate that the house had a staircase, and therefore a second storey.

²⁰ G. E. Mylonas, "Excursus II, The Oecus Unit of the Olynthian House," in D. M. Robinson, *Excavations at Olynthus*, XII, *Domestic and Public Architecture*, Baltimore 1946, pp. 369-398.

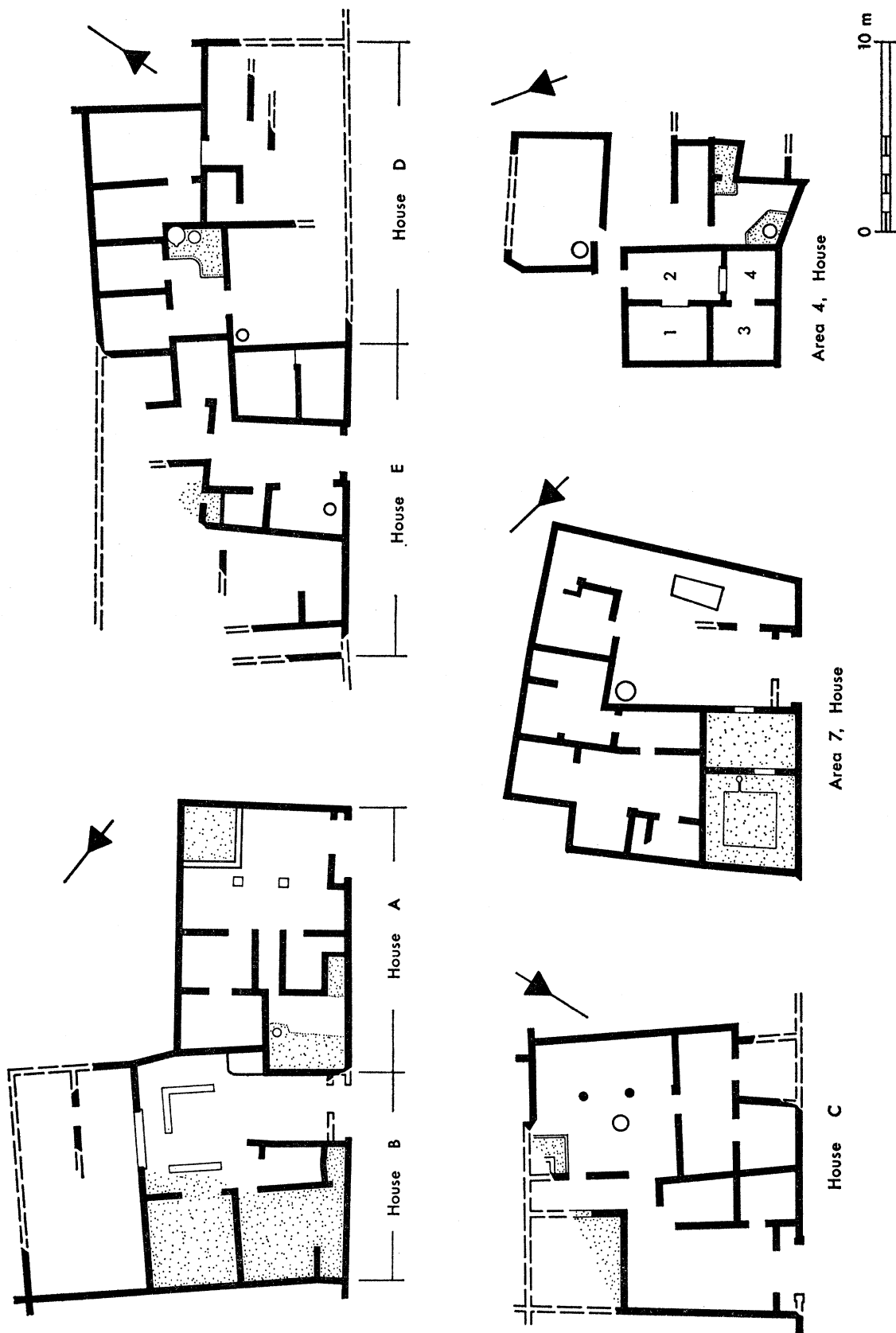


FIG. 3 Areas 4, 6 and 7: Plans of individual houses.

House B (Fig. 3) is contiguous with House A and is also entered from Avenue B. It is significantly larger, occupying an area of perhaps 215 square meters,²¹ while House A occupies an area of only 120 square meters. It is entered through a *prothyron* entranceway, whence a wide hallway leads to a courtyard measuring almost 7 m. square. Within it are the foundations of what must be a peristyle. Beyond these foundations to the northeast, fragments of a Doric column and of a Doric capital were found. The foundations thought to be those of a peristyle are not continuous, and occur on the southeast, northeast and northwest sides only. It is tempting to restore three columns on the northeast side, and two along each of the northwest and southeast sides (counting corner columns twice), but the lack of appropriate foundations along the southwest side is troublesome. In the southwest corner of the courtyard a foundation is clearly visible which may represent the base of a staircase. It is, in fact, the only feature excavated so far in a house at Halieis which might be identified as an indication of a staircase, and therefore of a house with a second storey.

A wide doorway leads from the northeast side of the courtyard to what is assumed to be a suite of rooms, though excavation of this part of the house is incomplete. To the northwest of the courtyard a doorway leads to a large, cement-paved room. Its size and finished floor suggest that it may have been an *andron*, though it lacks the low, raised platform around its perimeter, on which the *klinai* would have been placed, as in so many examples found elsewhere, including Halieis.²² Between this room and Avenue B, in the western corner of the house, is a suite of rooms, the largest of which may have been the kitchen. The small, cement-paved room between it and the *prothyron* would then have been the bathroom. This arrangement and identification recall a similar set of rooms in House A, discussed above.

House C (Fig. 3) is located on the southeast side of Street 4 between Avenues B and C, and occupies an area of approximately 220 square meters. Its size and nearly square shape recall houses at Olynthos, and perhaps it is of a size considered standard or nearly so when Halieis was first laid out in an orthogonal fashion. House C is entered through a *prothyron* (Pl. 89:b), the outer opening of which is distinctly marked, on its southwest side at least. Here, a limestone foundation block cut in the form of an anta base was found *in situ*, though on the opposite side its presumed counterpart has disappeared. Beyond the *prothyron* one proceeds into the interior of the house through a large hallway. A small, slightly trapezoidal room opens off the southwest side of the hallway. Effectively isolated from the rest of the house, it was perhaps an office.

Beyond the *prothyron*, the precise limits of the hallway have proved difficult to clarify. The presence of a large olive tree towards the northeast side of the room

²¹ This figure is only an estimate, for the northern part of the house has not been excavated.

²² The classic form of *andron* with the raised perimeter has been found in only three of the houses at Halieis: the house immediately adjacent to House B on its northwest side, a partially excavated house in Area 5, and the completely exposed house in Area 7.

has prevented its full exploration. We suspect, but cannot confirm, the presence of a wall underlying this tree, for beyond the tree to the southeast a cement floor was found, whereas to the northwest there is no trace of such a floor. Furthermore, the level of the cement floor is *ca.* 0.25 m. higher than the level of the hallway.

The remains of what is thought to be a large room occupying the eastern corner of the house have been partially excavated. The existing property line prevents its further exploration. The floor is cement, the same floor described above, at the northwest limit of which is located the olive tree. A doorway leading into the southwest side of the room displays a threshold of carefully finished cement, and not, as one might have expected, of stone. The location of the room, in one corner of the house, and its visible architectural characteristics, despite the lack of a low, raised platform around its perimeter, would permit its tentative identification as an *andron*. In front of the entrance to this room one notes another partially excavated room which would then have been the anteroom.

The southern quarter of the house is given over to a courtyard, containing a modest portico, a well-built cistern, and in the eastern corner, a low, raised cement platform. Two columns of fine-grained conglomerate were found within the courtyard, as were their bases, still *in situ*. The column shafts are roughly fluted, and show traces of plaster in order to permit a finer degree of finish than can be achieved in the material of the columns themselves. One Doric capital was found here also, and displays an archaic profile, suggesting that in this application it was re-used. Undoubtedly a part of the courtyard was open to the sky, probably that part to the northeast of the column bases. A suite of rooms opens off the northwest side of the courtyard, undoubtedly the private quarters of the household.

House D (Fig. 3) is difficult to define, since basically only its central portion has been excavated, again due to existing property lines. Its entrance would have been from Street 3. The arrangement of rooms is quite irregular, and any logical organization escapes recognition. In the southernmost room a large, deep cellar was excavated, with a quite irregular outline. Northwest of this cellar there is a well with a limestone wellhead, and in the eastern corner of the room were found the remains of a cement floor. From this room a group of three smaller rooms is entered, the nearest of which contains a cement floor in its northeast end. A large limestone base, *ca.* one meter in diameter, of an olive or grape press was found set in place in the northern corner. Under the spout of this base there is a terracotta basin set in the cement floor. An uncertain number of rooms occupies the northeastern half of the house. Clarification of the function of these rooms will be difficult, since their full excavation is not possible.

House E (Fig. 3) is also entered from Street 3, and here we have the only clear example of an entranceway to a house at Halieis which is not of the *prothyron* type. The southwest limit of the house is marked by an unusually substantial wall for Halieis, with at least two, perhaps three courses of masonry. The upper sur-

face of the second course, still *in situ*, contains pry-marks, regularly spaced, indicating that a third course may once have been set in place here.²³ The room immediately inside the entrance to the house was perhaps a courtyard, and contains a well, again with a limestone wellhead.

The kitchen and bathrooms of House E may be found in the western corner of the house, though they could only be excavated in part. A room with a cement floor was partially excavated, off which a smaller room opens to the southeast. Excavated completely, the latter has a cement floor and cement-lined walls, and recalls the kitchen-bathroom arrangement found in Houses A and B. The remaining rooms in this house are ill-defined, especially in its northwest part, where once again, due to property restrictions, complete excavation of the house has been prevented. The irregular line of the party wall separating Houses D and E may represent rebuilding of earlier walls here, accompanied by minor adjustments in the property holdings between neighbors.

AREA 7 (Fig. 2)

A considerable amount of information was gathered in this area concerning the city fortifications, which will be published elsewhere. The discovery of the Southeast Gate and the eastern limits of Avenue C came about in the 1972 campaign, and provided valuable information regarding the organization of the Lower Town. Just inside the Southeast Gate, on the north side of Avenue C where it intersects Street 1, a house of rather irregular design was excavated. It is entered through what seems to have been a *prothyron* entranceway from Avenue C. An *andron* with a raised perimeter and an antechamber occupy the western corner of the house. A scoop basin with a channel leading from the central, depressed area of the floor of the *andron* is located on the southeast side of the room. The floor of the antechamber, like that of the *andron*, is paved with cement. It is interesting to note that the doorways of the *andron* and its forechamber are arranged so that a line of sight through them is not possible from the main entrance, thus assuring a greater degree of privacy.

The southern quarter of the house consists of a spacious courtyard opening directly off the entrance to the house, and in the southern extremity, an area of undetermined function. A well occupies the northern corner of the courtyard, and in the eastern part there is a large, rectangular cellar, lined with slightly irregular worked blocks. The northern part of the house is difficult to interpret in detail, though it is here that we should expect to find the living quarters of the household. The room on the northwest side of the courtyard may have been a porch, open to the courtyard. The eastern extremity of the house was quite clearly the kitchen area, apparently consisting of two rooms. The corner or easternmost room appears to have been

²³ The absence of tumbled masonry in the vicinity of this wall makes this questionable. The pry-marks would then be an indication that the blocks making up the second course are re-used in that application.

open to the courtyard. The spur wall dividing these two rooms terminates in a hearth, protected on the northwest and southwest sides by thin, upright limestone slabs. A large amount of cooking ware was found in the immediate vicinity, supporting the identification of this as the kitchen area. A hard cement floor was exposed in the easternmost corner, but its original limits could not be determined.

CONSTRUCTION METHODS AND INTERIOR DECORATION

All structures excavated thus far at Halieis appear to have been built according to common principles. Foundations are of stone, whether rubble or cut blocks. The latter appear to have been quarried from local limestone formations. In every building excavated to date the superstructure was constructed of mud brick. The great quantities of tiles encountered almost everywhere in the excavations indicate that sloping roofs were the rule, as is to be expected. Foundations bordering streets and avenues normally consist of two courses of stone. The lower is generally about 0.60 to 0.70 m. wide, while the upper is, for the most part, fairly uniform in width at about 0.35 m. The lengths of the blocks, or orthostates, of the upper course vary from *ca.* 0.60 to 2.50 m. Interior wall foundations vary in quality. Cut orthostates are common enough, but seldom is there a sub-course. More frequently, the foundations of interior walls are built of unworked stones set in mud mortar. The quality of the rubble walls varies, and it is quite common to find, over the course of a single wall, both orthostates and rubble construction in combination. This lack of uniformity is reflected also in the general design of buildings at Halieis, even in the layout of streets and avenues. No particular proclivity for straight lines and right angles is apparent in the architecture of the city.

Significant information regarding the nature and scheme of interior wall decoration has been recovered from a number of houses. Small traces of plaster colored black, yellow and green have been recovered in several instances, but never in quantity. On the other hand, red and white plaster have been found extensively, not unlike the situation at Olynthos. Three examples stand out and are described here. Both the *andron* and the antechamber to it in the house in Area 7 produced considerable quantities of red plaster, though almost none was found still in place on the walls. Red seems to have been the predominant color in that suite of rooms. In a room in the house immediately northeast of House C in Area 6 a considerable area of plaster was found, face down, indicating that a mud-brick wall had collapsed here. The underside of the collapsed plaster was colored red for a distance of approximately 1.50 m. from the orthostate from which the wall collapsed. Between the red colored plaster and the orthostate itself, however, a smaller area of white plaster was found. It would seem that the face of the wall originally bore a white base course at its bottom, and that perhaps the entire remainder of the wall up to the ceiling was red.

Across Street 4 from this last example, in the house at the southwest side of the intersection of Avenue B and Street 4, a room with a similar color scheme was

excavated. In this case, however, the plaster was found adhering to the stone socle to a height of *ca.* 0.30 m. The lower portion on two adjoining walls consists of a white base, some 0.20 m. high, above which the plaster is red (Pl. 89:c). A fair quantity of fragments of red plaster was found in the course of excavation of this room, and it should be pointed out that no other colors were noted. We would expect that the scheme of decoration on these two adjoining walls was the same as that of the collapsed wall in the house across the street, described above.

STRUCTURE NEAR THE SOUTHEAST GATE

In the course of the 1975 campaign an unusual structure was found near the Southeast Gate in the city wall (Fig. 4). Located immediately adjacent to Tower 9 which flanks this gate, the structure, trapezoidal in plan, was found to have been built at a curious angle against the exterior face of the city wall. This one-room building has a width of 3.50 m. and a maximum length of 4.40 m. measured along its southwest side. A doorway, 2.15 m. wide, provides the only access to the building. There is no threshold block, nor is there any evidence for a valved door. The walls consist of a socle of cut stone blocks, on which the superstructure of mud brick was built. The interior wall surfaces were plastered and the lower reaches, at least, were red, including the rear wall of the building which, as already noted, was formed by the exterior face of the city wall. The floor was constructed of cement laid on a foundation of smooth, fist-sized stones. A number of Lakonian roof-tile fragments found in and about the building indicate the nature of the roof construction.

A number of factors indicate that this building was a shrine. The most noteworthy feature of its construction is its juxtaposition with respect to the city wall. Though this building can hardly be considered a temple in the usual architectural sense, its awkward position seems best understood as a conscious effort to have the structure open eastward in the fashion of most Greek temples.²⁴ Furthermore, there is a cement platform near the center of the structure measuring 1.25 x 0.48 m., which projects approximately 0.02 m. above the floor. A shallow channel leads from the rear of the platform to a scoop basin formed in the cement floor. At either end of the platform faint wear marks indicate that some object was set in place upon it, perhaps a table for offerings. Furthermore, several miniature votive kotylai were found amongst a small amount of other wares in the excavation of the structure. Each was found either on the platform itself or on the floor near it. No material was found, however, which would indicate to which deity the shrine may have been dedicated.²⁵

²⁴ Some 80% of Greek temples are oriented so that their longitudinal axis falls within the solstitial arc: W. B. Dinsmoor, "Archaeology and Astronomy," *Proceedings of the American Philosophical Society* 83, 1939, pp. 115-116. Of these, the vast majority are entered from the east.

²⁵ Comparable miniature kotylai associated with religious activity in the 4th century are documented elsewhere both in burials, e. g., D. M. Robinson, *Excavations at Olynthus*, XIII, *Vases*

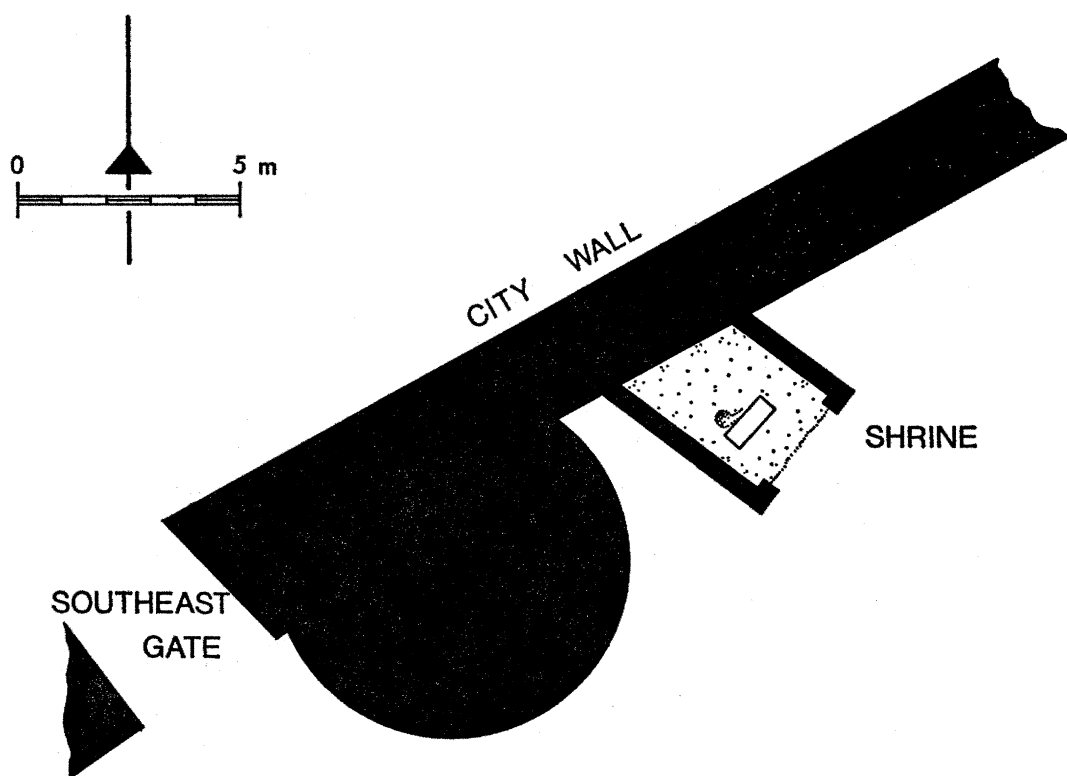


FIG. 4. The shrine near the Southeast Gate.

The date of construction of the shrine is difficult to ascertain with accuracy. The pottery found within the shrine is typical of the 4th century wares at Halieis, and the method of construction is quite typical of other 4th century buildings excavated so far. At the rear of the structure the cement floor was cut away in order to determine whether or not the shrine as first uncovered represented only the final architectural arrangement of a building whose history began in an earlier period. No architectural features were encountered in this sounding. Furthermore, it was noted that the cement floor displays no trace of resurfacing, and therefore one may conclude that the shrine had a relatively short history, in this location and with this configuration, at least.²⁶ No precise parallel for the arrangement of the shrine can be cited, and as such, lacking an attribution, the building remains an architectural curiosity.

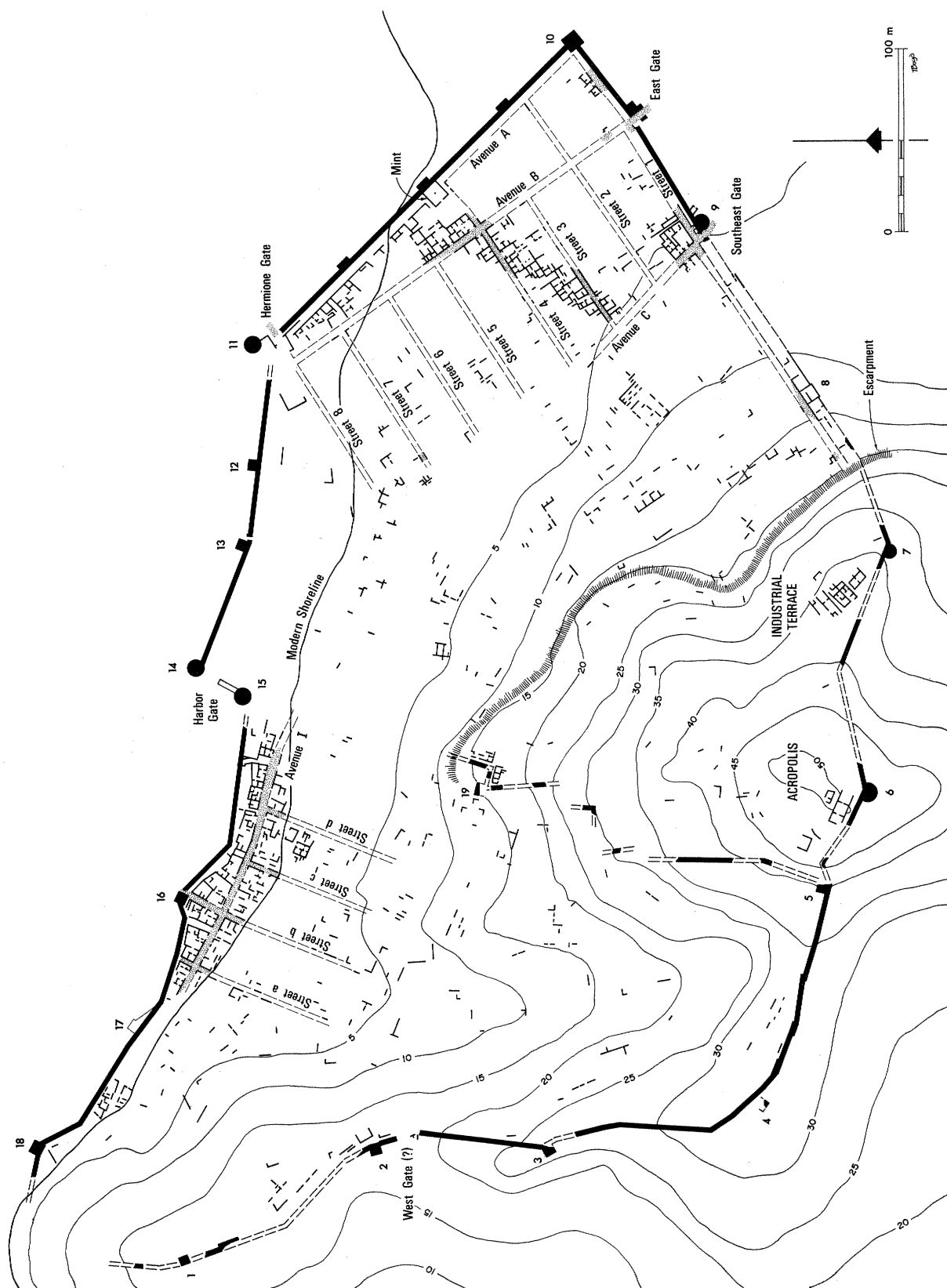
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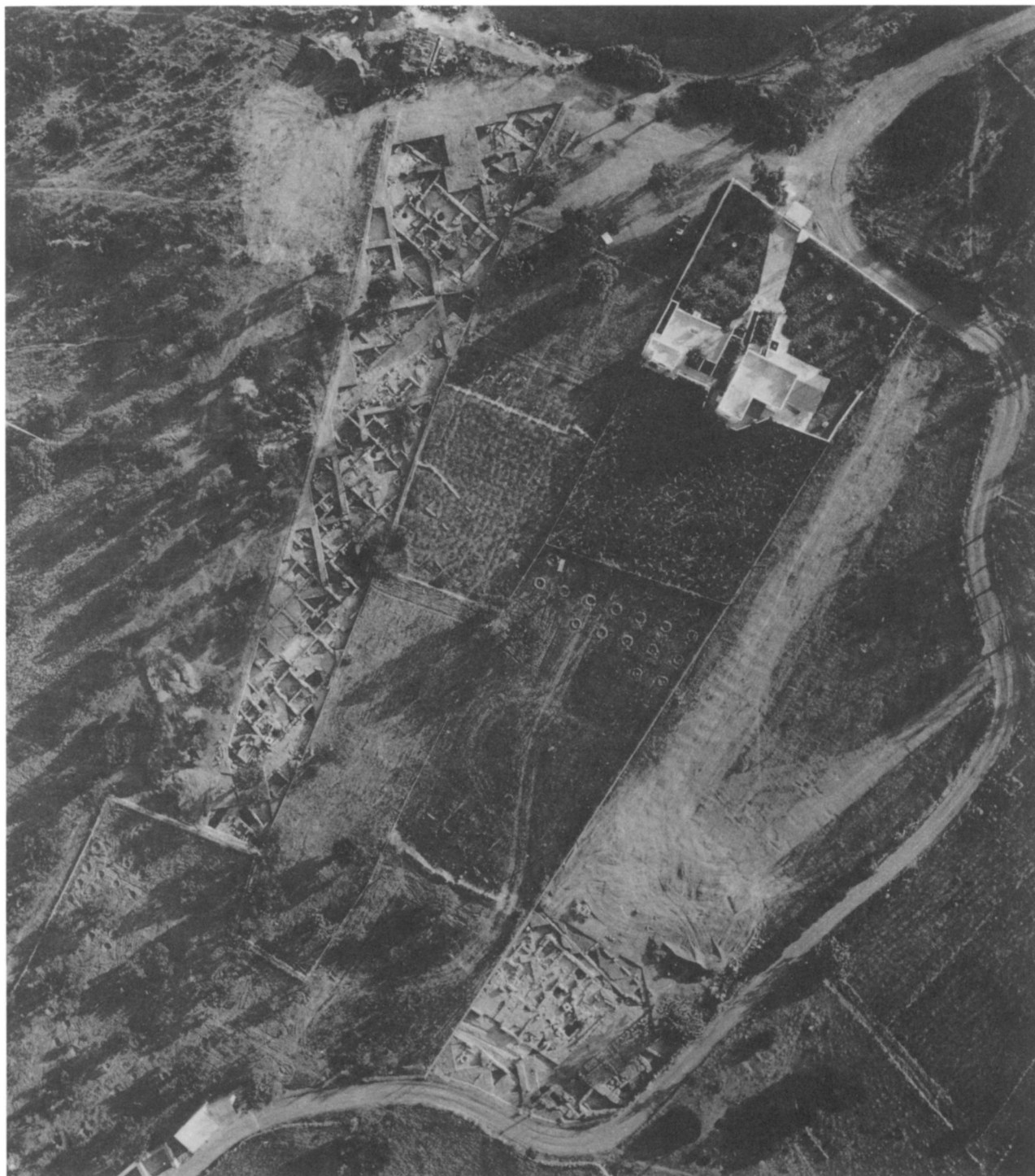
found in 1934 and 1938, Baltimore 1950, pp. 298-299, and in cult buildings, e.g., R. S. Stroud, "The Sanctuary of Demeter and Kore on Acrocorinth, Preliminary Report I: 1961-1962," *Hesperia* 34, 1965, p. 15; *idem*, "The Sanctuary of Demeter and Kore on Acrocorinth, Preliminary Report II: 1964-1965," *Hesperia* 37, 1968, p. 320. It should be noted, however, that such kotylai have also been found in houses at Halieis of this same period where the context cannot necessarily be assumed to pertain to cult activity.

The proximity of the shrine to the Southeast Gate perhaps suggests that here a deity was worshipped who, elsewhere, is associated with gates. Near the entrance to the Athenian Acropolis, for example, there was a Hermes, surnamed Propylaios (Pausanias, I. 22. 8). See also M. Nilsson, *Geschichte der Griechischen Religion*, I³, Munich 1967, p. 508. Hermes regularly receives a pillar-like image rather than an enclosed shrine such as that at Halieis, it should be noted. At Eleusis there was a temple of Artemis Propylaia (Pausanias, I. 38. 6), and Apollo, with the epithet Ἀγυαῖος, was worshipped as the guardian of gates: again Nilsson, *op. cit.*, pp. 562-563. Cf. also Aristophanes, *Vespae*, 875. However tempting it may be, to speculate upon the identification of the deity worshipped in the shrine at Halieis is of limited worth in the absence of concrete evidence.

²⁶ A small amount of pottery from as early as the 7th century was recovered in the course of the sounding beneath the floor. If this material represents religious activity in this same location, one might envision a votive niche cut into the mud-brick superstructure of the city wall. For further information on this subject, see S. Charitonides, "Τερόν Πύλης," *AthMitt* 75, 1960, pp. 1-3; also E.-L. Schwandner, "Die Böotische Hafenstadt Siphai," *ArchAnz* [92], 1977, pp. 532-534. It seems more probable that this material represents instead activity associated with the construction and subsequent renovations of the city wall which existed here well before the 4th century.



Topographic plan of Ancient Haliëis

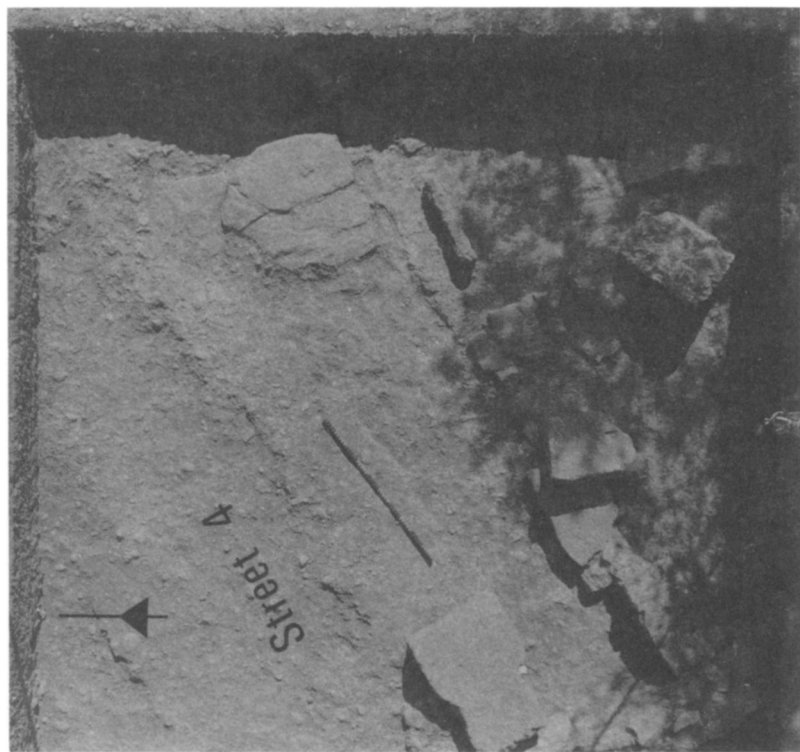


Balloon photograph of Areas 6 and 7

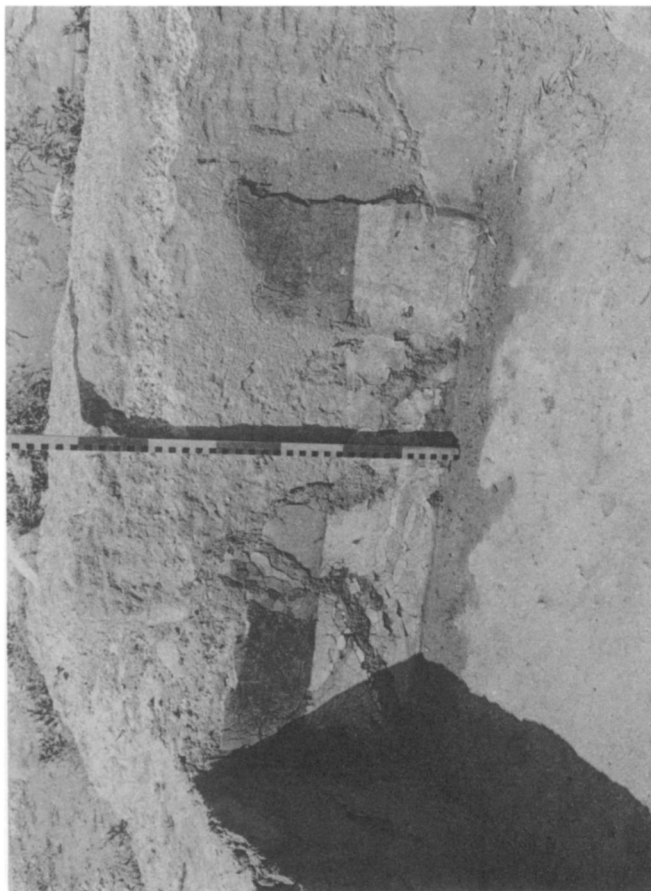
THOMAS BOYD AND WOLF W. RUDOLPH: EXCAVATIONS AT PORTO CHELI AND VICINITY.
PRELIMINARY REPORT IV



a. Submerged anta base and *prothyron* entrance to house on Street C



b. Anta base and *prothyron* entrance to House C, Area 6



c. Painted wall plaster in a house in Area 6