THE MONOPTEROS IN THE ATHENIAN AGORA

(Plate 88)

OSCAR Broneer has a monopteros at Ancient Isthmia. So do we at the Athenian Agora.[1] His is middle Roman in date with few architectural remains. So is ours. He, however, has coins which depict his building and he knows, from Pausanias, that it was built for the hero Palaimon.[2] We, unfortunately, have no such coins and are not even certain of the function of our building. We must be content merely to label it a monopteros, a term defined by Vitruvius in *The Ten Books on Architecture*, IV, 8, 1: *Fiunt autem aedes rotundae, e quibus aliae monopteroe sine cella columnatae constituuntur, aliae peripteroe dicuntur.*

The round building at the Athenian Agora was unearthed during excavations in 1936 to the west of the northern end of the Stoa of Attalos (Fig. 1). Further excavations were carried on in the campaigns of 1951-1954. The structure has been dated to the Antonine period, mid-second century after Christ,[3] and was apparently built some twenty years later than the large Hadrianic Basilica which was recently found to its north.[4] The lifespan of the building was comparatively short in that it was demolished either during or soon after the Herulian invasion of A.D. 267.[5]

[1] I want to thank Professor Homer A. Thompson for his interest, suggestions and generous help in doing this study and for his permission to publish the material from the Athenian Agora which is used in this article. Anastasia N. Dinsmoor helped greatly in correcting the manuscript and in the library work.

[2] Oscar Broneer, *Isthmia*, II, *Topography and Architecture*, Princeton, 1973, pp. 109-112.

[3] Thompson and Wycherley, *The Athenian Agora*, XIV, *The Agora of Athens*, Princeton, 1972, pp. 203, 229. The construction fill of the round building was characterized by mottled green marble working chips. This fill surrounded the building and extended down the slope to the north as far as the south porch of the Hadrianic Basilica where the layer raised the ground level slightly above the top of the lower step of the crepidoma of that building. This raising of the ground level indicates a later date for the round building than for the Basilica. Around our building the construction fill rested either directly on the construction fill of the Square Peristyle of the 4th century B.C. or else on an intermediate early to middle Roman fill of dug bedrock or sand and gravel. For the pottery from the construction fill see Group H in Henry Robinson's *The Athenian Agora*, V, *Pottery of the Roman Period*, Princeton, 1959, pp. 46-49. On stylistic grounds John Travlos has pointed to the similarity in architectural ornament and carving with the Great Propylaia at Eleusis and H. A. Thompson has made comparison with the monopteroi of the Nymphaion of Herodes Atticus at Olympia, both of the Antonine period (see Robinson, *ibid.*, p. 46, note 4).

[4] T. Leslie Shear, Jr., "The Athenian Agora: Excavations of 1970," *Hesperia*, XL, 1971, p. 264.

[5] *Hesperia*, VI, 1937, p. 356. Above the construction fill surrounding the round building was a destruction layer of the 3rd-4th century after Christ. This latter layer also covered the remains of the building itself, extending down to the lowest foundation blocks. The building was probably destroyed by the Herulians in A.D. 267 and its components afterwards completely removed either to be incorporated in the post-Herulian wall or to be used later as building material within the confined city limits slightly to the east in the early fourth century.

THE ARCHITECTURAL REMAINS

The physical remains of the building are scanty, consisting of part of the lowest course of the foundations, fragments of column shafts, part of the geison course and a small section of the brick dome. However, enough exists to allow us to restore the building in a manner which should closely reflect its original appearance.

A partial ring of trapezoidal foundation blocks, of hard white poros, provided the first inkling of the existence of the structure (Pl. 88, a). They represent 42½ percent of the circumference of a circle with a diameter of 8.50 m. (Fig. 4). The blocks, 0.48 m. high, are slightly irregular in width and length but are tightly fitted and carefully laid; they conform to the outer line of the building circle amazingly well for a course so deep down in the foundation. The other blocks were robbed out. In the southwestern quadrant, adjoining the last complete block on the west, there remains *in situ* part of one which is mostly broken away. At this point the foundation blocks rest directly on bedrock which had been cut down 0.06 m. to form a level surface. This level bedrock extends at least 1.50 m. into the building area beyond the back of the circular ring of blocks.

At the eastern and southern sectors of the building the situation differs radically (Pl. 88, b). Here, along the outer periphery of the edifice, the bedrock was cut down sharply to a level which is slightly below that of the bottom of the extant foundation blocks and a narrow ledge of 0.60 m. in width was created (the foundation blocks are 1.20 to 1.30 m. in depth). Within the core of the building, adjacent to the ledge, the bedrock was cut down another 0.80 to 0.90 m. The pit thus created eliminated all traces at this point of the foundation of the Square Peristyle of the 4th century B.C. over which our structure was erected. This pit was then filled with rubble and mortar set in layers of 0.45 to 0.65 m. in thickness (Fig. 2). A possible explanation for these irregularities may be given by a grave below the southern edge of our monopteros. This grave has not been excavated. Its northern half was exposed in 1954 when a modern cistern was dug (Fig. 4). It is a cist grave, 0.60 m. wide, with cover slabs, and appears to be somewhat similar in form to Grave XIX a few meters to the west.[6] The latter is Mycenaean III A: 2 or early III B. The unusual feature about the grave under our foundations is that it lies 2.10 m. below the bedrock just to its east. Although cist graves were sometimes cut fairly deeply in bedrock, this depth is excessive. If, however, there had been a natural gully here, similar to the Mycenaean gully to the northwest in which a child's grave was found (Fig. 1), the depth of the grave below the exposed bedrock would be more reasonable. The rough slopes of such a gully would certainly have been stepped and leveled to give firm bearing for the core of our building.

[6] Sara Immerwahr, *The Athenian Agora*, XIII, *The Neolithic and Bronze Ages*, Princeton, 1971, p. 212.

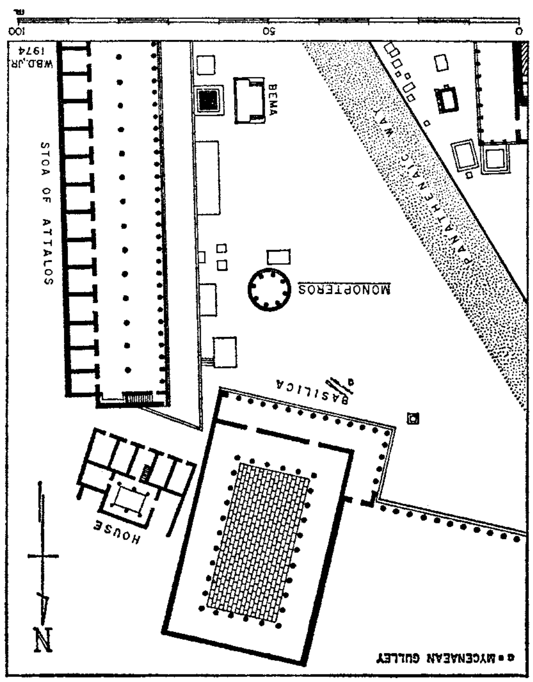


FIG. 1. Site Plan.

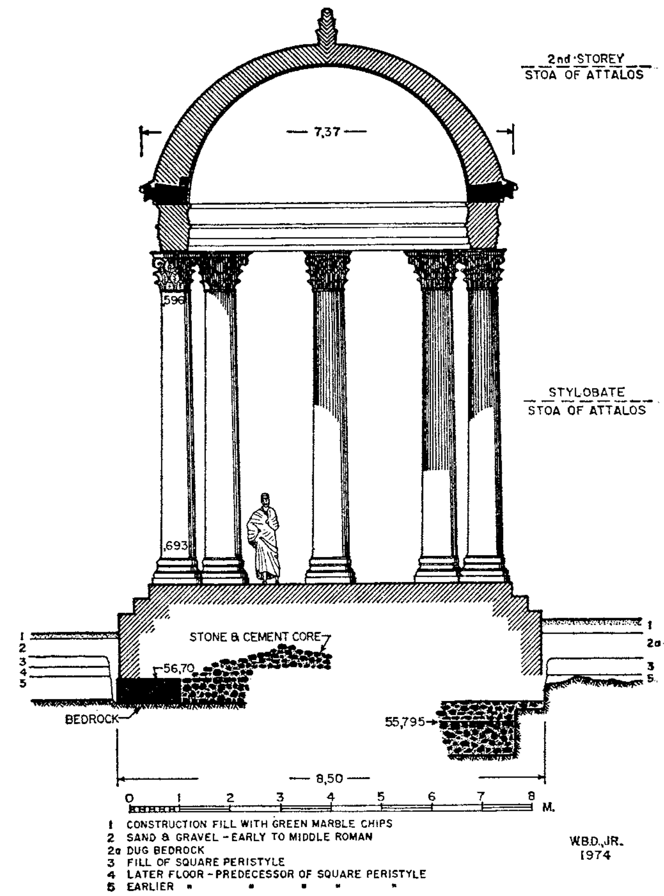


FIG. 2. Restored Section looking north.

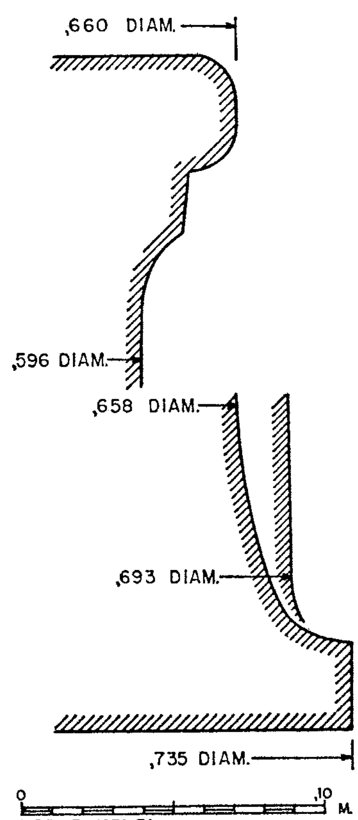


FIG. 3. Top and bottom of column shaft.

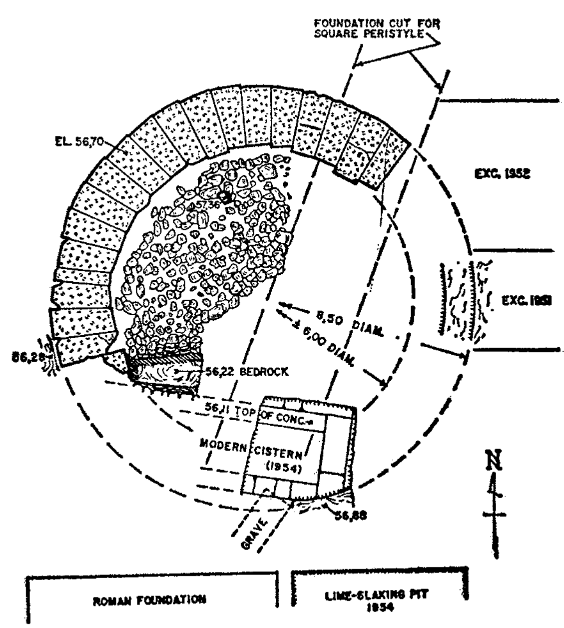


FIG. 4. State Plan.

The construction fill surrounding the monopteros was full of green marble working chips. These are identified as coming either entirely, or primarily, from the carving of light-green marble columns with embedded gray, black, dark-green and white stones which produce a very mottled appearance. The marble is *verde antico* (*lapis Atracius*), quarried in Thessaly.[7] Large fragments of column shafts carved from this material were found in the environs of our building, most of them re-used in late Roman structures. Some came from the lower foundations of a late Roman house 23 meters to the northwest. Others emerged from the southern retaining wall of the Athens-Piraeus railroad, very close to, and probably coming from, this same house. More fragments were discovered in a late Roman aqueduct wall 10 meters west of the late Roman house. In recent excavations across the railroad tracks a large section from the bottom of a column was found built into a long east-west wall of the 5th century after Christ some 36 meters northeast of our monopteros. Various pieces were also collected from a marble pile near our building, including one from the top of a column, A 1771. Considerably to the south several large pieces, apparently found in pre-war excavations, turned up along the line of the Panathenaic Way approximately opposite the mid-point of the Stoa of Attalos. These included a large section from the top of a column, A 1770. Much further south, not far from the Middle Stoa, a fragment with base molding was discovered.

The diameter of these unfluted columns at the bottom fillet is 0.735 m. (Fig. 3). Above the apophyge two different fragments yield diameters of 0.693 m. and 0.658 m., but the profile of the latter is cut very deeply and the mason may have erred in his work. At the top, the columns have a diameter of 0.660 m. across the torus. Below the apophyge they measure 0.596 m. The columns were certainly monolithic since no resting surfaces for drums were found. Each column had a central dowel hole top and bottom. The dowel cutting on one bottom fragment is 0.045 m. square and 0.076 m. deep; one on a top fragment is round, 0.08 m. in diameter and 0.085 m. deep.[8]

[7] Marbles were imported to Rome from Augustan times onwards. There was an enormous expansion in production during the second half of the first century. Under Trajan and Hadrian there was an increasing surplus and marbles were being shipped to the provinces. By the time of the later Antonines this trade had become a flood. Diocletian, in his edict on prices, listed at least twenty types of marble including our Thessalian *verde antico* (J. B. Ward-Perkins, *J.R.S.*, XLI, 1951, pp. 89-104). For the stone itself, *lapis Atracius,* see the *Enciclopedia dell'Arte Antica,* IV, 1961, p. 866, no. 28 and color plate opp. p. 860, ill. 3. The marble is found in Thessaly both near ancient Atrax by the Pinios River some 22 km. southwest by west of Larissa, slightly beyond the modern village of Aliphaka, and also some 9 km. northeast of Larissa near Hasambali.

[8] These columns, as noted above, have been associated with the round building because of the occurrence of working chips of the same distinctive stone in its construction fill. Normally, however, the lower diameter of such columns is about the same or only slightly more than the thickness of the epistyle course at its bottom. On this criterion our columns should be *ca.* 0.54 m. in their lower diameter rather than the 0.693 m. which we have. The only other building of similar date which is near and could have used our columns (which have almost the identical upper and lower

Of the geison course, of Pentelic marble, there exist two complete blocks, a broken left half of a block, another smaller broken section from a left end, and a fragment from a nosing at a left end (Pl. 88, c, d). These five marbles represent five different geison blocks. A 638a (Fig. 6) was found in 1936 at the southern edge of our monopteros, but with its face to the north. It was in soft earth of the 3rd-4th century. A 638b (Fig. 5) was discovered immediately to the west of the first block, but again with its face to the north (the two do not join). Later in the season A 638c (Fig. 7) appeared upside down and broken, lying some 16 meters northwest of our building in the company of several miscellaneous blocks. None of our blocks was lying as if it had fallen during the collapse of the building. The first two had obviously been moved after falling but for some reason they were not carried away from the site. The third was removed but was then abandoned. The fourth, A 4284 (Fig. 8), was re-used in post-Herulian times as a cover slab for a drain of the 2nd century after Christ. It was found 37½ meters northeast of our building, a mere 2 meters from the large bottom piece of column which was incorporated into the 5th-century long east-west wall. The fifth geison fragment, A 2791 (Fig. 9), is of unknown provenience. It was found at the Church of the Holy Apostles some 150 meters south of our building.

Each block was originally attached to its neighbor with two hook clamps. The vertical parts of these clamp cuttings vary in size but are consistently rather deep. The connecting cuttings for the web of the clamps are, on the other hand, either very shallow or nonexistent so that the iron webs, rather than being recessed, had to rest on the top surface of the geisa. The other typical structural cutting on the blocks is a lewis hole which was carefully located at the center of gravity. Both ends of each hole have wedge-shaped slopes. It is only on the short geison, A 638a, that no lewis cutting appears. The reason for the lack of a lifting device here was probably because of a structural fault in the marble in the form of a crack which starts near the center of the geison on its top surface, angles down the front and continues back, near the right end, on the bottom of the block. A safer means of lifting must have been employed so that the marble would not break. As it was, the architect felt it necessary as a safety precaution to insert two long hook clamps, bridging the crack, on the under side of the block (Fig. 6).

The design of the geison with its double fascia was not exceptional in the Roman period.[9] The upper fascia, of course, represents an atrophied sima and on our

diameters of the columns of the east porch of the Erechtheum) is the Hadrianic Basilica to the north. The south porch of this building employed Pentelic marble Ionic columns somewhat smaller than those of the east porch of the Erechtheum but with a necking band of palmettes and lotuses at the top of the shaft which is almost a direct copy of those of the Erechtheum. However, none of the columns of the inner peristyle of the Hadrianic Basilica has been recovered as yet. On the other hand, no mottled green marble has been observed in the construction fill of the Basilica.

[9] Compare the colonnade of the Roman Agora in Athens of the 1st century B.C. and the South-east Stoa in the Athenian Agora of the 2nd century after Christ (John Travlos, *Pictorial Dictionary*

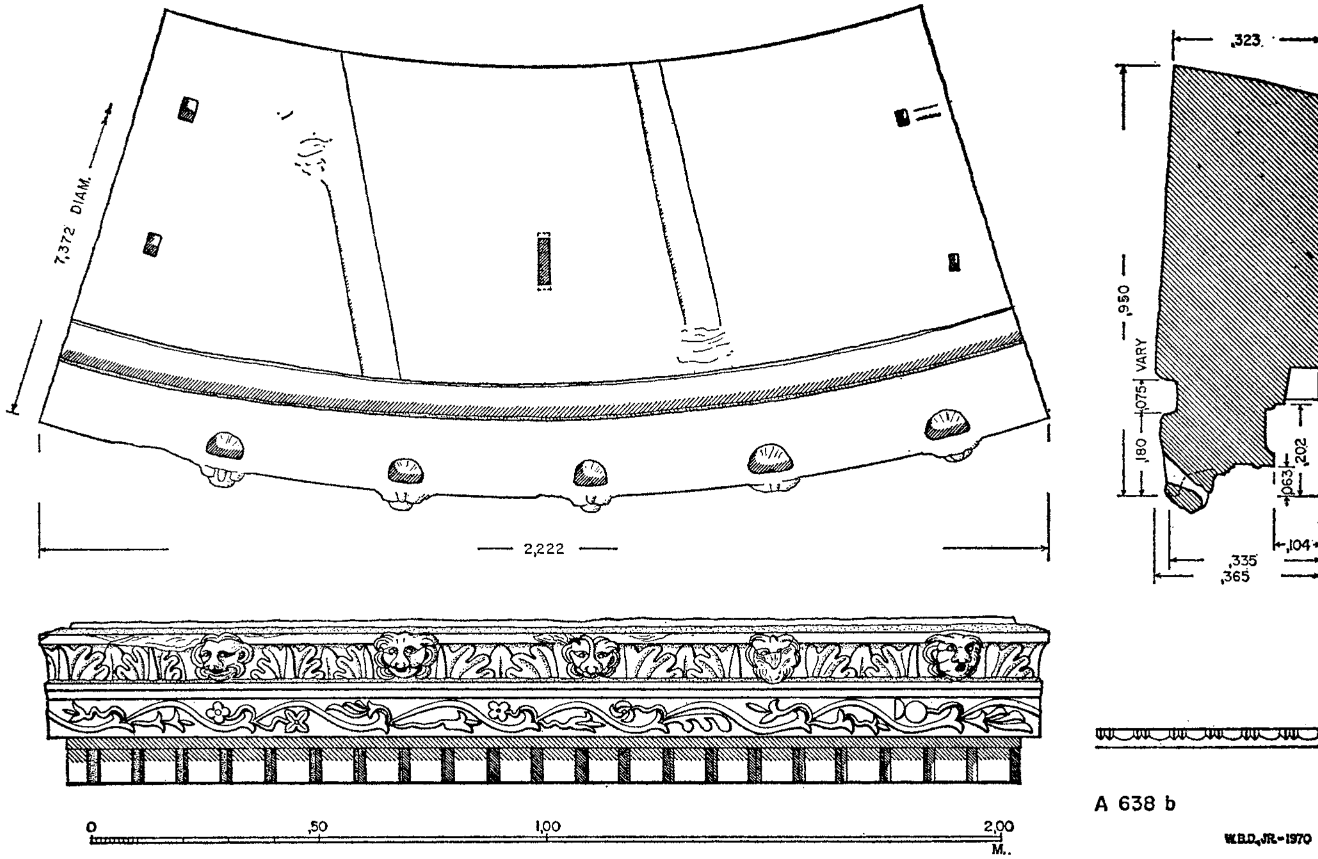


FIG. 5. Geison block A 638b.

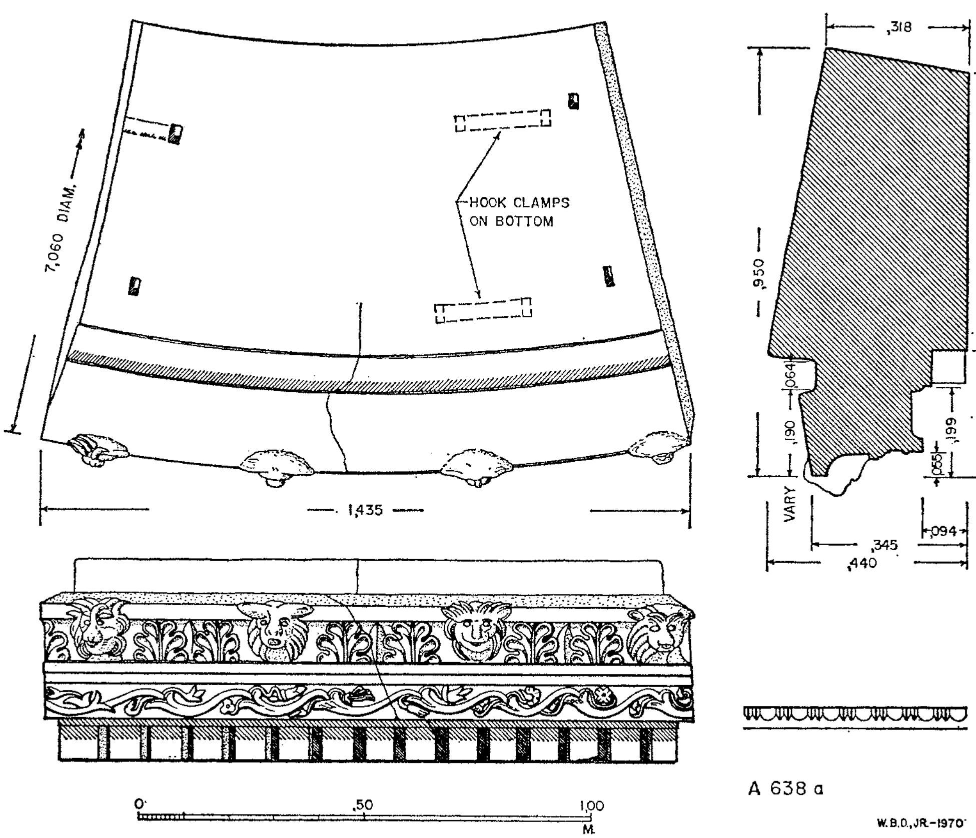


FIG. 6. Geison block A 638a.

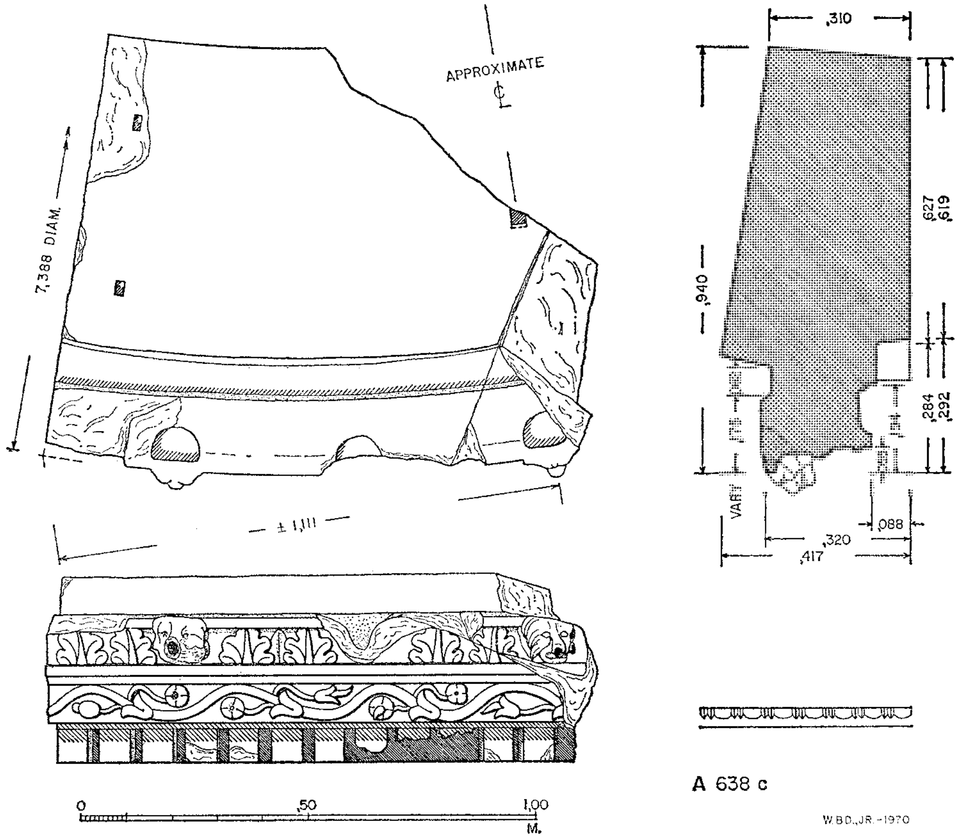


Fig. 7. Geison block A 638c.

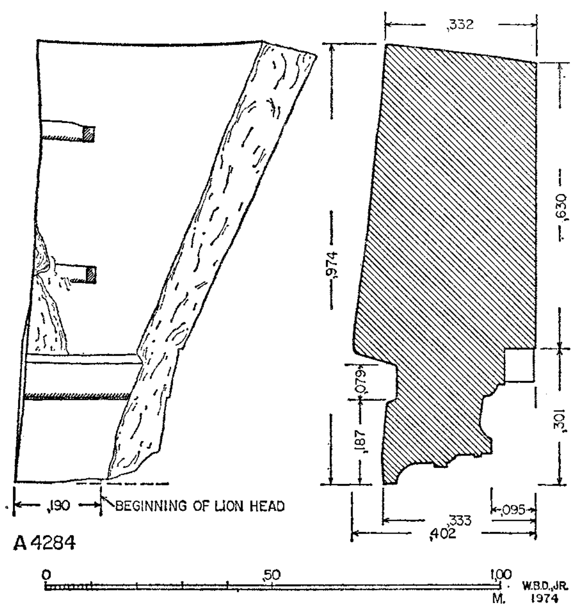


Fig. 8. Geison block A 4284.

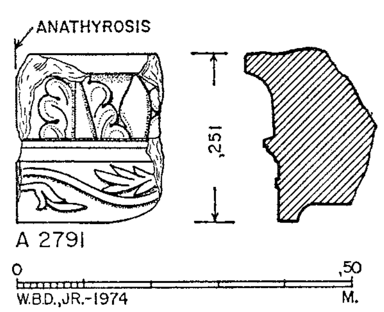


Fig. 9. Geison block A 2791.

building takes the form of a simple cavetto rather than the more common cyma recta. It is separated from the lower fascia by a fillet and a cyma reversa. What is strange on our geisa is the carved decoration on these two fascias (Pl. 88, e). The upper one, between crude and grotesque lion-heads of which no two are identical, contains a pattern of two *acanthi molles* separated by a water leaf. In some of the spaces only one-half of an acanthus leaf is employed on either side of the water leaf.[10] These degenerate acanthuses are much more typical of the early Christian than of the middle Roman era and, in fact, one of our fragments, when first found, was tentatively catalogued as early Christian.[11]

On the lower fascia there is a *rinceau* of floral calyxes, one springing from the other. Two tendrils also emanate from each calyx, to end in wild and imaginative floral forms. Since the floral pattern runs to the right on two of our blocks and to the left on the other three, there must have been a point of division. At another point, presumably on the opposite side of the building, the two lines had to come together again. We have this point at the left end of geison A 638a where the lines overlap in a rather naïve way.

The ovolo at the back of the corona of the geison, above the dentils, is carved in the form of a bead-and-reel.

Another unusual feature of the geison is the relation between the water-spouts and the circular channel cut into the top of the geisa some 0.18 m. back from the top front molding. On two of our blocks each lion-head is pierced so as to form a spout. The spouts, however, do not communicate with the channel, which one might assume was cut to act as a gutter. Furthermore on block A 638a the lion-heads are unpierced dummies. Whether the failure to pierce these heads was intentional or an oversight is conjectural. The Babbius Monument in Corinth has no lion-heads and no provision was made for controlling rainwater. The Southeast Stoa at the Agora in Athens has lion-heads, but the majority are dummies. In each of the round structures of the Nymphaion of Herodes Atticus at Olympia there is a channel like ours, but it is a real

of Ancient Athens, London, 1971, pp. 28-36, 432, 436-438 and *Hesperia*, XXIX, 1960, pp. 344-347), the Babbius Monument in Corinth of the 1st century after Christ (Robert L. Scranton, *Corinth*, I, iii, *The Lower Agora*, Princeton, 1951, pp. 17-32), and the round structures of the Nymphaion at Olympia of the 2nd century after Christ (E. Kunze and H. Schleif, *Olympische Forschungen*, I, Berlin, 1944, pp. 53-82, pls. 34-38).

[10] The Babbius Monument, which does not have lion-heads, employs a continuous running acanthus design on this band.

[11] The beginning of the use of a combination of acanthus and water plant on simas is briefly noted by M. Schede, *Antikes Traufleisten-Ornament*, Strassburg, 1909, p. 107. One of the best dated early examples is that on the sima of the temple of Concord in Rome, dedicated in A.D. 10: cf. Boëthius and Ward-Perkins, *Etruscan and Roman Architecture* (The Pelican History of Art), 1970, pl. 113. For the *acanthus mollis* cf. A. Xyngopoulos, Ἀρχ. Ἐφ., 1915, pp. 59-61. The pattern was obviously much more suited to a continuous surface as on a raking sima or pilaster capital than to a punctuated surface like that of our sima.

gutter connected to functional lion-heads; there is also, however, a second channel, back of the first one, which appears as meaningless as ours. It has been suggested that this second channel at Olympia was intended to hold an iron band to keep the geisa from being displaced by the thrust of the large slabs which composed the pyramidal roof.

The configuration of the tops and backs of our geison blocks is also somewhat unusual. The top of a cornice normally is either level or slopes downwards toward the outer face. Ours slopes in the opposite direction, downwards toward the back. Moreover the tops are extremely roughly finished as if for the purpose of creating a non-slip, adhesive plane at the contact of two masonry surfaces, and indeed there are traces of mortar on these upper surfaces. The back of a cornice normally is cut vertically. Ours is undercut at the bottom so that the back projects inwards and upwards. Furthermore this sloping back surface is thoroughly worked with a pick as if for the purpose of giving a good bond for a cement coating. The sloping back of the geison course would form an ideal beginning of a dome, at its base, and the roughened sloping top surface structurally forms an ideal spring point for the body of a brick and cement dome. One should remember at this point that the majority of the hook clamps on the top surface of the geisa were not recessed. The raised clamps would create no problem, however, with this type of masonry construction.

A section of a brick and mortar dome was excavated in 1951 in a late Roman deposit just north of the circular building (Figs. 2, 10).[12] By happy circumstance it is from the bottom of the dome and retains the concave horizontal and vertical curvature of the inner surface. The estimated diameter is very close to that given by the geison blocks. The fragment is composed of broken red bricks, 0.04 m. high and 0.12 m. wide, set horizontally and on edge in random fashion and bonded with varying thicknesses of hard, gray mortar. There can be little question that this fragment belongs to our building and that a dome was employed over the monopteros.

There exist other fragments of the same green marble of which the columns were made. These were found in the general vicinity of our building but are not necessarily attributable to it. The only one which might belong, A 1789, was found in a marble pile some 72 meters west of the monopteros. It has an outer convex face and a horizontal joint surface (Fig. 12). The estimated diameter from the curve is 6.16 m. If it belongs to the monopteros it would have to come either from a parapet wall between the columns or from the edge of the roof above the geison course where it might have acted as a screen to hide the bottom of the dome. The back surface, however, is roughly hacked and displays indentations made by a pointed tool. The fragment gives one the feeling that it is a piece of veneer, or facing, from whatever building it comes.

[12] *Hesperia,* XXI, 1952, p. 103.

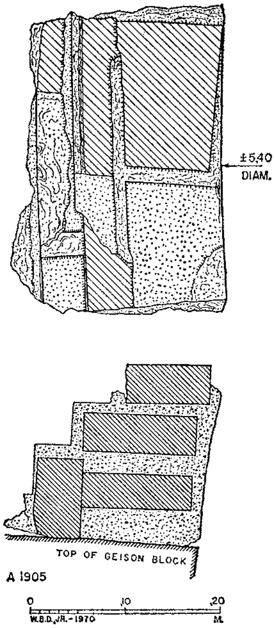


FIG. 10. Dome fragment A 1905.

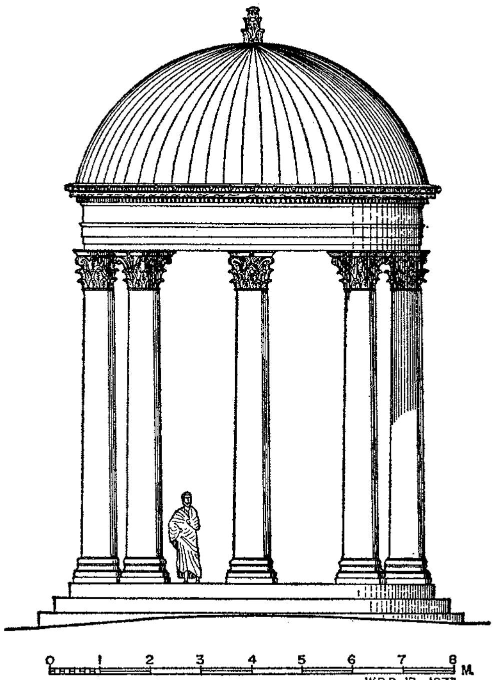


FIG. 11. Restored Elevation looking north.

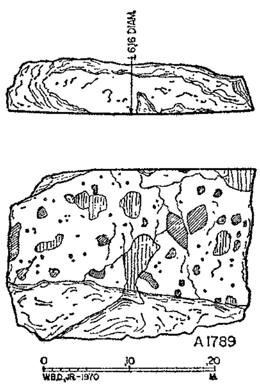


FIG. 12. Fragment A 1789.

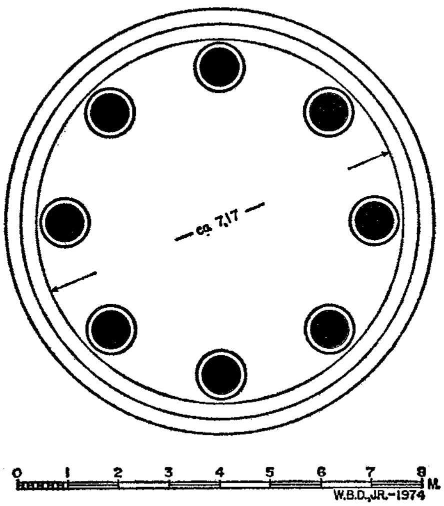


FIG. 13. Restored Plan.

THE RESTORATION

The extant blocks of the circular foundation give a diameter at that level of 8.50 m.[13] Because of the care taken to get them quite true to line, one may infer that the missing upper courses were not much recessed. We know the elevations of the construction fill around the building—i. e. the layer with the green marble working chips. This was highest at the south and lowest at the north, following the general slope of the terrain. At the west the ground was slightly lower than at the east (Figs. 2, 11). The problem arises, however, as to the height of the floor of the monopteros and the architectural treatment of the building between the ground and the floor level.

We must turn for a moment to the geison course. Our large blocks yield computed outer diameters for the course of 7.388, 7.372 and 7.060 m. An average would be 7.273 m., but since the diameter given by A 638a (Fig. 6) deviates from the rather constant one given by the other two blocks, a compromise of 7.370 m. has been employed. The distance from the top outer molding to the center of the lower resting surface of the geison averages 0.590 m. The diameter across the building on the centerline of the lower resting surface of the geison course is therefore *ca.* 6.19 m. The bottom edge of the missing epistyle-frieze course, because of the stepped-back outer moldings, would have been recessed *ca.* 0.10 m. from the top edge. We can now estimate the diameter across the building on the centerline of the epistyle course as having been *ca.* 6.09 m. This would also be the diameter between opposite column centers. From analogy with contemporary buildings, the column plinth should be about 42 percent greater than the lower diameter of 0.693 m. of the shaft, or *ca.* 0.98 m. The diameter across the building to the outer edges of opposing column plinths would therefore be *ca.* 7.07 m. Another canonical 0.05 m. to the stylobate edge would give us *ca.* 7.17 m. across the stylobate (Fig. 13).

We can now return to the problem of the restoration of the base of our monopteros. In the Roman period small round buildings were often placed on an elevated podium to give them more eminence and exterior steps were employed to facilitate access. The excavations around our monopteros, however, disclosed no trace of foundations for outer steps. If we assume that the masonry courses above the extant foundation blocks had a minimal set-back of about 0.05 m., at ground level the exposed masonry would be *ca.* 8.40 m. in diameter. Then, if we subtract from this our estimated stylobate diameter of 7.17 m., the difference allows for two very canonical stair treads of 0.30 m. each around the building which gives us a three-step crepidoma similar to that around the Tower of the Winds in Athens. Also these two stair treads fall directly over and have the same width as the foundation ledge cut in the bedrock at the eastern and southern sectors of the structure; the columns would then be supported by the packing in the more deeply cut central core. One must assume

[13] Previously published as 8.10 m. See e.g. *Hesperia,* VI, 1937, p. 354.

that the approach to the building was from the west and the north (Fig. 1). The restoration has been made accordingly with the floor a maximum of 0.90 m. above the ground level at the west (Figs. 2, 11).

From the colonnade there exist only fragments of the column shafts. The overall height of the columns, including base and capital, can be restored at about 9½ lower diameters of 0.693 m. or *ca.* 6.58 m.[14] There is no trouble in restoring suitable bases. The capitals, however, are slightly more problematical in that they might have been Ionic, Composite or Corinthian. A review of other small round buildings of the first and second centuries such as the round structures of the Nymphaion at Olympia, the Babbius Monument at Corinth, the Nymphaion at Argos,[15] and the temple of Palaimon at Isthmia[16] shows that a preponderancy of such buildings utilized the Corinthian capital. This type of crowning member for the columns has therefore been employed on our reconstruction.

The spacing, and therefore the number, of the columns used for the building is the next matter of concern. The Corinthian temple of Antoninus Pius at Sagalassus, of comparable date and column size, has a column spacing equal to 3.20 lower diameters.[17] Another temple of comparable size and date at Cnidus utilizes spacings of 3.73 lower diameters.[18] The much older Philippeion at Olympia was built with its outer columns 3.50 lower diameters from center to center. If we restore eight columns in our structure they would be spaced *ca.* 3.36 lower diameters on center which would be in line with the examples cited above (Fig. 13).[19] It is also reassuring that eight columns were used for the Babbius Monument at Corinth, the round structures of the Nymphaion at Olympia, and the Nymphaion at Argos.[20]

No part of the epistyle-frieze course has been identified to date. Since in the second century these two elements were normally carved together out of one block

[14] See W. B. Dinsmoor, *The Architecture of Ancient Greece*, 1950, p. 340 for comparable proportions.

[15] G. Roux, *B.C.H.*, LXXVIII, 1954, pp. 160-162 and LXXXI, 1957, pp. 663-665. On p. 160 Roux states that the use of the Corinthian order had become traditional for temples of this sort from the end of the Hellenistic period and that the Ionic order of the temple of Roma and Augustus was exceptional, having been influenced by the Erechtheum. See also Stella G. Miller, *Ath. Mitt.*, LXXXVIII, 1973, p. 193.

[16] Oscar Broneer, *op. cit.* (note 2), p. 110, frontispiece, and pl. 73.

[17] W. B. Dinsmoor, *op. cit.* (note 14), p. 340.

[18] *Ibid.*

[19] The Babbius Monument and the temple of Roma and Augustus are reconstructed with a little less than three lower diameter spacings, but the former is considerably smaller than our building and the latter employs an unusual arrangement of columns with a wider spacing at the entrance.

[20] Previous mention of our building has ascribed ten columns to it: *The Athenian Agora, A Guide*, 1962, p. 76; Thompson and Wycherley, *op. cit.* (note 3), p. 203; W. Binder, *Der Roma-Augustus Monopteros auf der Akropolis in Athen und sein typologischer Ort*, Stuttgart, 1969, pp. 107-110.

on small to medium-sized buildings, and the height of the entire entablature, including the geison, was approximately one-fifth of the column height, this intervening course between the capitals and the cornice may be reconstructed with some assurance (Fig. 3).

The design of the geison blocks has already been discussed. It is interesting to note that of our three major pieces from this course (Figs. 5-7) the two with the pierced lion-heads are longer than the one with dummy spouts. In fact, from the relationship of the lewis-hole cutting and the center lion-head which are on axis on block A 638c (Fig. 7), this geison can be restored at exactly the same length as A 638b, 2.222 m. The short block with dummy spouts is only 1.435 m. long. If one assumed that these two greater lengths were standard, nine of the large blocks and two of the short ones would fill the course with an excess of only 0.047 m. along the outer circumference. It is difficult to believe that there would be any modular pattern in the lengths of Ionic geison blocks in the Roman period, but if this relationship of sizes were maintained, there might have been two short ones with dummy spouts adjoining each other above the intercolumniation which was the normal entrance, to protect the visitor from rain. Two of these short blocks fit almost exactly the space between the centers of two columns. Also it is at the left end of the shorter geison A 638a, or very close to the center of our hypothetical entrance to the building, if we place this block on the right, that the floral calyxes on the lower fascia of the course change direction.

The brick and mortar dome fragment A 1905 (Fig. 10) is too rough to allow for any accuracy of measurement of its vertical curvature. One must assume, as was normal in geometrical Roman construction, that the dome formed a complete hemisphere.[21] The plaster model of the Athenian Agora in the Stoa of Attalos shows our building with a conical roof which is supposed to represent the typical pyramidal roof usually employed on small round buildings in Greece. It is impossible, however, to utilize this type of roof in conjunction with our interior dome. The trapezoidal slabs of which such a roof is formed would, at the closest point of tangency, so diminish the thickness of the inner dome construction that it would be unsound. Furthermore there would be little purpose in combining two different structural systems when either one is sufficient by itself. Our roof must have been domed outside as well as inside.[22] As for the outer covering of the roof, it may have been of

[21] Cf. Vitruvius, IV, 8, 3: *in medio tecti ratio ita habeatur, uti, quanta diametros totius operis erit futura, dimidia altitudo fiat tholi praeter florem.*

[22] The classic example of a sophisticated exposed dome is that on the Pantheon in Rome of *ca.* A.D. 118-128. Based on coins, Oscar Broneer shows a dome on the temple of Palaimon at Isthmia, *op. cit.* (note 2), p. 111, frontispiece, and pls. 42, b, 73. For a dome-covered monopteros on a Roman lamp of the first half of the third century see J. Perlzweig, *The Athenian Agora*, VII, *Lamps of the Roman Period*, Princeton, 1961, pl. 17. A dome is indicated for our own round building at the Athenian Agora by W. Binder, *op. cit.* (note 20), fig. LVII.

bronze as was that of the Pantheon in Rome. However, there is no trace of fastening for this material on the top of the geison blocks and there are no remains of stain on the marbles. It is more likely that the roof was covered with cement as were those of the Hunting Baths at Leptis Magna,[23] the tombs of the Isola Sacra at Ostia,[24] tombs at Anamur in western Cilicia [25] and possibly the heroon on Sikinos.[26]

The channel back of the lion-heads on the geisa, which is completely disassociated from the spouts, is very roughly and irregularly cut. For this reason, and because there is no rust stain, it is doubtful that it contained an iron ring for holding the geisa in place as has been suggested for the round structures of the Nymphaion at Olympia. Also the thrust of a semi-circular dome is much less than that of the inclined tiles of a pyramidal roof. It is more probable that the channel acted as a seal, that the thick layer of cement which presumably formed the outer covering of the dome was carried down into the trough so as to cover the junction between the masonry of the dome and the marble geison and so to prevent seepage which might have damaged the plaster on the inside of the dome. Some tough cement remains in the channel at certain points.

Finally there remains the matter of how the rain water was dealt with, and the evidence is completely negative. If the water was channeled to the lion-heads which had pierced spouts, it must have been effected in some manner by the covering of the dome. Possibly no effort was made to control the flow of water, as at the Babbius Monument in Corinth and along much of the Southeast Stoa in the Athenian Agora.

Despite the fact that it was a small building, our monopteros must, because of its height, have been quite a prominent landmark. The top of the dome rose up to an elevation above that of the second floor of the Stoa of Attalos (Fig. 3). The capping finial, which further increased its height, is restored *exempli gratia.*

The Function of the Building

It has been suggested that this small round structure functioned as a fountain-house, partly on the theory that the deep excavation and the stone packing under the building might have supported a water basin. In the southwest quadrant, however, the level of the bedrock was not cut down as it was in the east and south, and in the northwest, because of the upper rubble core which is still partially *in situ*, we do not know what happens. The layered mass of rubble and mortar fill was certainly constructed to support a stable floor. This may have been done to support a statue, or a water basin, or perhaps it was done solely in the interest of good con-

[23] Boëthius and Ward-Perkins, *Etruscan and Roman Architecture*, 1970, p. 475, fig. 176 A, pl. 245.

[24] R. Meiggs, *Roman Ostia*, Oxford, 1960, pp. 455-470, pl. XXXIIIa.

[25] "The Necropolis of Anamur," *Belleten*, XXIX, 1965, pp. 25-48.

[26] A. Frantz, H. A. Thompson and J. Travlos, *A.J.A.*, LXXIII, 1969, p. 403.

struction. The Romans were known to build massive concrete foundations within the entire area of their buildings as under the temple of Palaimon at Isthmia.[27] Sometimes these solid foundations were extravagantly constructed of squared blocks as under both the relocated temple of Ares and an unidentified temple in the South Square in the Athenian Agora.[28]

Evidence to support the theory that the monopteros functioned as a hydraulic installation was a pillaged water channel found in 1954.[29] This robbed-out channel, discovered while digging two lime-slaking pits for use in connection with the reconstruction of the Stoa of Attalos, ran in a northerly direction towards our building.[30] It was traced for a length of six or seven meters to a point 1.50 m. short of our foundations. The bed of the trench, extended, would have abutted against the building somewhere within the height of the riser of the lowest step as restored in Figure 3.

Because of the pillaged channel we cannot exclude the possibility that our structure served as a fountainhouse, but one should bear in mind the other uses to which a monopteros was put.[31] One thinks especially of its function as a baldacchino above a statue of a divinity, especially Aphrodite.[32] Round temples also housed other divinities and heroes such as Dionysos and Herakles [33] and, of course, Palaimon at Isthmia.

[27] Oscar Broneer, *op. cit.* (note 2), p. 109, plans VII, IX, pl. 41, a, b.

[28] *Hesperia*, IX, 1940, p. 5 and XXXVII, 1968, p. 42.

[29] It was thought, as additional evidence, that a 1.10 m. length of lead piping found in 1937 and a section of a drain found in 1938 might be ascribed to the monopteros. The lead piping, however, was found 40 meters south of the building, which makes its association rather tenuous, and the drain, found 15 meters to the north of the building, is of much too late a period, certainly post-Herulian. It ran over the ruins of the south porch of the Hadrianic Basilica at the level of the euthynteria.

[30] The reference to the channel in the excavator's notebook merely states: "On starting the excavation of the pits we encounter a little fill of the Roman period probably 2 cent. A.D., especially in the pillaged trench of a water channel which runs *ca.* N-S through the area, heading for the Round Bldg."

[31] For general reference to monopteroi see F. Robert, *Thymélè*, Paris, 1939; N. Κοντολέων, Τὸ Ἐρέχθειον, Athens, 1949; W. Binder, *op. cit.* (note 20).

[32] Phyllis Lehmann, *Roman Wall Paintings from Boscoreale in the Metropolitan Museum of Art*, Cambridge, 1953, pp. 118-124, discusses various wall paintings which depict round temples with Aphrodite standing either inside or outside the buildings. See Iris Love, *A.J.A.*, LXXIV, 1970, pp. 154-155 and LXXVI, 1972, pp. 70-75 and 402-404 for the round temple of Aphrodite at Cnidus. Athenaeus, *Deipnosophistae*, V, 205, e, mentions a rotunda-shaped shrine of Aphrodite, in which was a marble statue of the goddess, on the river boat of Ptolemy Philopator. For Roman lamps which depict round temples sheltering a statue of Aphrodite see Walters, *Catalogue of the Greek and Roman Lamps in the British Museum*, p. 63, no. 439 and J. Perlzweig, *op. cit.* (note 22), p. 117, no. 751, pl. 17.

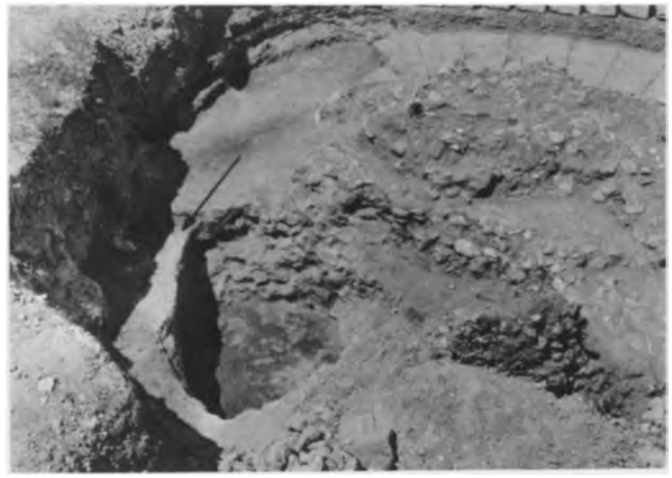
[33] Phillis Lehmann, *op. cit.*, pp. 123-124. G. Kawerau and A. Rehm, *Das Delphinion in Milet* (Theodor Wiegand, *Milet*, I, iii), Berlin, 1914, pp. 409-410, pls. I, VII, suggest that their round building may have been a monopteros and seemingly contained a cult image.

One cannot even rule out the possibility that our building, in an area thick with ancient tombs, was a heroon. However, we actually have no better idea now as to what the monopteros housed than did the original excavators of 1936. It is possible that future excavations to the east of the Athenian Agora will bring to light an inscribed architrave block from the building which will settle this problem.

W. B. DINSMOOR, JR.

AMERICAN SCHOOL OF CLASSICAL STUDIES AT ATHENS
ATHENIAN AGORA EXCAVATIONS

a. Foundations from southeast



b. Ledge in bedrock at south (from east)

c. General view of geison blocks

d. Geison blocks from above

e. Detail of design on geison blocks