

evidence.⁹ If relatively few capitals were still in place when Hadrian undertook the project, he could easily have replaced them with interior capitals with the same form. Wolf-Dieter Hellmeyer has recently published an exhaustive collection of the Roman types,¹⁰ but the dearth of

On Determining the Dates of the Olympieion Capitals in Athens

The dating of the Corinthian capitals of the Olympieion is still a vexing problem.¹ Vitruvius² gives the impression that the marble temple as designed by Cossutius for Antiochos IV (175-164 B.C.) was fairly complete in his day. Even though Sulla had removed some of its capitals to Rome in 86 B.C., the Augustan architect could still describe the architraves and mention the appointments of the cella. Most significantly, he could discern the structure of the roof.³ Yet one contemporary witness, Livy, could write that Antiochos had simply "started" the temple, while another, Strabo, could state that he had left it "half-finished."⁴ To posit the extreme possibilities in terms of capitals, this evidence could be explained by assuming that as few as four capitals (two exterior and two interior) or as many as, say, one hundred were in place during Augustus's reign.⁵ Some further construction may have taken place at that time, but it was left to Hadrian to complete the building.⁶

To which of these phases do the sixteen extant capitals belong? Confusion reigns in this area of research.⁷ In general statements, the problem is sidestepped by assuming that the Roman capitals would have been copied from the remaining Hellenistic ones.⁸ Conveniently enough, this hypothesis permits one to write about the design of the second century B.C. type--of which there are precious few examples anywhere--regardless of the date of the existing capitals. The contrary proposition, that all the capitals we have are Hadrianic, does not necessarily do violence to the

evidence.⁹ If relatively few capitals were still in place when Hadrian undertook the project, he could easily have replaced both exterior and interior capitals with his own up-to-date versions. Wolf-Dieter Heilmeyer has recently published an exhaustive collection of the Roman types,¹⁰ but the dearth of Hellenistic parallels leaves the root question still in doubt.

In this paper, evidence from construction techniques is used to identify Hadrianic and non-Hadrianic parts of the building. Dates are suggested for most of the capitals on this basis, without regard to stylistic analysis. Previously unrecognized Hadrianic material is assigned to the interior colonnade. In general, the progress of the temple's construction is partially clarified.

Of the remaining columns, thirteen stand at the SE. corner of the temple with the connecting architraves still in place. The three others are the third, fifth, and seventh from the W. end of the S. interior peristasis. The middle column of these three lies collapsed on the ground. Aside from these, numerous blocks and drums of the marble superstructure are displayed on the site. In these scattered parts, one can see two distinct types of lewis hole. One type is found in column drums as well as other members; the other is not found in drums. Those drums which lack lewis holes have empolion cuttings, and conversely, those which have lewis holes lack empolia. These variations in construction technique identify two chronologically distinct construction phases.

The later group consists of the drums and capital of the fallen column (excluding the base) and a battered architrave block from the interior peristasis, now lying S. of the temple. The lewis holes in these blocks were all roughly cut with a pointed chisel. In transverse section, they are wedge-shaped,

so that the openings at the surface of the blocks are nearly half as wide as they are long. Both ends (the working surfaces of the lewis) are slanted roughly 80° from the bed-face. (Figs. 1-3)

All the lewis holes that can be observed in Hadrianic material in Athens are of this same type. Small examples were used to lift the coffers of the Library of Hadrian and many of the blocks of the Hadrianic peribolos of the Olympieion sanctuary itself.¹¹ The best parallels are in the cornice and frieze blocks of the W. façade of the Library of Hadrian (Fig. 1c). They are of the same shape, size and technique as the lewis holes in the fallen column (Fig. 1a). These broad, rough-cut lewis holes were the standard type in Attica during the second century C.E. Numerous similar examples are found in the blocks of the Roman Gymnasium in the Athenian Agora¹² and in the column drums of the Greater Propylaia of Eleusis.

A reassembled architrave block of the inner peristasis of the Olympieion (now at ground level at the E. end of the temple) and a plinth block (now lying S. of the temple) were lifted with an entirely different type of lewis hole (Figs. 1, 4, 5). In contrast to those just described, these were cut with a flat chisel. They are of relatively uniform width from top to bottom, longer and narrower, and one end is nearly perpendicular (88° from bed-face).

If there is even a modicum of accuracy to Francis Penrose's observations on the architraves which remain in place at the SE. corner of the temple, then the lewis holes in them are of this type. He typifies these cuttings in a scale drawing (enlarged in our Fig. 1d).¹³ The measurements of this drawing, despite its schematic character, vary less than ten percent in any dimension from those of the blocks just described (Fig. 1e-f). His general drawing of

the upper surface of the standing architraves (one block enlarged in our Fig. 5b),¹⁴ indicates that all the lewis holes there are of the same surface shape as these--a form which can hardly be confused with that of the broad Hadrianic lewises. These long, narrow slots are not found in any of the column drums.

Aside from the drums of the fallen column, each of which has one wedge-shaped lewis near the center of the upper bed-face (and no empolia), there are eleven drums on the site with the center of a bed-face preserved. All of these have empolion cuttings;¹⁵ none a lewis. In general, every piece of the peristasis on which the relevant details can be observed shows us only one of these three types of cuttings, and not one of the cuttings can have been recut from either of the other types.

The broad, wedge-shaped lewis holes with two markedly slanted ends are characteristic of second century C.E. Attic work; indeed, they are easily recognized as a particular variant of the so-called Roman type. The narrower ones with one nearly perpendicular end and the use of the empolion were more common in Hellenistic than in Roman construction. Moreover, column drums were not lifted by means of lewises until rather late in the Greek system.¹⁶ We are, however, dealing with a peculiarly ticklish chronological problem, trying to distinguish between Antiochene, Augustan, and Hadrianic building methods, which have not yet been defined. To test the chronological significance of the data at hand, we confine ourselves to Attica, and adduce for comparison large-scale column drums of the period in question. From these we can estimate when empolia were dispensed with, when drums began to be lifted by the lewis, and when the Attic builders switched over to the later type of lewis. Meagre but useful evidence is provided by some

monuments in the Athenian Agora. There are, understandably, no precise parallels for the gigantic Olympieion drums. The drums of the Stoa of Attalos already had lewis holes and lacked empolia.¹⁷ Three of the Augustan commemorative columns in front of that stoa were erected using lewises with either one end or both slanted.¹⁸ All are rather carefully cut slots, none with the broad opening of the later type. A Sullan column and another Augustan one in the same row lack lewis cuttings.¹⁹ All five columns lack empolion cuttings. The Augustan drums of the Odeion of Agrippa lack both types of cuttings, while the Corinthian capital from that building has two narrow lewises, both having two slanted ends.²⁰ If the Augustan date for the Erechtheion repairs be accepted,²¹ the lewis holes therein corroborate the impression that in Attica at that time lewis holes were still carefully cut for a snug fit, and single-slant lewises were still occasionally used. As for the drums, the evidence suggests that the empolion was little used at that time; a centrally placed lewis appears in its stead as early as the second century B.C.

Altogether, the evidence of these building techniques leads us to propose that: (1) the fallen column and the one architrave fragment are Hadrianic; (2) the loose drums with empolia are most likely Hellenistic; and (3) the other architraves (and therefore the columns under the standing architraves) and the plinth block could be Augustan, but are more probably Hellenistic. The last two groups should be assigned together to the Hellenistic phase.

Two capitals of the peristasis remain to be discussed: the third and seventh from the W. end. Since we cannot gather technical evidence on these two, we are forced to fall back on points of style. There are minor differences among all the capitals, but the seventh from the W. end stands out as clearly different from all the rest.²² Heilmeyer²³ has put together a very strong case for dating this capital early Augustan. We have found the neighboring column to be Hadrianic. Both this and the last preserved column in this group are indistinguishable from the columns at the S.E. corner which we call Hellenistic. It therefore seems reasonable to consider the last column, like its neighbor, Hadrianic.

Two drums and the lower half of a Corinthian capital in the National Gardens nearby seem to belong to the interior colonnade of the Olympieion. These Pentelic marble pieces are from columns that were smaller than the exterior columns of the temple, but larger than that reconstructed by Penrose²⁴ from a flute fragment which he found in his excavations at the Olympieion. On account of their size and material, these pieces can hardly be from any other building than the Olympieion. All three of them have the same rough wedge-shaped lewis holes which we have noted in the other Hadrianic drums and capital. In style, the capital is clearly related to those of the peristasis, (Fig. 6a), but the precise parallels are in the Arch of Hadrian (Fig. 7b) and in a column capital (Fig. 7a) and a matching anta capital (Fig. 6b) in the Asklepieion on the S. slope of the Acropolis.²⁵ Apparently, this limited and rather odd family of Hadrianic capitals originated in the interior colonnade of the Olympieion.

But is this interior capital a Hadrianic variation of the exterior order, or is it a copy of the

original Hellenistic interior capitals? The most striking idiosyncrasy of this capital is the unusually large size of the circular openings between the leaflets and the prominent rings which encircle them. This rare trait is paralleled in the second century B.C. capitals of the Bouleuterion of Miletos (Fig. 8a) and the "Harbor Sanctuary" in Kos (Fig. 8b).²⁶ We should therefore posit a Cossutian original, separate and distinct from those of the peristasis.

In 1923, Gabriel Welter proposed an ingenious theory to explain the apparent discrepancy among the Augustan accounts of Cossutius's work (above, p. 1).²⁷ He held that the remaining capitals fell into three stylistic groups representing the three phases of construction: the eastern group Hellenistic; two good Hadrianic copies at the W. end; and a solitary Augustan capital between them. The building which seemed so complete in Vitruvius was the Cossutian eastern half of Strabo's half-finished temple. During the abortive Augustan phase which could be inferred from Suetonius, a short section of the western half was tacked on where Cossutius had left off, leaving the western end to Hadrian.

Since Welter gave none but rather curt comments on style to support his theory, it did not carry any more weight than any of the others. It did seem unlikely that among these few columns we should have examples from all the different phases of construction.²⁸ The technical evidence presented here, together with Heilmeyer's extensive stylistic study, provides a substantive basis for just the kind of theory Welter suggested.

NO !
 Aug cap =
 7th/8th W.
 end
 Yes! he
 means
 between E.
 + W. groups.
 note semi-
 colon.

FOOTNOTES

1. Thanks to the American School of Classical Studies in Athens, I had support for 1972-73 from the G.H.McFadden Fellowship and two years of guidance and assistance for study in Greece. This paper represents just one of many benefits I owe them. Thanks to Margot C. Camp for permission to read her unpublished study of the Olympieion.
2. De Archit., Praef.7.15; R.E.Wycherley, "The Olympieion in Athens," GRBS 5 (1964) 169 (hereafter, "Wycherley").
3. De Archit. 3.2.8. To tell that the building was hypaethral, Vitruvius must have seen a complete cross-section of the roof over the cella wall and interior columns somewhere in the building.
4. Livy 41.20.8; Strabo 9.1.17. // On Sulla: Pliny N.H. 36.45.
5. Out of a total of 104 exterior columns and an undetermined number of interior columns.
6. Augustan work planned: Suetonius, Augustus 60. Actual construction doubted: Wycherley, 171. On Hadrian: Pausanias 1.18.6; Philostratos Vit.Soph. 1.25.6.
7. For example, W.=D. Heilmeyer, Römische Normalkapitell 8. (RömMitt 16. Erganzungsheft). (Heidelberg 1970) 57 with note 237 (hereafter "Heilmeyer") says all are Hellenistic except for the seventh from W. end, which is Augustan, versus P. Graindor, Athènes sous Hadrien, (Cairo 1934) 222, who believes all Hadrianic. See Wycherley's comments 171-172.
8. W.B.Dinsmoor. The Architecture of Ancient Greece, 3d. ed. (London and New York 1950) 281; D.S. Robertson, Greek and Roman Architecture (Cambridge 1945) 161; A.W.Lawrence, Greek Architecture, (Harmondsworth 1957) 212; Th. Fyfe, Hellenistic Architecture... (Cambridge 1936) 109; J. Charbonneaux, R. Martin, Fr. Villard, Grèce Hellénistique ((Paris) 1970) 25-27; C.M.Havelock, Hellenistic Art..., (London 1971) 83.

9. Graindor, loc.cit. (above, n. 7); A.D.Fraser, "The Age of the Extant Columns of the Olympieion at Athens," Art Bulletin 4 (1921) 12-18; A.W.Byvanck, "Quelques comments sur l'architecture hellénistique," BAntBeschav 24 (1949) 39-40 held that few columns and capitals were produced by Cossutius, that some survive, but did not specify which. Wycherley, 170 n. 33, points out that Graindor (and this is true of the others) argues "in defiance of Vitruvius." That point is answered here.
10. Heilmeyer, op.cit. (above, n. 7).
11. J. Durm, Die Baukunst der Griechen 3d. ed. (Leipzig 1910) noted the lewises in the Olympieion fallen column, p. 154, fig. 127. Date of peribolos: J. Travlos, Πελοδομική ἐξέλιξις τῶν Ἀθηνῶν... (Athens, 1960) 111.
12. H.A.Thompson, "The Odeion in the Athenian Agora," Hesperia 19 (1950) 109-116, esp. No.3, p.113 fig. 19, Pl. 73a; No.6, p.114, fig.20; No.7, P.114, fig. 20, Pl. 73d.
13. F.C.Penrose, Principles of Athenian Architecture, 1st.ed. (London 1851) and 2nd. ed. (1888) Pl. 38.
14. ibid. Eight columns are shown (the first four in the two southernmost rows at the east end) with part of the architraves leading to the third façade column and the one behind it. Most of the lewises are shown 20±1 cm. long and 4-5 cm wide. The broad lewises are 15 by 8 cm. on average. Only the lewises in the two architrave blocks at lower right in the engraving (connecting the third and fourth columns of the S. interior peristasis) could be of the broad type.
15. Empolia: 10-15 cm. on a side, 7.5-13 cm. deep. In five cases, we can definitely check an upper face.
16. R.Martin, Manuel d'architecture grecque (Paris 1965) 216-219 (lewis), 294-295 (empolia) with ill.; A.K. Orlandos, Τὰ Ὑλικά Δωμῆς τῶν ἀρχαίων Ἑλλήνων, 2.

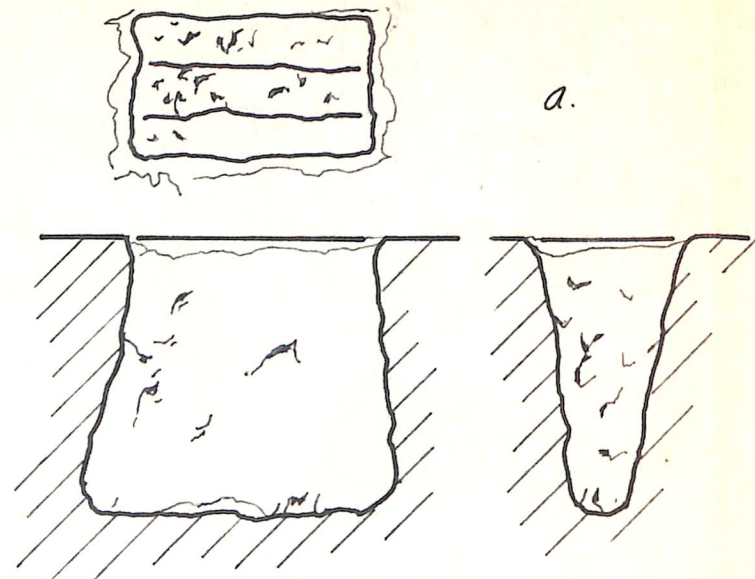
- (Athens 1958) 172-175 (lewis), 176-7, 192-195 (empolia), 201 with nn. 7,10 (central dowels in drums).
17. H.A.Thompson, The Stoa of Attalos II in Athens (Excavations of the Athenian Agora. Picture Book 2) (Princeton 1959) fig. 16 with caption.
18. Inscribed columns: (a) IG²II, 4115 after 34 B.C. lewis reused as dowel, apparently both ends slanted; (b) IG²II, 3243, before 4 C.E. lewis, both ends slant approx. 81° possibly recut; (c) IG²II, 4155, ca. 7 C.E. lewis with one end slanted. All marble.
I AM INDEBTED to Wm.B.Dinsmoor, Jr. for suggesting that I apply the evidence of these dated column drums to my topic, and for examining with me the evidence both at the Olympieion and in the Agora.
19. Augustan: IG²II, 4158, ca. 20 C.E. Pentelic marble. Sullan: H.A.Thompson, "Excavations in the Athenian Agora--1949," Hesperia 19 (1950) 318, Pl.100a, before 61 B.C.
20. H.A.Thompson, "The Odeion in the Athenian Agora," Hesperia 19 (1950) 47, Pl.35d (drums, A 1145 in Pl.); 44 (with n.1), 46, Pls. 32, 33a (capital) lewises.
21. The date depends on the identifications of the round Temple of Rome and Augustus with the foundation E. of the Parthenon. For bibliography, see J.Travlos, Pictorial Dictionary of Ancient Athens (London, [1971]) 494. The evidence is in: Stevens-Patton, The Erechtheum (Cambridge^{Mass}, 1927) 188-189, 223-224, 478-479 (dating of repairs) with Pls. 19, 20.7, 27.7.
22. Heilmeyer, loc.cit. (above, n. 7) with refs.; G. Welter, "Das Olympieion in Athen" AthMitt 48 (1923) 182.
23. Heilmeyer (above, n. 7).
24. Penrose, op.cit. 84-85 with figs. 13, 14. (cont'd)

Penrose's fragment: width of arris (upper end of column) 2.5 cm. Reconst. upper diam. = 0.886 m.

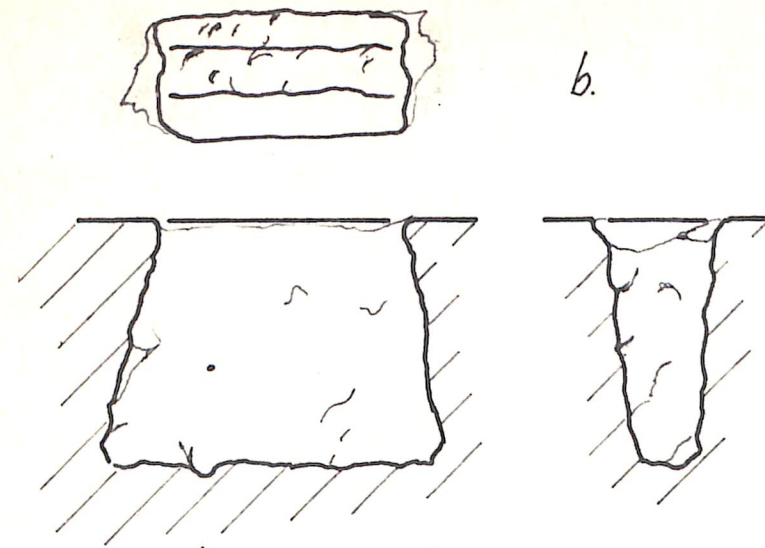
Drums in National Gardens: min. width of arris 3.0 cm.; min. diam. 1.19 m. Capital (lower half) height 72 cm.; diam. top 1.55 m., near bottom 1.25 m.

25. Arch of Hadrian: J. Stuart and N. Revett, Antiquities of Athens III (1794) Pls. 6-10. Asklepieion: Ph. Versakis, EphArch (1913) 69, figs. 22-23; on these, and other members of the family of capitals, see Heilmeyer 72-73 with refs. and Pls. 17-19.
26. Bouleuterion of Miletos: H. Knackfuss, Milet II.1 Das Rathaus von Milet (Berlin 1908) Pl. 12 and therein, Th. Wiegand, "Die Entstehungszeit des Rathauses," 95-99. "harbor Sanctuary" in Kos: C. Börker, "Die Datierung des Zeus-Tempels von Olba-Diokaisareia in Kilikien," AA (1971) 52 with n.133 and figs. 6, 7 (p.49).
27. Welter, op.cit. (above, n. 22), 183-184.
28. Wycherley's (1965) comment that the theory was "highly conjectural" (p.172) was reasonable at the time.

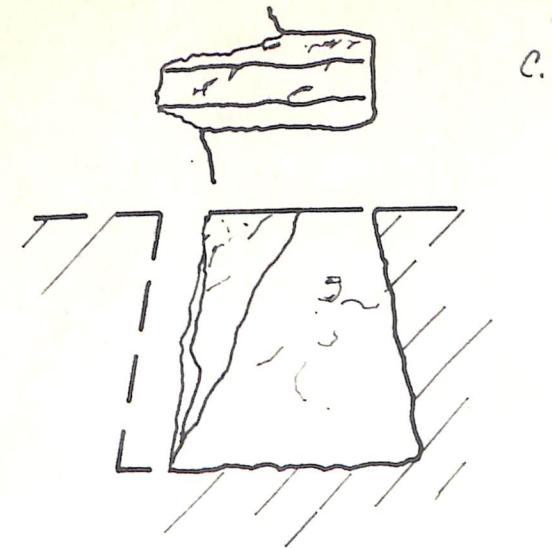
Gordon, Olympieion Figure 1.



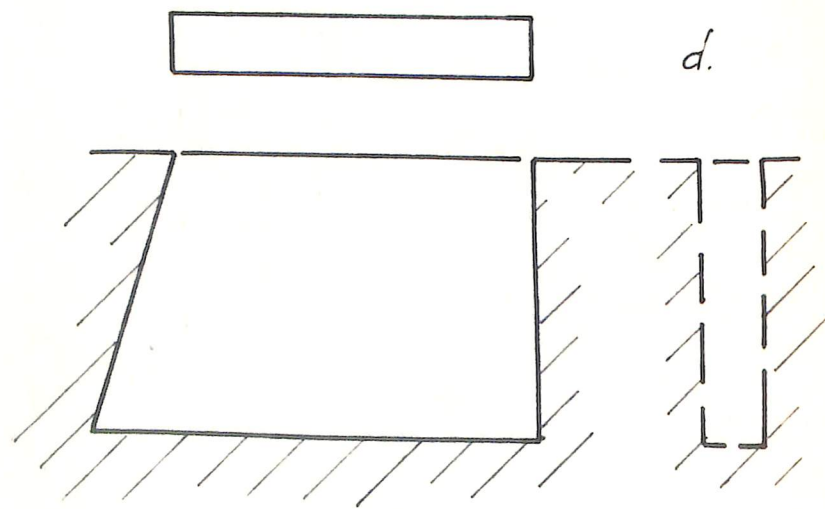
A. Olympieion, Fallen Capital.



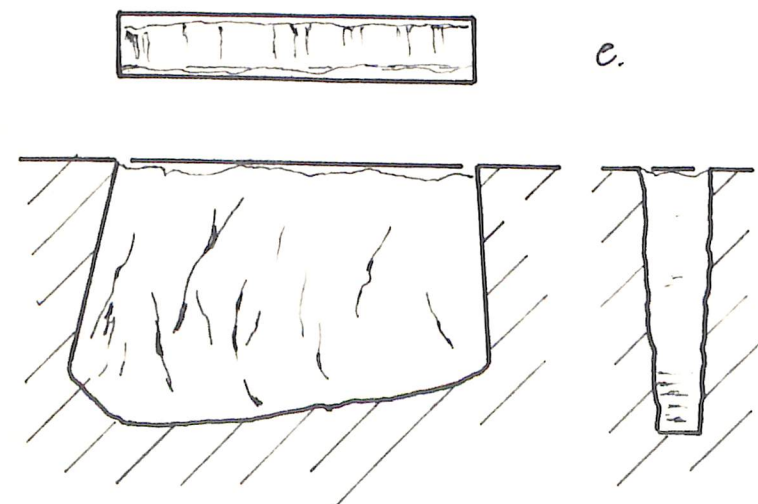
b. Olympieion, Architrave Fragment.



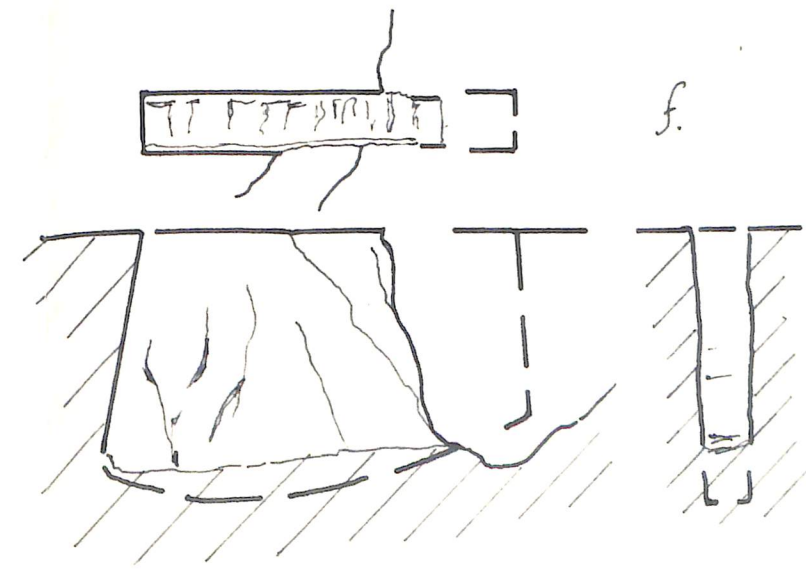
c. Library of Hadrian, Frieze Block.



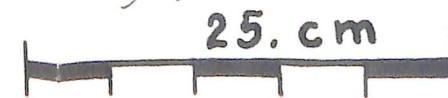
d. Olympieion, Architrave in Place.
(enlarged from Penrose, Plate 38).



e. Olympieion, Reassembled Architrave.



f. Olympieion, Plinth Block.



PLB

FIGURE 1. OLYMPIEION LEWIS HOLES.

Gordon, Olympieion, Figure 4.

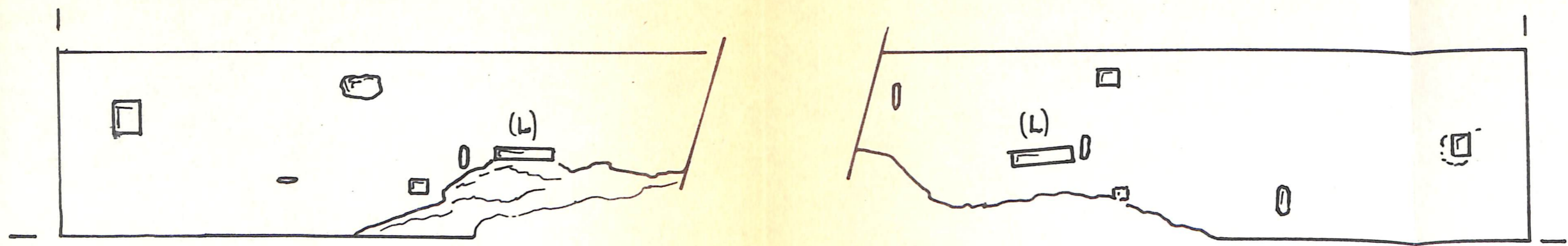
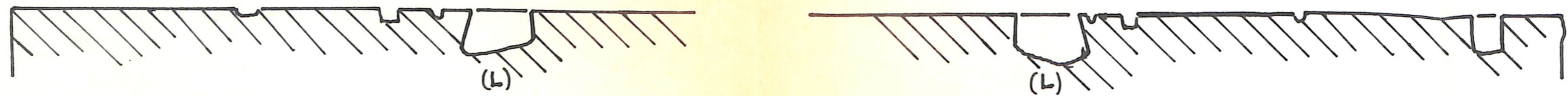


Figure 4a. Top View (above) and Section (below) Reassembled Architrave.



(L) = Lewis Hole Scale 1:20

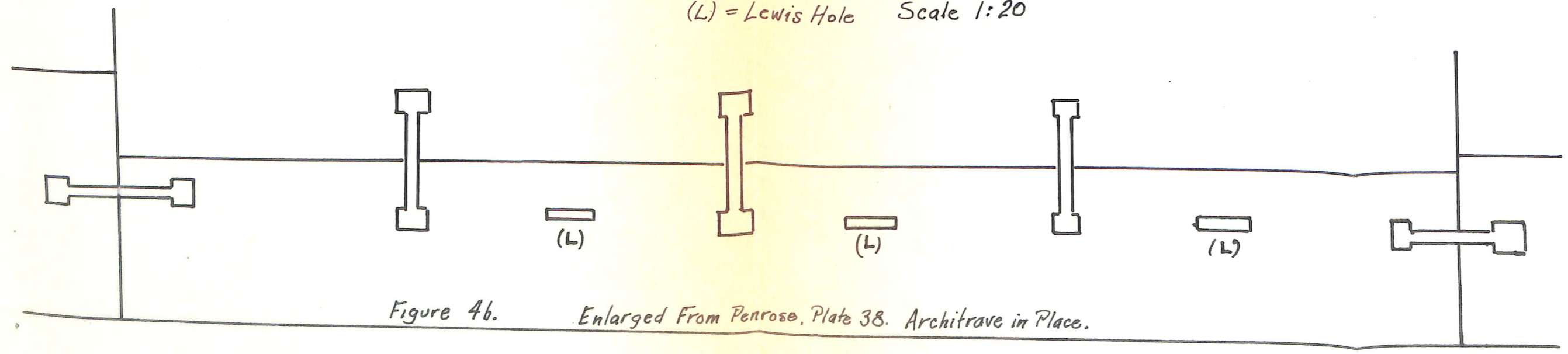


Figure 4b. Enlarged From Penrose, Plate 38. Architrave in Place.



Lewis Hole, Olympieion, Athens.



Figure 2. Lewis Holes in Fallen Capital
Olympieion, Athens.



Figure 3a. Architrave Fragment with Broad
Lewis Hole, Olympeion, Athens.

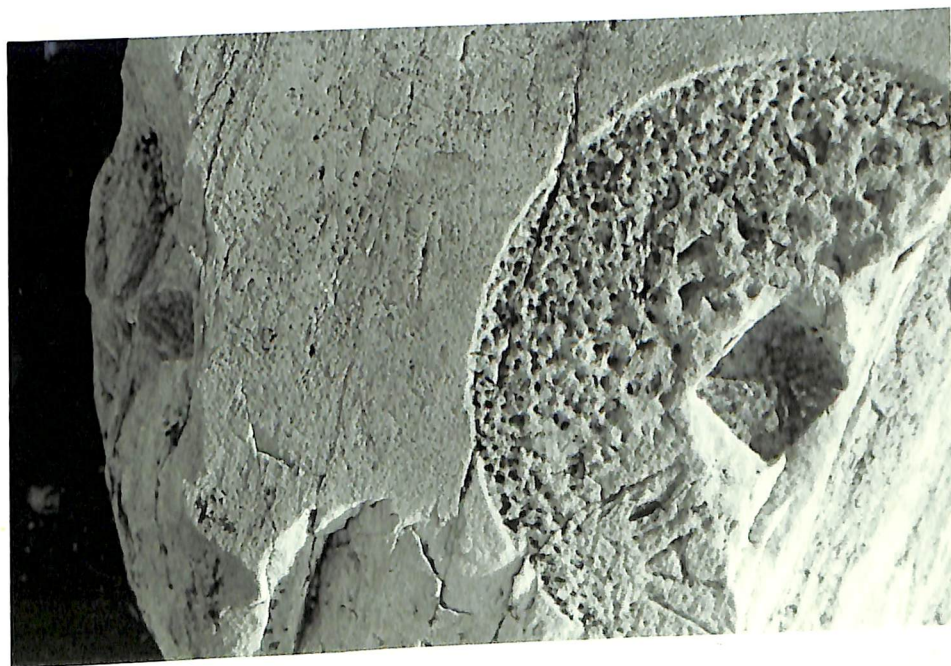


Figure 3b. Column Drum of Peristasis with
Empolion, Olympeion, Athens.

Gordon, Olympieion, Figure 5.

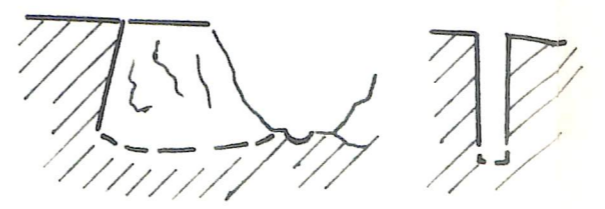
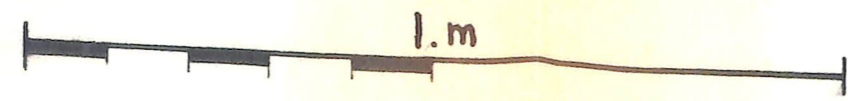
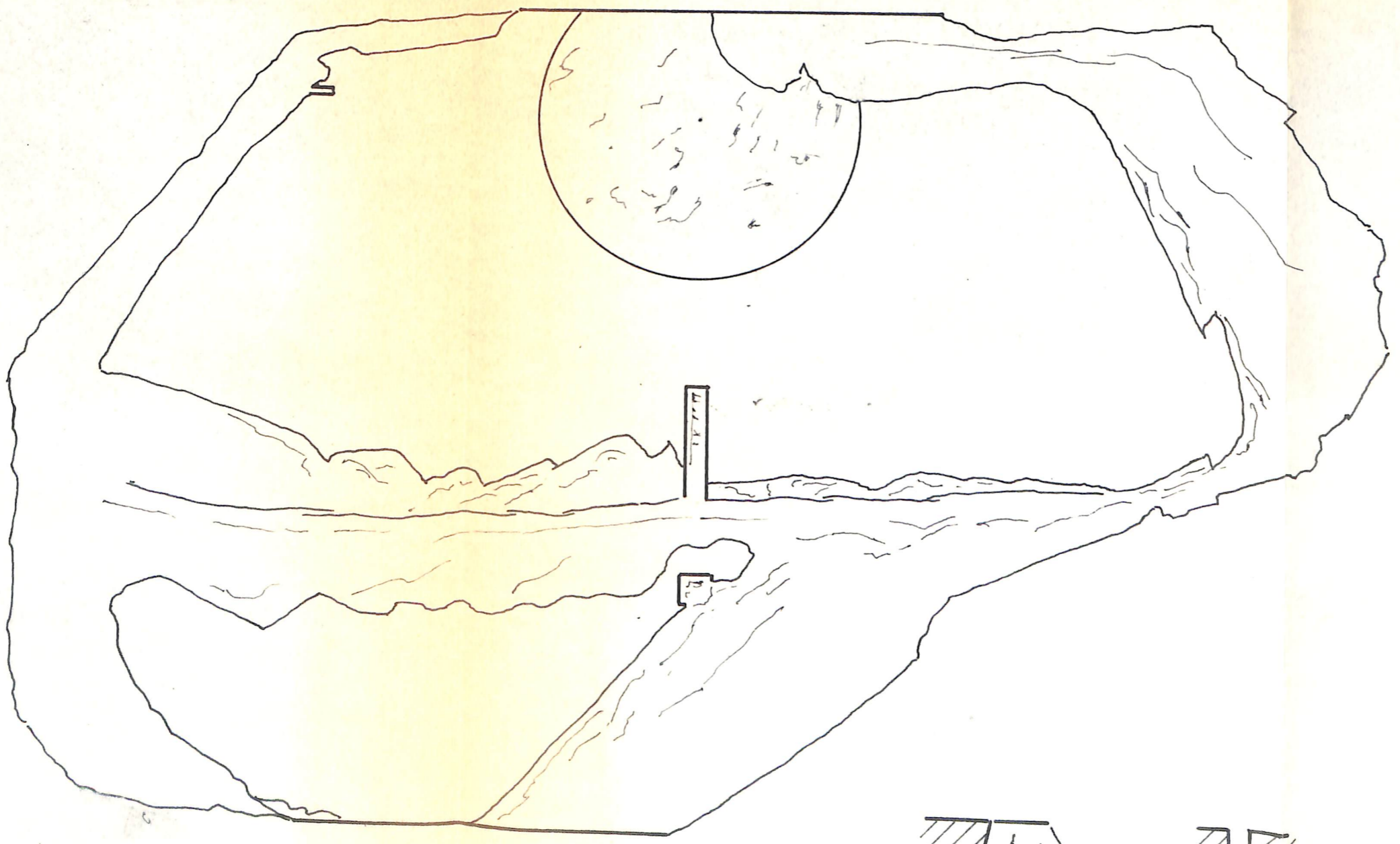


Figure 5. Olympieion Plinth Block (plan)
with Narrow Lewis (cuts).



Figure 6a. Capital in National Gardens, Athens.



Figure 6b. Pilaster Capital in Asklepieion, Athens.



Figure 7a. Capital, Asklepieion, Athens.



Figure 7b. Pilaster Capital, Arch of Hadrian
Athens.



Figure 8a. Pilaster Capital Fragment, Propylon,
Bouleuterion of Miletos.



Figure 8b. Pilaster Capital, Harbor Sanctuary,
Kos.