

A RECONSTRUCTION OF THE TEMPLE OF NEMESIS AT RHAMNOUS

(PLATES 29–48)

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ABBREVIATIONS

D.F.	Doric foot	L.	length
Diam.	diameter	pres.	preserved
H.	height	Th.	thickness
m.	meter(s)	W.	width
max.	maximum		

Blocks are designated in two ways. Letters followed by numbers refer to the author's catalogue of architectural elements using the abbreviations given below. Numbers followed by letters refer to the author's inventory of blocks by findspot; see Figure 31 on p. 244 below.

C	Capital	FB	Frieze Backer
CB	Ceiling block	Fl	Floor
D	Drum	G	Geison
E	Epistyle	P	Blocks of the tympanon
EB	Epistyle Backer	RG	Raking geison
Ep	Epikranitis	RT	Roof tile
F	Frieze	T	Wall blocks

INTRODUCTION

ON A SUNNY DAY in about 420 B.C. we may picture the people of Rhamnous, in a holiday mood, gathering on a saddle between two hills above their city to celebrate the anniversary of what must have seemed the proudest moment in their history.¹ Over the roofs of their homes below, they could see the sparkling blue arm of the Aegean Sea that separated their city from the island of Euboia.

For it was down this passage that the Persian fleet some seventy years before had sailed to come ashore at Marathon around the next cape, intent upon defeating the Greeks and incorporating them as a vassal state of the Persian Empire. So sure were the Persians of victory that they had already chosen a massive block of marble from the island of Paros for a victory monument, and they had brought it with them to erect over the defeated Greek armies.

The people of Rhamnous had readied themselves to fight, but they also invoked the aid of their city's patron goddess, Nemesis. So invoked, because Nemesis was angered at the effrontery of the Persians, she assisted the Greek troops in routing them and driving them back into the sea. And now the very block of Parian marble abandoned by the Persians in their hasty retreat stood before them, seventy years later, carved into a statue of Nemesis. The new cult image of the goddess was to be installed in her new temple.

So Pausanias (1.33) would have us believe, and whether the account is true or legendary is of less importance than the clear debt which the people of Rhamnous felt to their goddess, with whose help their homes had been saved, their pride restored, a signal victory won, and the Great King chastised for his hubris. The story of Nemesis' retribution was already current in the 1st century B.C., when the poet Parmenion composed an epigram on her metamorphosis from the marble block, preserved for us in a collection of epigrams published by Philip of Thessalonica in his *Garland of Philip*, ca. A.D. 40:

Μήδοις ἐλπισθεῖσα τροπαιοφόρος λίθος εἶναι,
ἠλλάχθην μορφὴν καίριον εἰς Νέμεσιν,
ἔνδικος ἰδρυνθεῖσα θεὰ Ῥαμνοῦντος ἐπ' ὄχθαις
νίκης καὶ σοφίης Ἀτθίδι μαρτύριον.

¹ This article is based on my dissertation, submitted in 1980 to Princeton University. My work in Athens was supported by fellowships from the American School of Classical Studies (White and Stevens Fellowships), the American Association of University Women (Dissertation Fellowship), and the Archaeological Institute of America (Olivia James Fellowship). I am grateful to Mr. Basilios Petrakos, Ephor of Attica, for his gracious permission to study the Temple of Nemesis and the frieze course of the Temple of Poseidon at Sounion for my dissertation, and for permission to publish the results here. At the American School, I have benefited very much from the encouragement and support of its Directors and the community of scholars, especially the late Colin N. Edmonson, and Charles K. Williams, II. I am greatly indebted to the late William B. Dinsmoor, Jr.; he was always generous with his expertise. For assistance of many kinds in the later stages of preparing this article, I thank J. K. Anderson, John McK. Camp II, Robert S. Carter, Theodore H. Chenoweth, Crawford H. Greenewalt, Jr., Kim J. Hartswick, Carol L. Lawton, Lynda S. Mancebo, Ingrid D. Rowland, Andrew F. Stewart, and Ronald S. Stroud. I am particularly grateful to T. Leslie Shear, Jr., who supervised my dissertation and patiently read subsequent drafts; beyond that his instruction and luminous example have improved all my work.

I, the stone of whom the Medes hoped to make a trophy, was changed opportunely to the form of Nemesis, the goddess justly planted on the shore of Rhamnous to be a witness to the Attic land of victory and the skill of her artist.²

In a triumph of archaeological detective work, Georgios Despinis carefully reconstructed the shattered fragments of the statue of Nemesis described by Pausanias, and he has shown that it was in fact carved from a single block of Parian marble.³ The image was made by the distinguished Athenian sculptor Agorakritos, and it was housed in a new temple built expressly for it, a suitable thank-offering to Nemesis from the people of Rhamnous.

The Temple of Nemesis is the smallest peristylar Doric temple of the 5th century B.C., built with the precision, artistry, and sophistication distinctive of Athenian architecture in this period. The present work provides a description of the temple, with course-by-course reconstructions of the entablature, based on the remains on the site in the public domain, which were studied during 1977–1979. The Temple of Nemesis is unusually well preserved, some parts showing Roman repair work, with the krepidoma and part of the stylobate still *in situ* and the blocks of approximately 85% of the peristyle extant. The platform of the temple and all the blocks and many fragments were measured and drawn as a basis for the reconstructions presented here.

NEMESIS

The sanctuary of Nemesis at Rhamnous is the best known cult center of the goddess.⁴ She is the personification of the abstract concept of Divine Retribution, especially that aroused by indignation at injustice. Nemesis first appears as a goddess in Hesiod (*Th.*, 223; *Op.*, 200), but her oldest actual cult was probably founded *ca.* 575 B.C. in Smyrna, after the destruction of the city by the Lydians.⁵ In her cult at Rhamnous, she was a guardian of human actions, with clear chthonic associations.⁶ Her role in the Battle of Marathon elevated her status and

² *Anthologia graeca*, xvi.222. Text and translation from W. R. Paton, *The Greek Anthology V*, Cambridge, Mass. 1953, pp. 292–293. For the date of the collection of epigrams, see A. S. F. Gow and D. L. Page, *The Greek Anthology: The Garland of Philip I*, Cambridge 1968, pp. xlvii–xlix; text and translation, pp. 296–297; commentary, II, p. 327.

³ Despinis, part I.

⁴ Rhamnous became so widely recognized for its sanctuary of Nemesis that some ancient authors refer to Nemesis as *Rhamnousia* or *Rhamnousis*, e.g., Kallimachos, *Dian.* 232; Catullus, 64.394; Ovid, *Met.* xiv.694; Apuleius, *Met.* xi. F. W. Hamdorf gives a catalogue of representations of Nemesis in art and other evidence for her cults (*Griechische Kultpersonifikationen der vorhellenistischen Zeit*, Mainz 1964, pp. 35–36, 96–97). Evidence for attention to her cult in Athens includes the following: an altar found in the Athenian Agora (Agora I 4790 + *IG II²*, 4817a, A. E. Raubitschek, “Greek Inscriptions,” *Hesperia* 12, 1943 [pp. 14–88], pp. 87–88, no. 26); an altar found near the Theater of Dionysos (*IG II²*, 4747); an altar to Nemesis and others found in the Kerameikos excavations (*IG II²*, 4865); a copy of the cult statue of Nemesis at Rhamnous found at 29 Praxitelou Street, N.M. 3949 (Despinis, pp. 28–29); a copy of the head of the cult statue of Nemesis (Agora S 1055); and an inscribed throne for a priest of Nemesis Ourania (*IG II²*, 5070). I am grateful to Dr. Judith Binder for these references to dedications to Nemesis in Athens.

⁵ Pausanias refers to a temple and statue of the two Nemeseis in Smyrna (vii.20.9). Because Nemesis is a personification, her cults probably arose independently, and it is not necessary to assume a relationship between the cults at Smyrna and Rhamnous.

⁶ For a full discussion of various aspects of her cult, see B. Dietrich, *Death, Fate and the Gods*, London

gave lasting renown to her sanctuary at Rhamnous, for it was she who assured the rightful outcome of the battle, the great victory for Athens.

Nemesis shared her sanctuary with the goddess Themis. A small Archaic temple, almost certainly dedicated to Themis, stands next to the Temple of Nemesis.⁷ Like Nemesis, Themis is also a personification of abstract concepts of rightfulness and fairness: Themis is Justice, or Law as established by custom (*LSJ*, s.v. *θέμις*), or Just Order; Homer first refers to Themis as a goddess, and she is one of the Titans, according to Hesiod (*Th.*, 133–137), but the date of the beginning of actual cultic activity is not clear.⁸ She too had a chthonic provenance, for she was considered a daughter of Ge or another form of Ge.⁹ Themis is often associated with the Moirai (her daughters, the Fates), Zeus Agoraios, or Bendis, but at Rhamnous, where more dedications to her have been found than in any other place, she is associated with Nemesis.

MODERN EXPLORATION OF THE SANCTUARY

In modern times, the sanctuary and temple of Nemesis at Rhamnous were first explored by an expedition sent by the Society of Dilettanti in 1813.¹⁰ Although on their way to Asia Minor, they were deterred by reports of pirates around Smyrna and decided to spend their time in Attica instead. The party was led by Sir William Gell and included the architects John Peter Gandy and Francis Bedford. It was Gandy, then twenty-four years old, who

1967, esp. pp. 157–176; for the cult of Nemesis in the Roman period, see L. Robert, *Les gladiateurs dans l'orient grec*, Limoges 1940 (reprint Amsterdam 1971), esp. pp. 306–307.

⁷ The temple was first drawn by J. P. Gandy (chap. 7, pp. 51–52, pls. 1–5). In a careful analysis of the inscriptions found in the small temple, A. Wilhelm demonstrated the existence of two separate offices for priestesses, one for Nemesis and one for Themis (“Themis und Nemesis in Rhamnous,” *WJh* 32, 1940, pp. 200–209). An Archaic predecessor for the Temple of Nemesis, beneath the present temple, was postulated by B. Bergquist (*The Archaic Greek Temenos*, Lund 1967, pp. 42–43), followed by Boersma (pp. 77–78, 143); finds from the recent excavations provide evidence for the earlier period of cult activity for both deities (B. Petrakos, *Πρακτικά* 1982 [1984], pp. 135–136, and pp. 142–153 [on the Temple of Themis]).

⁸ Pausanias mentions a statue of Themis in the Temple of Hera at Olympia, made by Dorykleides (mid- to late 6th century B.C.), and an altar of the Themides at Troizen, said to have been dedicated by King Pittheus (II.31.5; V.17.1–4); he also describes a temple and cult statue of Themis at Thebes (IX.25.4), a temple at Patras (VII.20.9), and a temple in Tanagra (IX.22.1). There is evidence for cults of Themis in several parts of Greece, but the cult probably originated in central Greece (see H. Vos, *Themis*, Assem 1956, pp. 39–69). Her earliest appearance in vase painting is on the dinos by Sophilos in the British Museum, ca. 580–570 B.C. (A. Birchall, “A New Acquisition: an Early Attic Bowl with Stand signed by Sophilos,” *BMQ* 36, 1971–1972, p. 109, pl. 34).

⁹ E.g. Aischylos, *Eu.*, 2–4; Euripides, *IT*, 1259–1269; Pausanias, x.5.6. Themis has Delphic ties in these passages; see Dietrich, *op. cit.* (footnote 6 above), pp. 168–170.

¹⁰ The background of the expedition is described in detail by Lionel Cust and Sidney Colvin, *History of the Society of Dilettanti*, London 1898, pp. 153–164. The stated purpose of this (Second) Ionian Mission was to visit various sites in Asia Minor (“Samos, Sardis, Aphrodisias, Hierapolis, Tralles, Laodicea, Telmessus, Patara, Cnidus,” p. 153). The party was twice delayed in Athens, however, because pirates prevented safe travel by sea. During the first delay (1812), they excavated and measured buildings at Eleusis, and during the second delay (1813), they visited sites in Attica: Rhamnous, Thorikos, and Sounion. Their work was published in *The Unedited Antiquities of Attica*, London 1817, and *Antiquities of Ionia*, Part V (Suppl. to Part III), W. R. Lethaby, ed., London 1915.

took the measurements and made the drawings of the temples at Rhamnous.¹¹ Some years after the trip to Greece, Gandy designed several buildings in England, including one for Lord Elgin. He also continued his study of antiquities and collaborated with Gell on a book about the buildings of Pompeii.¹²

Gandy's work at Rhamnous is admirable. His measurements, given to the hundredth of an inch, have proved to be generally reliable, and his descriptive drawings combine beauty with meticulous care.¹³ Less valuable are his reconstructions, speculations, and those parts of the work which require a broader knowledge of parallels in ancient architecture than was then available. As a pioneer in a discipline then in its infancy, Gandy recorded in his notes and drawings much information which would otherwise be lost, since the temples in the sanctuary of Nemesis were much better preserved when he visited them than they are today.¹⁴

Our understanding of the history of Rhamnous has been greatly improved by the work of Jean Pouilloux (1954), who studied the fortress and the inscriptions from the site. Agorakritos' cult statue of Nemesis was brought to life again by Despini's study of 1971. Basilios Petrakos' exemplary excavations at Rhamnous and its environs during the last decade have added important new information about the town of Rhamnous, the cemetery and Sacred Road, and the sanctuary and its buildings.¹⁵ No study of the Temple of Nemesis has been made since Gandy's, although certain details of its construction have been discussed.¹⁶

¹¹ His name is at the bottom of each plate in *The Unedited Antiquities of Attica*, chaps. 6 and 7.

¹² *Pompeiana: The Topography of Edifices and Ornaments of Pompeii*, 2 vols., London 1817, 1818. In the preface to the first edition, it is stated that the drawings were the work of Gell (with a "camera lucida") and that the text was by Gandy.

¹³ The members of the expedition received strict instructions on this point from the Earl of Aberdeen:

We cannot too strongly urge you to exercise the utmost accuracy of detail in your architectural measurements; recollecting always that it is the chief object of the Society to promote the progress of architecture by affording practical assistance to the architects of this country, as well as to gratify a general curiosity respecting the interesting monuments of antiquity still remaining in those parts.

(Cust and Colvin [footnote 10 above], p. 153).

¹⁴ Raikes, Leake, Wordsworth, and others subsequently visited Rhamnous in the 19th century and mention it in their journals, but they add little information to Gandy's: Raikes, in *Memoirs relating to European and Asiatic Turkey*, R. Walpole, ed., London 1817, pp. 308–309; W. M. Leake, *Travels in Northern Greece II*, London 1835, pp. 433–435; *idem*, *Demi of Attica*, London 1837, pp. 32–43; for other bibliography, see J. G. Frazer, *Pausanias's Description of Greece*, London 1898, II, p. 455.

¹⁵ See Bibliography for reports in *Πρακτικά* and *Ἀρχ' Ἐφ* by Petrakos, as well as his other articles on special topics.

¹⁶ Orlandos ("Note") reports some of Staïs' findings from his excavations of the 1890's and includes his own observations on the temple and a few corrections of Gandy's work; Shoe provides a section of the temple, taken through the flank; Plommer compiles previously published measurements of the Temple of Nemesis, the Hephaesteion, and the Temple of Poseidon, with remarks on their similarities and differences, and drawings of the temples; Hodge (*WGR*) restores the wooden rafters and the ceilings; Dinsmoor ("Fantasies") reconstructs the frieze, discusses an inscription carved on a block of the architrave of the temple, and rejects a metope which had been assigned to the temple; Hodge and Tomlinson discuss the stippled panels on the steps of the temple; H. Knell ("Vier attische Tempeln klassischer Zeit," *AA [JdI 88]* 1973, pp. 94–114) discusses the question of the "Theseum Architect"; Iliakis ("Ornament" and «Η ανακατασκευή της ανατολικής όψης του ναού της Νέμεσης στο Ραμνούνα—Μια επισκευή στα χρόνια του αυτοκράτορα Ιουλιανού», *Δελτ* 35, 1980, A' [1986], pp. 206–223) discusses the painted ornament on upper parts of the temple and repairs to the temple in the Roman period.

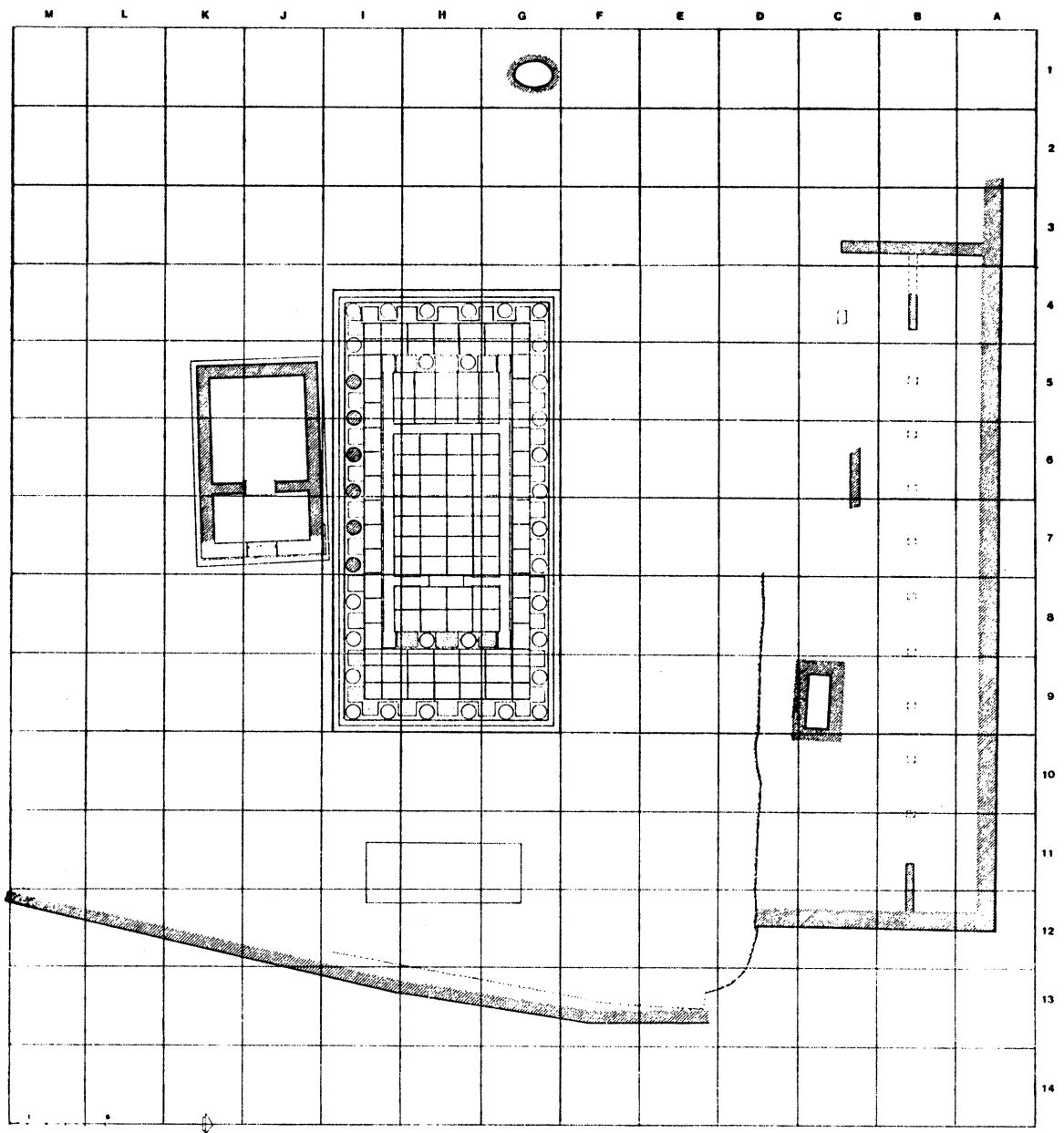


FIG. 1. Site plan of the sanctuary at Rhamnous (after B. Petrakos, «Ανασκαφή Ραμνούντος 1982», Πρακτικά 1982, pl. Δ (opp. p. 136)

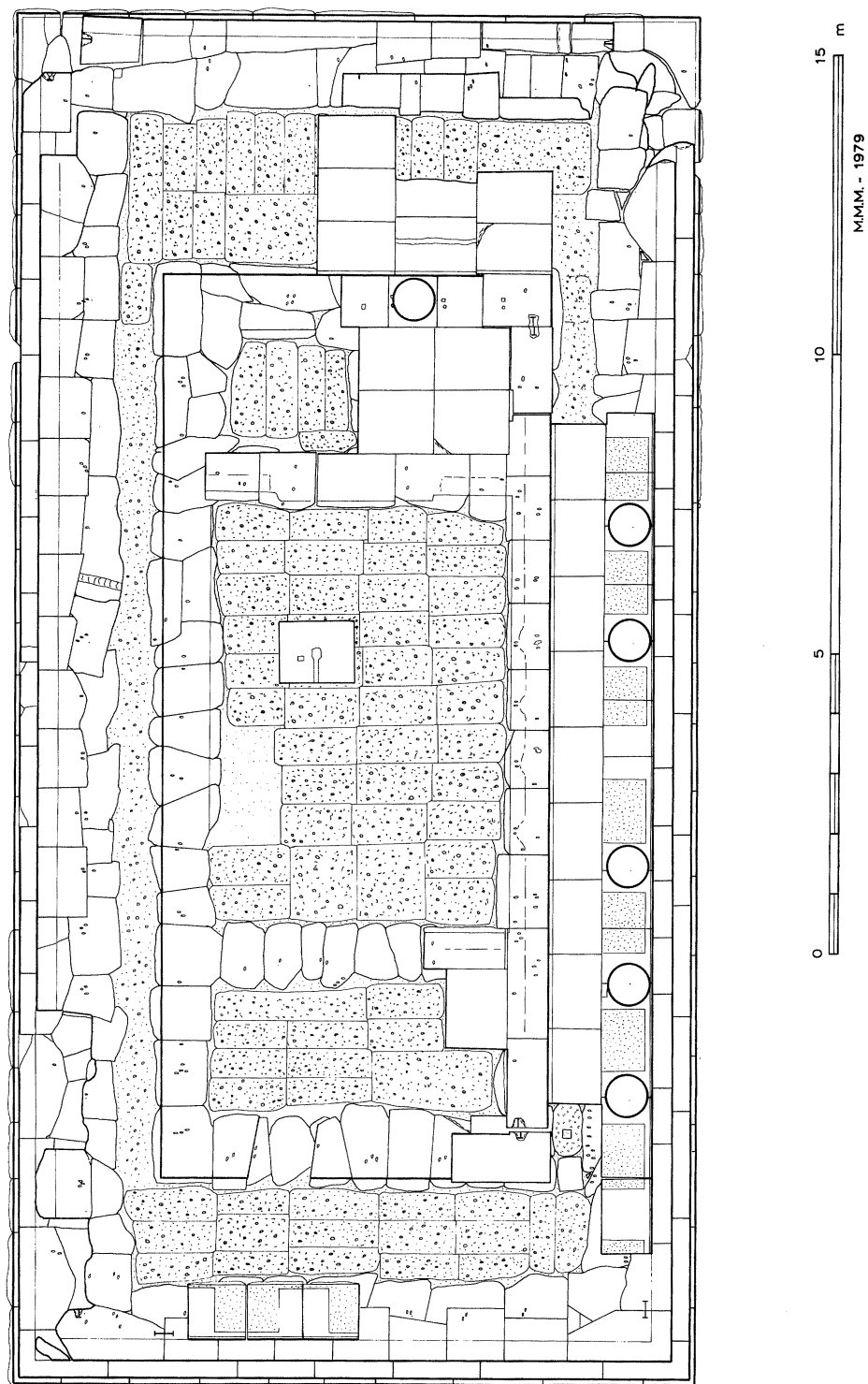
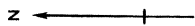


FIG. 2. Actual-state plan of the Temple of Nemesis

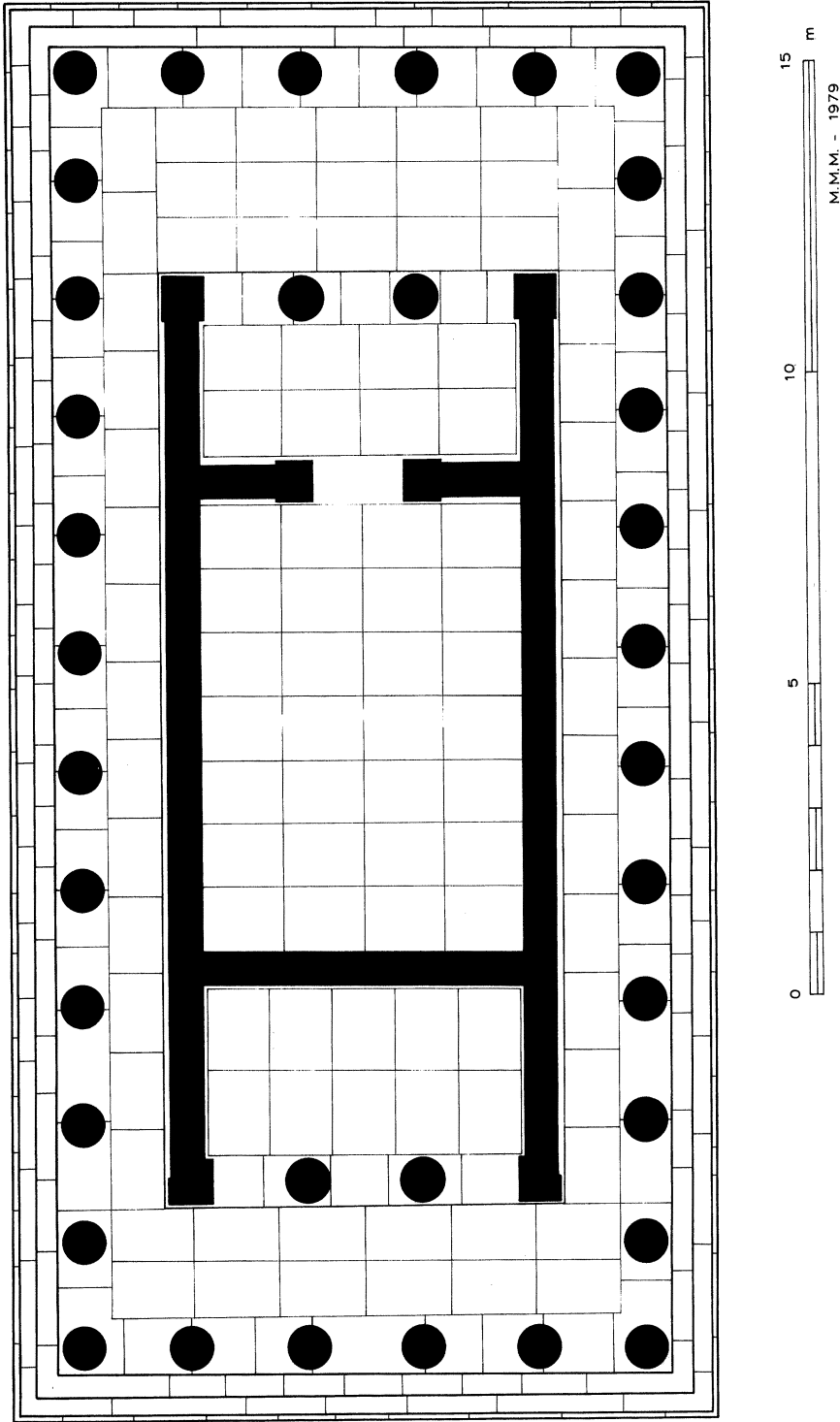


FIG. 3. Restored plan of the Temple of Nemesis

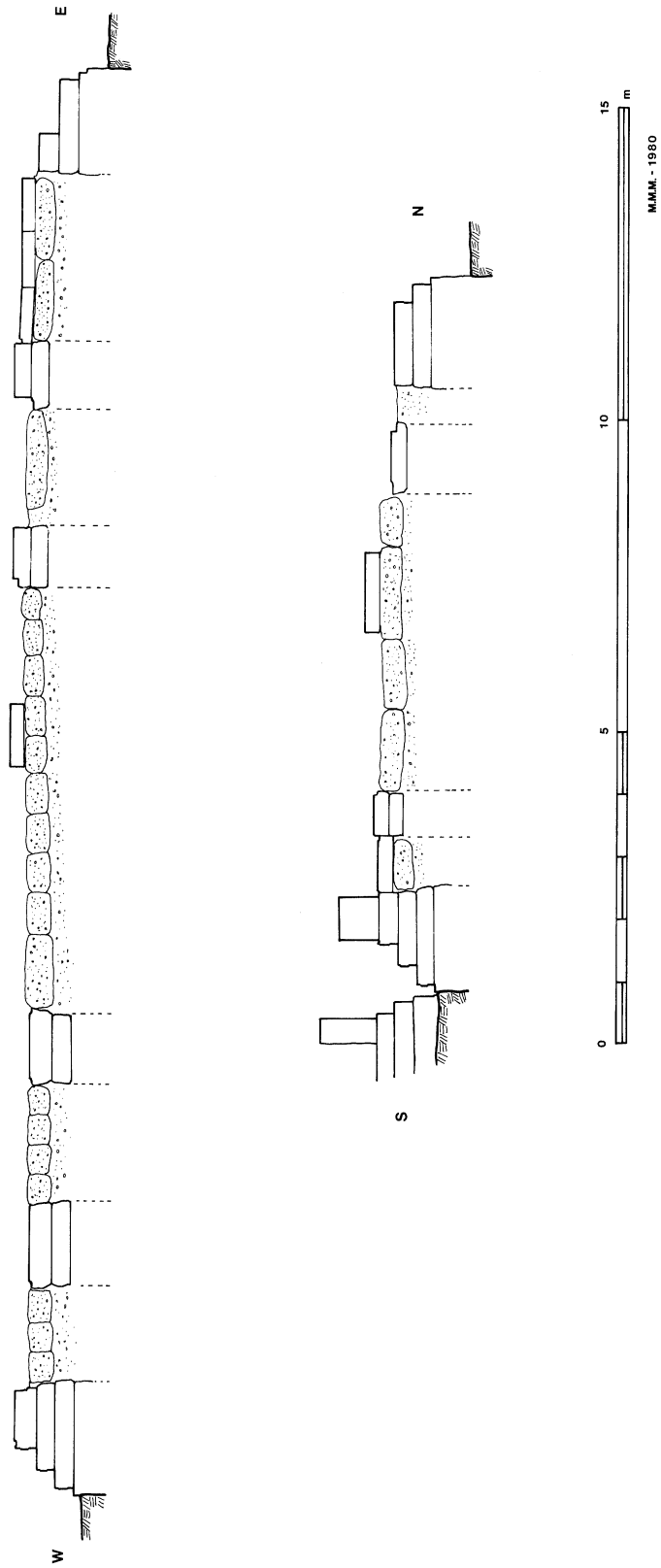


Fig. 4. Sections through the platform of the Temple of Nemesis

THE TEMPLE OF NEMESIS

MATERIALS AND TECHNIQUES OF CONSTRUCTION

The upper two steps and the entire superstructure of the Temple of Nemesis are built of white marble with bluish veins which was quarried at Agia Marina, about two kilometers from the sanctuary.¹⁷ Since the quarry was so near, the cost of transporting the marble must have been relatively low. The quarry is still being worked today; few traces of the ancient workings are left, although Hodge and Tomlinson found there an apparently ancient block with a wedge-shaped cutting.¹⁸

The best preserved blocks retain a whiteness and a polish which approaches that of the Pentelic marble used in the buildings on the Akropolis at Athens, but many blocks have suffered severe weathering and damage. The blue veins give a grayish cast to the stone when weathered, and these veins are weak points where many blocks have split into several pieces. This splitting is particularly noticeable on the drums of the columns: they were cut with the grain horizontal, perpendicular to the vertical axis, a common practice which required a more difficult and time-consuming technique than cutting along the grain but yielded drums better able to withstand the stress of the load. Subsequent damage and weathering have caused the drums to break along the grain (Pl. 37:a).

Part of the foundations, the euthynteria, and the lowest step were built of gray marble, also quarried locally. The ridge to the west of the sanctuary is formed of this dark stone and probably served as a quarry for these parts of the temple.¹⁹ A block of dark marble used as packing in the foundations of the temple was left with the marks of the wedges still on it. The block is unusually long (*ca.* 2.5 m.) and lies close to the northeast corner of the temple (Pl. 31:c).

The use of a different kind of stone for the lower step is a feature the Temple of Nemesis shares with several buildings in Athens: the Older Parthenon, where the bottom step is of Kara limestone, the Hephaisteion above the Agora, where the bottom step is of poros, and the west façade of the Propylaia, where the orthostates, string courses, and lowest step below the wings are made of Eleusinian limestone. It was convenient and economical to use the darker stone at Rhamnous, since it was quarried very close to the temple. The intended visual effect may have been to provide a transition in color and texture between the ground and the white marble steps.²⁰

¹⁷ Plommer (p. 95) erroneously calls the marble "Pentelic"; Gandy (p. 43) notes that the marble came from "neighbouring mountains" and is similar to that used for buildings on the Athenian Akropolis.

¹⁸ Hodge and Tomlinson, p. 192, pl. 52, fig. 8. A. Milchhöfer also reported traces of the quarries in the Limiko valley in the area around Agia Marina (in E. Curtius and J. A. Kaupert, *Karten von Attica*, Erläuternder Text III–VI, Berlin 1889, p. 50 and IX, Berlin 1900, p. 3). Wooden (or iron) wedges were used to lift the blocks from their beds in the quarries (A. Dworakowska, *Quarries in Ancient Greece* [*Academia Scientiarum Polona: Bibliotheca Antiqua XIV*], Wrocław 1975, pp. 104–111).

¹⁹ Gandy observed quarry marks "about twenty yards from the temple" (p. 43).

²⁰ W. B. Dinsmoor, *Hesperia*, Suppl. V, *Observations on the Hephaisteion*, Princeton 1941, p. 37; Hodge and Tomlinson, p. 191. L. T. Shoe notes a variety of sophisticated uses of dark stone in the Propylaia and the

The third type of stone used in the temple is a reddish conglomerate, probably also quarried locally.²¹ The matrix has a soft, claylike texture and is easily damaged by weather. The builders evidently did not fully trust the properties of the conglomerate, for they used it only under the floors: as packing between the toichobate and stylobate beneath the peristyle paving and in the interior of the cella and porches (Pl. 31:a). None of these surfaces carried much weight; at most the conglomerate supported only marble paving slabs, and even these in the peristyle were carried by projecting flanges on the marble blocks of the toichobate and stylobate and by the marble blocks of the middle step. The floor of the cella and the center row of paving slabs of the peristyle on the east end are supported by the conglomerate blocks alone. In the interior of the cella, where the edges of the blocks of conglomerate are still discernible, the blocks are of a fairly uniform size, *ca.* 1.20–1.30 × 0.50–0.60 m., although the slabs which supported the cult statue are of double width, 1.10–1.20 m. The builders of the Temple of Nemesis were among the first to use conglomerate as a building material in Classical times.²²

One block of gray poros was re-used as packing beneath the peristyle pavement on the south side, near the southwest corner (Fig. 2, Pl. 31:b). This block is pierced by a square hole. The marble block adjacent to it on the west is neatly cut and probably also had an earlier use. These two blocks happen to be visible; there are probably other re-used blocks buried in the substructure.

TOOLS

At least four different types of chisel were used in construction.²³ A flat chisel, *ca.* 0.015 m. wide, was used to carve the cuttings for T-clamps, dowels, and the lewis holes on the top surfaces of the geison blocks. A pointed chisel was used for pry holes and to carve away large areas. The pointed chisel was also used for surfaces in an intermediate stage, between the quarry surface and the semifinished smooth picking. A chisel with a fine point was used for the surfaces of the column drums. A toothed chisel was used to smooth surfaces

use of Hymettian marble in the Stoa of Zeus Eleutherios in the Athenian Agora ("Dark Stone in Greek Architecture," in *Hesperia*, Suppl. VIII, *Commemorative Studies in Honor of Theodore Leslie Shear*, Princeton 1949, [pp. 341–352], pp. 344–348). The lowest step of the Temple of Poseidon at Sounion is of the same white Agrileza marble as the rest of the superstructure; the lowest step of the Temple of Ares at Athens was of Pentelic marble.

²¹ Beyond the ridge to the west of the temple is a steep gully, and on the opposite hill is the scar of a road which was cut some years ago but never completed. The cutting reveals beds of reddish conglomerate, and this hillside was probably the source for the stone used in the temple.

²² In the Stoa of Zeus Eleutherios in the Athenian Agora (built *ca.* 430–420 B.C., with its akroteria finished at the end of the 5th century), conglomerate was used in the retaining wall on the west side, which was built somewhat later than the Stoa itself (H. A. Thompson, "Buildings on the West Side of the Agora," *Hesperia* 6, 1937 [pp. 1–226], p. 45, and *Agora* XIV, p. 97, note 83, and p. 100); conglomerate was used in the Monument of Dexileos in the Kerameikos, 394 B.C. (W. Wrede, *Attische Mauern*, Athens 1933, p. 23; conglomerate was used in the initial building of the Monument of the Eponymous Heroes *ca.* 350 B.C. (T. L. Shear, Jr., "The Monument of the Eponymous Heroes in the Athenian Agora," *Hesperia* 39, 1970 (pp. 145–222), p. 191, note 1, and pp. 191–196); Martin (pp. 115–116) cites other buildings which used conglomerate.

²³ For a convenient summary of Athenian building techniques, including illustrations of tools, lifting devices, and clamps, see J. McK. Camp II and W. B. Dinsmoor, Jr., *Ancient Athenian Building Methods* (Excavations of the Athenian Agora Picture Book No. 21), Princeton 1984.

which had to be perfectly horizontal but not polished. A drill was used for undercutting moldings. The surfaces on the Temple of Nemesis exhibit many different stages of finishing, but many of the conspicuous surfaces did receive the final polishing: these blocks have an extremely fine, satinlike finish.

HOISTING AND SETTING

Two different types of holes were cut for lifting devices. Some blocks of the epistyle and frieze have a large pair of undercut holes for use with lifting tongs (Pl. 31:d). The blocks of the geison have a single, narrow (0.015×0.105 m.) hole for a lewis. The holes are centered so that the block would be balanced while in the air. Lifting bosses on the large blocks of the orthostates and antae of the walls, for use with ropes, were not completely removed.

Some of the larger blocks of the epistyle, frieze, and tympana have a beveled edge on one bottom end to accommodate a pry bar. Pry holes on the top surfaces of the blocks, used in shifting the blocks above them into their final position, may be observed on most blocks from most courses of the temple, from the lowest step to the geison and tympanon. They often indicate the direction of laying of the superimposed course. In the entablature they were often cut adjacent to rectangular vertical dowels, used to secure the course above.

The blocks of the upper parts of the temple were fastened together with double T-clamps of iron, leaded in place. Many blocks still have iron and lead in the cuttings. The geison, sima, and coffer grids were doweled vertically into position on the next lower course. Occasionally a dowel was placed quite close to a T-clamp.²⁴

GUIDELINES

Several types of setting lines may be observed on the temple.²⁵ Incised lines were used on the euthynteria and steps for the placement of the next course, and on the top surface of the geison for the placement of the tympanon.

On several geison blocks, the soffits of the mutules have heavily incised guidelines used for carving the guttae (Pl. 33:a). This technique was probably developed originally for construction in poros, where the lines would have been concealed by the stucco finishing. A close parallel for these guidelines for guttae has been reported on the early Archaic temple of Athena Aphaia at Aigina.²⁶

On one bottom drum, D10, the preliminary guidelines for the placement of an empolion in the center are preserved (Fig. 5, Pl. 33:b). The guidelines were laid out with a compass: the center of the drum is divided by eight arcs whose radii are the same as the outer circumference of the drum; these are enclosed by a circle 0.105 m. in diameter, concentric to the center of the drum. A square inscribed within the circle would have been *ca.* 0.075 m. on a side. On intermediate drums, the cuttings for empolia would have been started in this way,

²⁴ This close positioning sometimes occurs in the Hephaisteion (Dinsmoor, Jr., "Hephaisteion," p. 232, ill. 6).

²⁵ A. Petronotis noted setting lines on the krepidoma (*Bauritzlinien*, Munich 1968, pp. 200–201).

²⁶ E.-L. Schwandner, "Zu Entwurf, Zeichnung und Maßsystem des älteren Aphaiatempels von Aigina," in *Le dessin d'architecture dans les sociétés antiques* (Actes du Colloque, 1984), Strasbourg 1985, pp. 81–83, fig. 5.

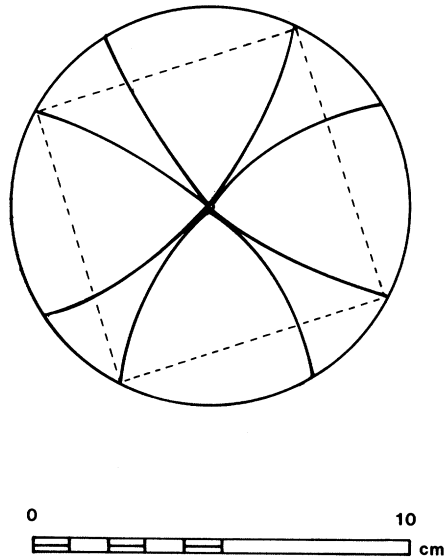


FIG. 5. Guidelines engraved on drum D10 224E for laying out an empolion

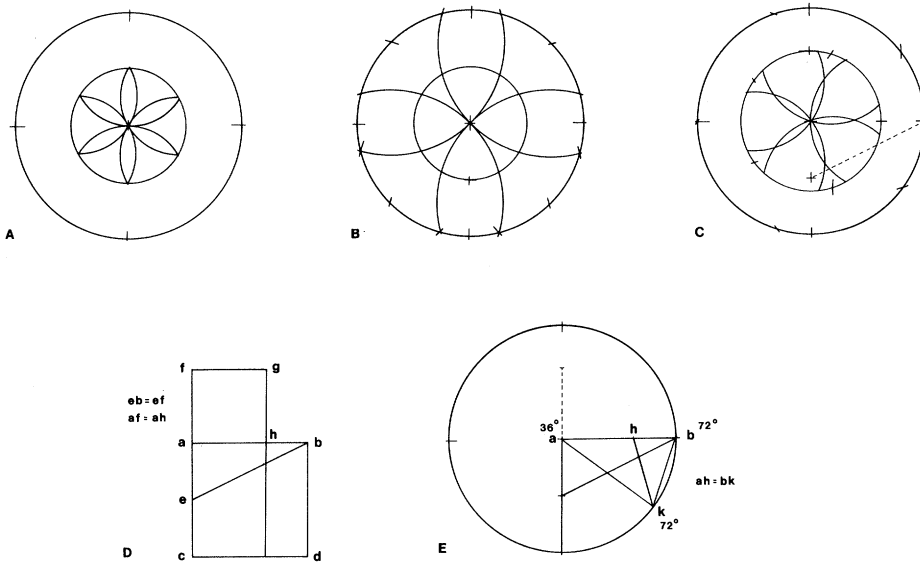


FIG. 6. Division of a circle to lay out fluting: A) 6 parts and multiples. B) 8 parts and multiples. C) 5 parts and multiples. D) Euclid, *Elem.* II.11. E) Euclid, *Elem.* IV.10

but the cutting on D10 was never completed, and that surface became instead the resting surface of a bottom drum, as the fluting around the lower circumference indicates.

Similar guidelines have been found on poros blocks belonging to the early Archaic temple of Aphaia at Aigina, on a block from the Temple of Athena Polias at Priene, and on the pedestal of a column of the Temple of Artemis at Sardis.²⁷ There, six or eight rather than four petal-like divisions are etched within a small circle; this type of preliminary incision would have been used for dividing the outer circumference of a circle into 12, 18, or 24 parts, in the case of a six-petaled division, or 16 (or 32) flutes, where there is an eight-petaled division.²⁸ For a column with 20 flutes, we would expect a five-petaled division (Fig. 6:C). This too is readily accomplished with a compass and straightedge, but requires understanding how to divide a circle into ten parts; this discovery is attributed to Pythagoras and is codified in Euclid's *Elements* (IV.10).²⁹

UNFINISHED SURFACES

One of the unusual and conspicuous features of the Temple of Nemesis is the unfinished condition of many of the surfaces. For the treatment of the krepidoma, stylobate, and columns, see the discussion of these parts below under Architectural Elements.

USE OF COLOR

Traces of paint can still be observed on a few blocks and fragments. The hawkbeak molding of G33 has traces of green paint (perhaps originally blue) within lightly engraved

²⁷ Schwandner observed a similar incision on a block from the toichobate at Aigina, and a second block shows a later stage of the process of dividing the flutes, with guidelines radiating from the center to the outer edges of a column (*op. cit.*, p. 78, figs. 3 and 4, and pp. 80–81; *idem*, *Der ältere Porostempel der Aphaia auf Aegina*, Berlin 1985, figs. 14, 44, 45, 80, and pp. 131–132). The later stage has also been observed on a drum from the Propylaia and a drum from a Doric treasury at Delphi (A. K. Orlandos, *Les matériaux de construction et la technique architecturale des anciens grecs* II, Paris 1968, p. 80, figs. 75 and 76 (discussed pp. 79–81) and Martin, p. 301, fig. 140). W. Koenigs noted a drawing with six divisions of the compass on a block from the Temple of Athena Polias at Priene (“Pytheos, eine mythische Figur in der antiken Baugeschichte,” in *Bauplanung und Bautheorie der Antike (Diskussionen zur archäologischen Bauforschung* 4), Berlin 1983, p. 91 and fig. 2 on p. 93). An incised drawing (which surely had a similar function) was noted on the Temple of Artemis at Sardis by L. Haselberger (“Bericht über die Arbeit am jüngeren Apollontempel von Didyma,” *IstMitt* 33, 1983 (pp. 90–123), p. 121 and pl. 26:2). Roman masons used a similar simple system of compass-drawn circles as spacing devices for the fluting of the columns on the Temple of Hadrian (and other buildings) in Rome (A. Claridge, “Methods of Fluting Corinthian Columns and Pilasters,” in *Città e architettura nella Roma imperiale [Analecta Romana Instituti Danici, Suppl. X]*, Odense 1983, pp. 119–128).

²⁸ The divisions are easily accomplished with a compass and straightedge; the division into six parts is easiest (which may account for the early popularity of columns with 12 flutes), using the point of the compass (still set at the radius of the outer circle) placed on the circumference and drawn to cross the center, leaving an arc there (Fig. 6:A). For division into eight or its multiples, the compass-point should be placed at half the radius to divide the outer circle, then at those outer points to form the arcs in the center (Fig. 6:B). During actual construction, a line would have been engraved between the center of the drum and the outer tip of a “petal” (and the mid-point between “petals”) to the outer circumference of the drum (at a point marked by another swing of the compass). A later stage of this process, after the “petals” have been chiseled off for the anathyrosis of the drum and the cutting of the empolion, but with the radiating lines still remaining, is preserved on drums from several places, noted above.

²⁹ Euclid, *Elements* IV.10 depends in part on II.11, which is also Pythagorean; for discussion, see T. L. Heath, *A Manual of Greek Mathematics*, Oxford 1931, pp. 102–103, 223–224. See Fig. 6:D, E.

lines. A fragment of a fascia with a delicately incised maeander pattern had red, yellow, and blue stains within the checkered pattern. Other pieces now in the storeroom at Rhamnous have been studied for traces of color by Iliakis.³⁰

When Gandy visited the site much more color was preserved than is now visible. He says of the coffer lids, "The ovalo (*sic*) in the pannels (*sic*) of the lacunaria were painted: the green colour is in some places still visible. The star-like figure appears to have been gold upon a ground of blue."³¹ He also remarks, "All the members of the cornice were painted or gilt; among the ornaments introduced is the lotus, resembling the sculptured moulding in the capitals of the antae, and along the flank walls of the Erechtheum at Athens: and the meander, nearly similar to that carved in the interior frieze of the temple of Theseus."³²

REFINEMENTS

The stylobate of the temple has no curvature. The euthynteria and the preserved portions of the first and second steps of the north side do rise in the center *ca.* 0.02 m. (Fig. 7). The east end of the temple has settled, however, and this slight difference in height on one side cannot be considered "curvature". Goodyear notes Penrose's observation that the Temple of Nemesis had no curvature, along with the Erechtheion, the Temple of Athena Nike, and the Temple of Apollo at Bassai, and a few earlier temples.³³ The Hephaisteion and the Temple of Poseidon at Sounion do have curvature. Goodyear suggests that building a temple with curvature was very costly, especially because of the necessary working of the column drums, and that it may have been eliminated for reasons of economy in the temples noted.

Although unfluted, the columns of the peristyle in the Temple of Nemesis could have had entasis, like most Doric columns of the 5th century B.C. They inclined slightly inward, and the entablature was contracted to adjust for the inclination. The raking geison projected slightly forward. The antae and walls should have been slightly inclined inward, but there is no evidence to prove this assumption.

ARCHITECTURAL ELEMENTS

KREPIDOMA

The full depth of the foundations is unknown, since the area around the temple has not been completely excavated, but because it is built on an artificial terrace it is probable that the foundations are quite deep and substantial (Pl. 29). The temple is placed somewhat lower than the adjacent Archaic temple of Themis (Fig. 8).³⁴

³⁰ Iliakis, "Ornament".

³¹ Gandy, p. 46. Iliakis ("Ornament," pl. 55:b) illustrates part of a coffer lid with the star pattern.

³² Gandy, p. 45.

³³ W. H. Goodyear, *Greek Refinements*, London 1912, pp. 118–121. For the special "convex" or outward curvature at Bassai, see F. Cooper, *The Temple to Apollo at Bassai*, diss. University of Pennsylvania, 1970, pp. 108–111.

³⁴ The Temple of Themis and the Temple of Nemesis were built so close together that at the northeast corner of the smaller temple they are only 0.084 m. apart (Fig. 8, Pl. 32:a). The treatment of the steps and euthynteria of the Temple of Nemesis shows that adjustments had to be made because of the presence of the

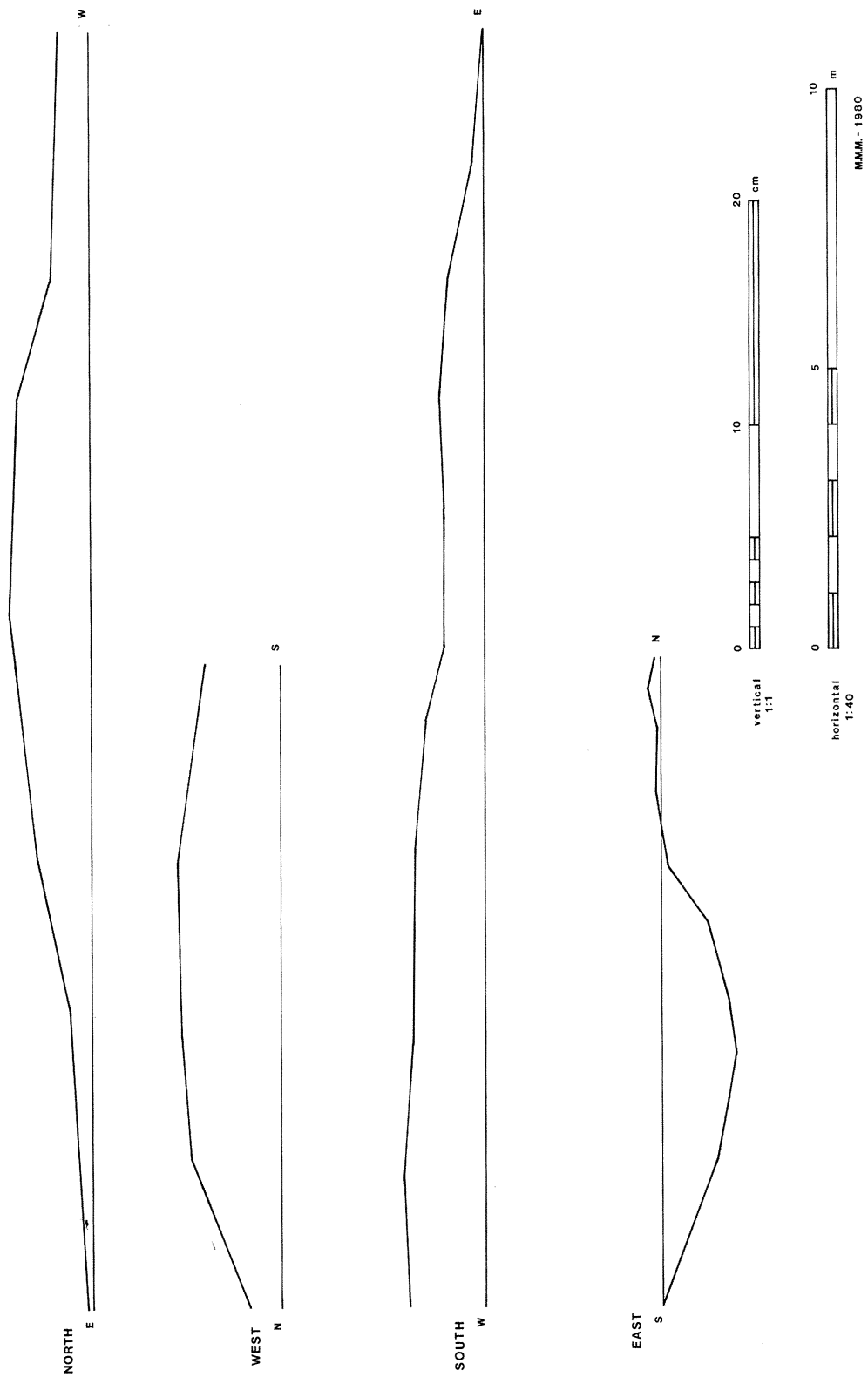


Fig. 7. Variations in level in the platform

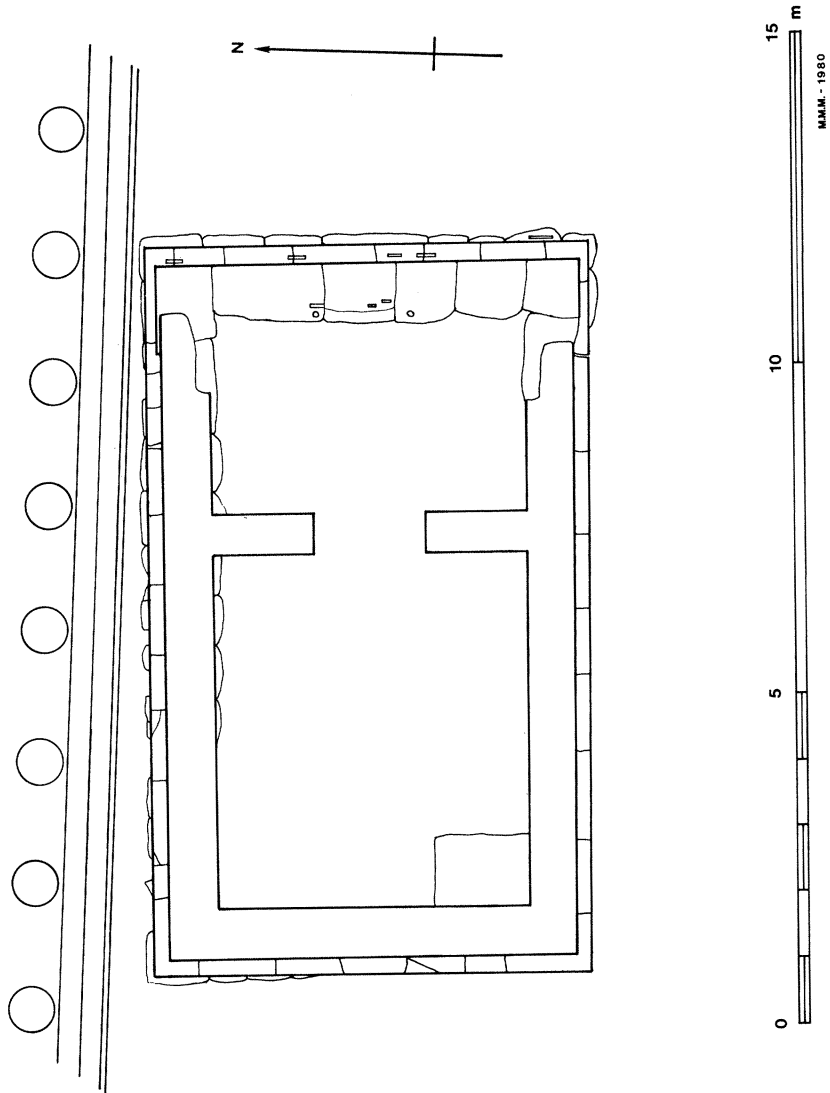


FIG. 8. Plan of the Temple of Themis

The Euthynteria

Elevations taken on the euthynteria along all four sides show that the east end of the temple was built slightly lower than the west, for the southeast corner of the euthynteria is 0.034 m. lower than the southwest corner, and the northeast corner is 0.012 m. lower than the northwest (Fig. 7). The euthynteria at the center of the east side actually sags some 0.035 m. lower than the northeast and southeast corners. If this occurred because of settling (into the fill of the artificial terrace), some discrepancy must have been observed even while the temple was under construction, for an adjustment was made on the top surface of the euthynteria: a small ledge, 0.001–0.011 m. high, was left on the top surface, set 0.07 m. in from the front edge of the course (Pl. 34:a). The blocks of the first step were placed on this ledge. The maximum height of the ledge occurs at a point *ca.* 1.50 m. north of the center along the east façade, and the ledge gradually tapers to the northeast and southeast corners. This technique for leveling courses was not used elsewhere on the building. The blocks of the first step, preserved in place along the center of the east front, nevertheless sag in the middle 0.028 m. lower than the preserved ends of the course. Apparently the building has continued to settle since antiquity.

The vertical face of the euthynteria is carefully finished 0.11–0.14 m. from the top surface and left rough below. The top and sides of the finished area on the individual blocks have a smooth band 0.015–0.02 m. wide around the edges, with light stippling inside the band (Pl. 33:c). The visible top surface of the euthynteria, 0.07 m. wide, is smooth (Pl. 34:a). A setting line for the blocks of the first step was engraved in the top surface of the euthynteria and is clearly visible wherever the blocks of the step are missing. Because the present surface of the terrace slopes down from the southwest to the northeast, the rough vertical face of the euthynteria is buried on the south side of the temple but fully visible on the north and east (Pl. 35:a).

The Steps

When Gandy visited the site, the steps and stylobate were completely preserved in place.³⁵ Today the lowest step is preserved except at the southeast and northeast corners; the second step is missing along the entire east front and at the northwest corner; and the top step (stylobate) is preserved only along two-thirds of the south side and a small part of the west end. Where blocks are missing, pry holes on the next lower course provide evidence for the joints in the course it supported. The stylobate, restored to finished dimensions,

smaller building: on the two blocks of the first step closest to the northeast corner of the smaller temple, the stippled surface on the upper part of the riser has not been smoothed down, as it was on all other blocks of the first step (Pl. 33:c). Furthermore, a projecting flange on the euthynteria was chiseled off just at the point where the two temples are closest; the flange was left unworked for a distance of *ca.* 1.50 m. to the west of this point. These two details indicate that the builders were working in a tight space, limited by the north wall of the smaller temple. The extreme proximity of the two temples is unusual; if we assume that there is an Archaic temple to Nemesis beneath the present structure, probably the wish for continuity at the sacred place influenced the location of the Classical temple. Possibly the earlier foundations were partly re-used.

³⁵ Gandy, p. 44.

measured 9.96×21.431 m. Gandy measured the stylobate as 10.022×21.464 m. on the east and north sides ($32' 10.57'' \times 70' 5.03''$).³⁶

The two lower steps are similar in the manner of their construction and treatment of the visible surfaces (Pl. 34:b). The length of the blocks varies from 0.819 to 2.633 m., but the length of the blocks of the bottom step is fairly regular on the north side (*ca.* 1.25 m.), and the length of the blocks of the second step is fairly regular on the north and west sides (*ca.* 0.95 m.). No consistent “unit” or layout was used.

The blocks of each course, both those visible as treads and risers and the blocks behind them which helped support the course above, are cut in irregular polygonal shapes, tightly fitted together.³⁷ Many of the blocks must have been cut to the proper shape while they were being laid; this “tailoring” is indicated not only by the intricate fitting of the blocks, but also by the chisel marks behind the setting lines of the steps, which vary between sets of pry holes and show that the resting surfaces were individually prepared for each block (Pl. 36:a, b). This type of construction provided a strong, solid support for the superstructure with almost no clamping of the blocks. Double T-clamps are used only on corner blocks.

The height of each of the two lower steps is 0.30 m., measured on the south side, the best preserved. The width of the treads varies slightly, since the vertical faces of the risers were left unfinished. The finished width would have been 0.328 m.; the width with the protective surfaces varies from 0.332 to 0.355 m. The finished risers would have been of the usual type, with a plain, vertical face.³⁸

The Stylobate

The stylobate paving consists of blocks of almost uniform size, *ca.* 0.95 m. long and 0.85 (on the south) or 0.94 m. (on the west) wide. On the south side are preserved two blocks of double length, 1.906 and 1.903 m. long, and the pry holes on the middle step of the north side indicate one block of double length is to be restored there. The corner blocks and those adjacent to them were of different lengths because of the contraction of the spacing of the corner columns. The columns generally rested on a joint, except those on a block of double or irregular length. Between the smoothed spaces on the stylobate where the columns rested, raised rectangular panels remain, with beveled edges and coarsely stippled top surfaces. The stylobate was left unfinished (Pl. 36:c).

Both the southwest and northeast corner blocks of the stylobate are preserved on the ground near their respective corners. The southwest corner block measures 1.458 m. (on the south) by 0.95 m. (on the west). The northeast corner block measures 1.314 m. (on the north) by 0.944 m. (on the east). Both have re-entrant cuttings on their inside corners which accommodated the diagonally adjacent paving block of the peristyle (Pl. 36:d). These cuttings differ on the east and west ends, 0.526×0.121 m. on the southwest corner block and

³⁶ Gandy, pl. 1.

³⁷ Despite the intricate cutting, it is always easy to distinguish the edges of the blocks from “cracks”, *pace* Plommer (p. 95).

³⁸ The special treatment of the lowest and middle steps of the Temple of Poseidon at Sounion, with a recessed panel and a cavetto molding, is unique (Fig. 9, Pl. 32:b).

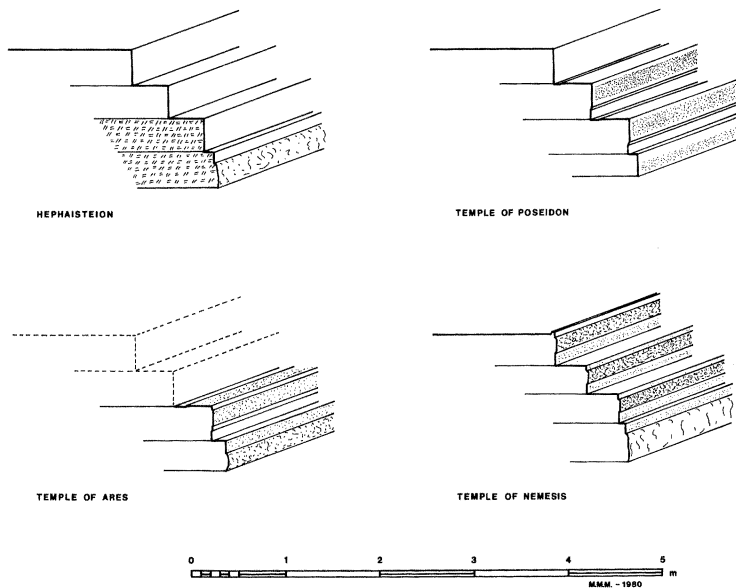


FIG. 9. Comparison of the krepidoma: Hephaisteion, Temple of Poseidon at Sounion, Temple of Ares, and Temple of Nemesis

0.401 × 0.095 m. on the northeast corner block. The original corner was left uncut below the level of the paving.

The paving blocks of the peristyle are also uniform in size, 1.263 m. long and 0.877 m. wide on the south side, and on the east side, 1.293–1.305 m. long and 0.888 m. wide. The top surface of the paving of the peristyle was left with raised, roughly chiseled panels 0.053 m. high. A band 0.05 m. wide was smoothed on the inward side of the blocks, where they lie against the toichobate, close to the joint. The rough panels are unfinished surfaces.

Unfinished Vertical Surfaces

In addition to the panels on the stylobate and paving blocks, unfinished areas were also left on the vertical surfaces of the krepidoma. The risers of the steps each have a raised horizontal band, 0.045–0.053 m. below the surface of the tread and 0.10 m. (on the lowest step) or 0.12 m. (on the middle step) wide (Pl. 35:b). The band is roughly flat on top and beveled at the bottom and projects *ca.* 0.013 m. from the vertical surface, although the degree of projection varies from block to block and side to side of the temple. The band is generally continuous, but there is an occasional bevel at a joint between blocks, and in several places the band has been worked off and replaced by a smooth vertical band. The projecting horizontal band is roughly chiseled. Above and below the horizontal band, the steps were left lightly stippled, with a smooth border on the sides and bottom edge (cf. Fig. 9).

The top step (stylobate) also has a raised horizontal band on the face (0.144 m. high) and, in addition, a raised lip on the top surface (Pl. 36:c). The height of the step with the lip is 0.322 m. and without the lip 0.306 m., thus only slightly (0.006 m.) higher than the two lower steps.³⁹ The lip is polished on all sides and was used as a point of reference for laying these blocks and perhaps also the columns.

The function of the stippling and of the raised bands has been discussed in detail by Hodge and Tomlinson, who compare the treatment to similar unfinished surfaces on the steps of the Hephaisteion, the Temple of Poseidon at Sounion, and the Temple of Ares and conclude that the surfaces are “deliberate and final (though with probable scope for further treatment at Rhamnous) but they are inspired by the appearance of unfinished work, which must have been well known to the architect from buildings which were subsequently finished.”⁴⁰ That these surfaces are deliberate and final seems unlikely, however, especially since the rough-picked band on the risers is interrupted at some joints by a smoothed vertical edging. In addition to the surfaces left on the steps at Rhamnous, the fluting of the columns was never finished and the stylobate paving never smoothed. These are certainly to be regarded as “unfinished”.⁴¹

It seems far more likely that the builders intended to smooth all these surfaces, but time and money for the work ran out, just as they did for the Propylaia in Athens. If funds or time were limited, other parts of the building received the “final touches” first: for example, the moldings in temples of the 5th century were almost always painted. Evidently it was thought more important to have the moldings properly articulated with paint or the ceiling coffers decorated than to have the steps smoothed, or, in the case of the Temple of Nemesis, to have the columns fluted.⁴² We can find reasons to appreciate the “unfinished” effect aesthetically, as Hodge and Tomlinson have done, but such appreciation is not sufficient to demonstrate that the builder’s original intention was to leave parts of the temple unfinished. Hodge and Tomlinson are surely right, however, in asserting that unfinished buildings of the Classical period inspired deliberate “rustication” in the Hellenistic age.

³⁹ Hodge and Tomlinson (pp. 189–190) point out that if the lip were removed, as it was surely intended to be, the height of the top step would then not be one dactyl higher than the lower two, thus “breaking” Dinsmoor’s proposed “rule”; they suggest that the gradation in height of the stippled horizontal bands would have provided the desired variation. (They do not give a reference to this rule but presumably they refer to Dinsmoor, “Ares,” p. 25, where he suggests that the stylobate of the Temple of Ares should have been increased by approximately one dactyl; he notes, however [in note 56 on p. 25], a deviation from this in the Hephaisteion [0.015 m. added to the top step for a total height of 0.364 m.] and the Temple of Poseidon at Sounion [0.028 m. added for a total height of 0.381 m.])

⁴⁰ Hodge and Tomlinson, p. 190.

⁴¹ Cf. the discussion of these surfaces (and others like them) in Kalpaxis, pp. 135–137, 142.

⁴² Cost might have been a factor as well. Boersma calculates the cost of fluting the columns of the Temple of Nemesis: a minimum of *ca.* 2,700 drachmas, and a more likely maximum of *ca.* 7,800 drachmas (Boersma, p. 78).

COLUMNS OF THE PERISTYLE

The Shafts

The Temple of Nemesis had six columns on the façades and twelve on the flanks. The columns were composed of individual drums of varying heights. Fifty column drums and fragments of drums were found on the site, five of them bottom drums almost in place on the stylobate. Seven capitals are preserved. At the time of Gandy's visit, seven bottom drums were still *in situ* on the south side of the temple as was one in the pronaos, and "the positions of the prostrate columns [were] perfectly discernible."⁴³ Because the drums were subsequently scattered around the site, it is no longer possible to assign them to their exact original positions, although their diameters indicate their position vertically within a column. Most of the drums had been broken into many smaller fragments and were cemented and doweled together in 1959–1960 by the Greek Archaeological Service.⁴⁴

Since the columns were never completely fluted, a bottom drum is readily recognizable by the band of twenty flutes, *ca.* 0.048 m. high, around its lowest circumference, which was prepared before the drum was set into place (Pl. 37:b, c). The flutes are finished to a fine, polished surface. Above the fluting on each bottom drum is a beveled edge, *ca.* 0.013 m. in height, above which a rough, coarsely stippled working surface begins. On many drums a smooth band marks the border between the working surface and the beveled edge. Both the smooth band and the beveled edge are carefully worked, even though they were not intended to be permanent. The total height of this worked strip (finished flutes and beveled edge) varies from 0.061 to 0.075 m. The rough-picked surface has a projection of 0.028 m. measured from the center of the finished flutes.

The lower diameter of the bottom drums is 0.714 m. measured on the arrises and 0.675 m. between the centers of opposite flutes.⁴⁵ The best preserved flutes are 0.111 m. wide at the bottom of the drums (calculated from the diameter, they would be 0.1117 m.), and the flutes taper to 0.086–0.088 m. beneath the annulets on the capitals. The lower diameter of the drums measured on the working surface varies from 0.722 to 0.739 m. A circular relieving edge on the resting surface of the drums is recessed 0.012 m. from the center of the flutes.

The top surfaces of the bottom drums, both ends of the intermediate drums, and the bottom surface of the capitals (Pl. 38:a) have in their centers square cuttings for wooden empolia, *ca.* 0.09 m. to a side and 0.03–0.05 m. deep. The size of the cuttings decreases on the upper parts of the column to *ca.* 0.075 m. square. The cuttings for the empolia also show very careful and precise workmanship, as most of them have an even beveled edge around the perimeter, varying in width on different drums from 0.0015 to 0.005 m.⁴⁶

⁴³ Gandy, p. 44.

⁴⁴ I. Kontes and B. Petrakos, «Ἔργασίαι γενομένηι κατὰ τὸ 1960», *Δελτ* 16, 1960, B' (1962), pp. 36–39.

⁴⁵ If the builders followed the standard practice of increasing the diameter of the corner columns by one-fiftieth, the corner columns would have been 0.728 m. ($0.714 + \frac{1}{50} = 0.01428$; $0.01428 + 0.714 = 0.72828$ m.). Only fifteen of the thirty-two bottom drums are preserved; none of them has the larger diameter.

⁴⁶ See above, pp. 147–149, for the probable existence of guidelines for cutting the empolia.

Fifteen of the original thirty-two bottom drums are preserved. Their height varies, 0.625–0.981 m.: apparently they were cut (as was usual) to arbitrary heights. Similarly, the intermediate drums vary from 0.650 m. to 1.002 m. high. Because of the variation in height, the degree of inclination measurable on the five drums on the stylobate varies from 0.005 m. to 0.007 m. The highest edge of the drums is usually the inner edge, at the point closest to the walls of the cella. The inward inclination of the column axes is estimated at 0.027 m.⁴⁷

Gandy gives the total height of the column, including the capital, as 13' 5.45", or 4.101 m.⁴⁸ The height of the column is equal to 5.743 lower diameters.

The exact interaxial spacing of the columns is difficult to measure, because only two of the drums on the stylobate on the south side, the third and eighth from the west end, are precisely in their original positions. The fourth, fifth, and seventh drums have been moved slightly out of position. The sixth drum was pushed onto the steps between the two temples (and later replaced by the Greek Archaeological Service). As a result, today the interaxial spaces vary from 1.890 to 1.952 m. More reliable are the measurements given by Gandy, since he took them when the temple was better preserved. He gives the interaxial space for most intervals along the south side, and they vary from 6' 2.9" (1.90246) to 6' 3.2" (1.91008), with an average over eight intervals of 1.9062 m. This distance is equivalent to 2.6697 lower diameters of 0.714 m.⁴⁹

Gandy gives the interaxial space between the southeast corner column and the next on the south side as 5' 8.95" (1.7513 m.). At the southwest corner, he gives the distance from the center of the second column from the west to the west edge of the stylobate as 7' 0.67" (2.1506 m.). If one-half the diameter of an enlarged corner column (0.364 m.), together with the distance from the perimeter of the column to the edge of the stylobate (0.05 m.) is subtracted, the result is a corner interaxial distance of $2.1506 - 0.364 - 0.05 = 1.7366$ m. Hence, the angle contraction, in respect to the average interaxial spacing, on the south side of the temple would have been $1.9062 - 1.7366 = 0.1696$ m. at the southwest and $1.9062 - 1.7513 = 0.1549$ m. at the southeast.⁵⁰

Because of the small size of the temple, the actual spacing of the columns is among the narrowest found in preserved Classical buildings, with a clear space between columns of only 1.1922 m. The closest parallel is the Metroön at Olympia, built one hundred years later, *ca.* 320 B.C.; its stylobate measures 10.62 m. × 20.67 m., with 6 × 11 columns, and the interaxial spacing is 2.01 m.⁵¹ The lower diameter of the columns, 0.85 m., provided a clear

⁴⁷ Dinsmoor, "Fantasies," p. 180. The figure 0.027 m. is equivalent to 1/12 of Dinsmoor's "Doric Foot".

⁴⁸ Gandy, pl. 11. The figure should be reliable, since Gandy remarks that the column drums were in their original (fallen) positions.

⁴⁹ Gandy, pl. 1. On the north side, Gandy notes that the average space is 6' 3.08", or 1.907 m. Dinsmoor (*AAG*³, p. 339) gives the interaxial space as 1.904 m., which is exactly $2 \frac{2}{3}$ (2.666) times 0.714. But none of the spaces measured by Gandy were exactly 1.904 m. It happens that the lower diameter 0.714 m. is exactly $2 \frac{3}{16}$ times 0.32640, the Doric Foot "reckoned" by Dinsmoor for Rhamnous, and thus an interaxial space of 1.904 would be exactly $5 \frac{5}{6}$ D.F. (5.833). Such tidy computations clearly can be derived only by choosing a mean.

⁵⁰ Dinsmoor (*AAG*³, p. 339) gives the corner spacing as "c. 1.730 m." (This is exactly $5 \frac{3}{10}$ of his "Doric Foot".)

⁵¹ Dinsmoor, *AAG*³, p. 339.

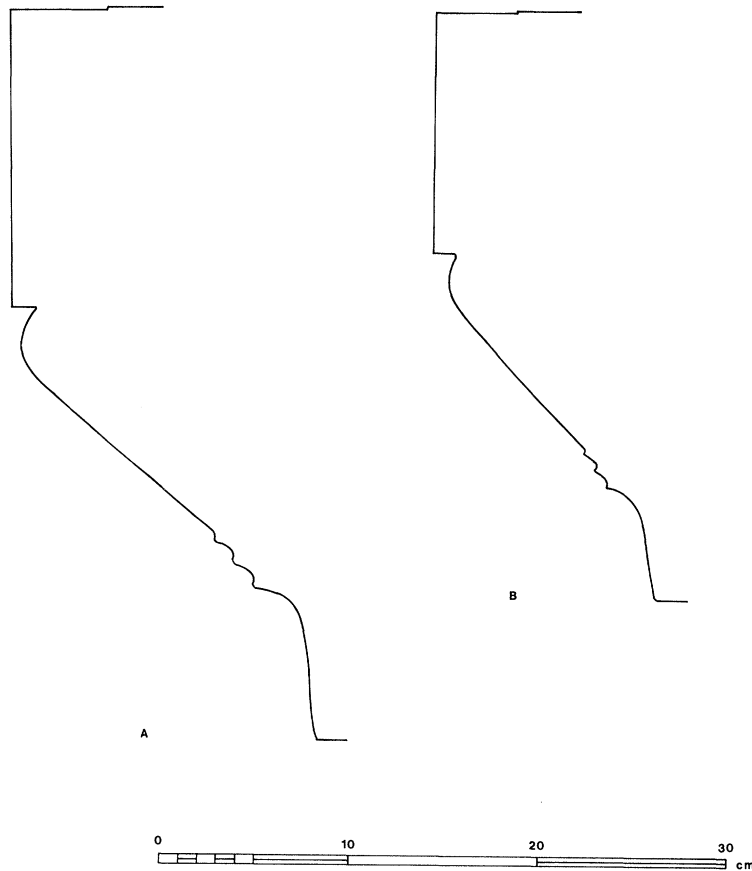


FIG. 10. Profiles of the capitals: A) C8 216J. B) C3 47B

space of 1.16 m. In the Stoa Basileios in the Athenian Agora, built at the end of the 6th century, the interaxial spacing is 1.920 m., close to the 1.9062 m. at Rhamnous, but the columns are only 0.6144 m. in diameter, which provided a larger clearance of 1.3056 m.⁵² The difficulty of scaling down the Doric order may have been one reason why the builders chose to have a peristyle of 6 × 12 columns, rather than the arrangement of 6 × 13 columns in the 5th century.

The Capitals

Seven capitals are preserved, two of them cemented together from several fragments (Pl. 38:a, b).⁵³ The abacus is 0.754 m. square and 0.130 m. high, the echinus, 0.100 m. high.

⁵² T. L. Shear, Jr., "The Athenian Agora: Excavations of 1970," *Hesperia* 40, 1971 (pp. 241–279), p. 243, note 4. I am grateful to Professor Shear for the slightly different dimensions cited here, which will appear in his final publication of the Royal Stoa. The problem of the spacing of the columns in small Doric buildings is discussed by Coulton (*Architects*, pp. 88–89, 91–92).

⁵³ An eighth capital, C8, is larger than the others and has a different profile (Fig. 10:A and Pl. 38:c). Although the capital is of Agia Marina marble, it cannot belong to the present Temple of Nemesis, because of its

Below the echinus are three annulets and the beginning of the flutes, which vary slightly, so that the total height of the capital is 0.311–0.313 m. The top has a relieving surface extending 0.041–0.043 m. from the outer edge, 0.001–0.002 m. high. The bottom also has a relieving surface, recessed 0.007 m. from the center of the flutes and 0.002 m. high. The diameter of the bottom is 0.546–0.551 m. measured on the arrises, 0.527 m. between the centers of opposite flutes. The flutes are 0.086–0.088 m. wide.

It is fortunate that the capitals are relatively well preserved at Rhamnous, for their profiles provide welcome evidence for the date of the temple. For the Doric capital, the height and curve of the echinus, the height of the abacus, and the proportion of the two together were particularly subject to experimentation and change over time, perhaps more so than any other part of the temple.⁵⁴ Analysis of the measurements and of the curve of the profile of the capitals of the Temple of Nemesis (Fig. 10:B) shows that it is closest to those of the Stoa at Brauron and the Temple of the Athenians on Delos.⁵⁵ The diameters of the Doric column at its base and top in relation to the height of the columns also provide useful evidence for dating. The columns and capitals of these three buildings are similar in size (see Table 1).

TABLE 1: Column and Capital Dimensions

	Lower Diam.	Upper Diam.	H. capital	L. abacus	H. abacus	H. echinus and filleting
Rhamnous	0.714	0.551	0.311–0.313	0.754	0.130	0.182–0.183
Brauron, Stoa	0.711	0.546	0.310	0.758	0.118	0.192
Delos, Athenians	0.769–0.776	0.630	0.352–0.357	0.854	0.139–0.145	0.212–0.213

In his thorough study of the ratio of various parts of the order in Doric buildings of the 5th century B.C., Bouras has demonstrated that the Stoa at Brauron is closely similar in its proportions (and decorative parts) to the monuments of the last quarter of the 5th century, and he dates the Stoa to *ca.* 420.⁵⁶ His tables illustrate a close similarity of proportions

height and profile. The profile is similar to that of the poros capitals Gandy assigned to the Temple of Themis, to the capitals of the Temple of Aphaia on Aigina, and to those of the Treasury of the Athenians at Delphi; hence it should be dated to the late Archaic period. A relieving edge on its upper surface shows that it supported an architrave (rather than a votive) and must have belonged to an earlier building in the sanctuary, perhaps the Archaic Temple of Nemesis (cf. footnote 7 above). Pieces of an Archaic hawkbeak molding also of Agia Marina marble, probably from an epikranitis, may have belonged to the same building (Ep8 234A); Shoe (pp. 126–127; pl. LX:12) assigned the molding to the present Temple of Nemesis, although she dates it to the later 6th or early 5th century.

⁵⁴ J. J. Coulton, in an analysis of profiles of Doric capitals, has shown that the development of the profiles is not always smooth, but that it is consistent within certain regions or periods of time (“Doric Capitals: A Proportional Analysis,” *BSA* 74, 1979, pp. 81–153).

⁵⁵ Bouras, p. 39, fig. 18; Courby, *Délos* XII, p. 118, fig. 128. The dimensions given here for the Stoa and the Temple of the Athenians are those of Bouras and Courby. Courby observes that in its capital, as in other details, the Temple of the Athenians on Delos recalls the Parthenon (pp. 117–118, 202–205).

⁵⁶ Bouras, pp. 149–159.

TABLE 2: Proportions of Columns and Capitals

	I	II	III	IV	V	VI	VII	VIII
Argos, Heraion, N. Stoa		.353	.690	1.120	1.310	6.300	4.800	
Delphi, Treasury of the Athenians	.238			1.045				
Olympia, Temple of Zeus	.231	.346	.706	1.012	1.352	6.214	4.595	1:1.273
Athens, Parthenon, pteron	.200	.331	.581	1.205	1.249	7.193	5.649	1:1.410
Athens, Hephaisteion		.326	.650	1.210	1.302	6.890	5.280	1:1.217
Sounion, Temple of Poseidon	.218	.332	.620	1.210	1.325	7.000	5.280	1:1.208
Athens, Temple of Ares	.200							
Athens, Propylaia (E, W)	.220	.320	.577			7.431	5.862	1:1.335
Athens, Propylaia (small cols.)		.316	.620	1.271	1.273			
Rhamnous, Temple of Nemesis	.228	.313	.568	1.300	1.267	7.540	6.590	1:1.259
Brauron, Stoa	.227	.312	.563	1.216	1.252	7.810	6.250	1:1.190
Delos, Temple of the Athenians	.222	.310	.560	1.310	1.239	7.763	6.264	1:1.430
Athens, Stoa of Zeus Eleutherios	.238	.305		1.335				
Bassai, Temple of Apollo, pronaos		.302	.601					
Bassai, Temple of Apollo, pteron				1.125	1.205		6.020	
Argos, Heraion, New Temple	.248	.300	.550	1.350	1.180	8.100	6.840	1:1.295
Eleusis, Proston of Philo		.291	.490	1.365				
Nemea, Temple of Zeus	.172	.278	.466	1.430	1.178	9.950	8.520	1:1.550
Tegea, Temple of Athena Alaia	.030	.275		1.518	1.227	9.950	8.120	1:1.610
Delphi, Tholos		.274	.526	1.464	1.212	9.206	7.597	
Stratos, Temple of Zeus		.269	.505	1.485	1.270	10.000	7.880	1:1.595

I. Taper of column (lower diameter minus upper diameter): lower diameter of column

II. Height of echinus: total height of capital

III. Height of capital: upper diameter of column

IV. Height of abacus: height of echinus

V. Side of abacus: diameter of echinus beneath annulets

VI. Side of abacus: height of echinus

VII. Lower diameter of echinus: height of echinus

VIII. Height of epistyle: lower diameter of column, divided by height of epistyle

between the Temple of Nemesis, the Stoa at Brauron, and the Temple of the Athenians on Delos (*ca.* 425–417). These three buildings form a group which should be dated after the Propylaia in Athens (438–432).

Bouras' tables are reproduced here in Table 2.⁵⁷ Column I shows the ratio of the amount of taper of the column to the lower diameter. Here the Propylaia (0.220), the Temple of the Athenians on Delos (0.222), the Stoa at Brauron (0.227), and the Temple of Nemesis (0.228) all have similar proportions.

Column II shows the ratio of the height of the echinus divided by the total height of the capitals. The proportions of the Temple of Nemesis (0.313) and the Stoa of Brauron (0.312) fall between those of the Propylaia (0.320 and 0.316) and the Temple of the Athenians on Delos (0.310).

⁵⁷ Bouras, pp. 149–153. The figures for the Temple of Nemesis are based on my own measurements; all others are those of Bouras. The difference between our figures is slight and does not affect the relative position of the Temple of Nemesis in the tables.

Column III shows the ratio of the height of the capital to the upper diameter of the column. Again the proportion of the Temple of Nemesis (0.568) is between that of the Propylaia (0.577) and those of the Stoa at Brauron (0.563) and the Temple of the Athenians on Delos (0.560).

In Column IV, the height of the abacus is divided by the height of the echinus. The Stoa at Brauron has a lower proportion (1.216) than the Propylaia (1.271), the Temple of Nemesis (1.300), or the Temple of the Athenians on Delos (1.310), but the Temple of Nemesis nonetheless falls between the Propylaia and the Temple of the Athenians on Delos.

Column V shows the ratio of the length of the sides of the abacus to the diameter of the echinus beneath the annulets. The proportions of the Temple of Nemesis (1.267) and the Stoa at Brauron (1.252) are similar, but the proportion of the Parthenon (1.249) is smaller, while that of the Temple of Zeus at Stratos (1.270) is greater. With these two exceptions, the Doric order was designed with a decrease in this proportion as time passed. Again the Temple of Nemesis falls between the Propylaia and the Temple of the Athenians.

Column VI shows the ratio of the length of the sides of the abacus to the height of the echinus above the annulets. Here again, the proportion at Rhamnous (7.540) falls between that of the Propylaia (7.431), and those of the Temple of the Athenians (7.763) and the Stoa at Brauron (7.810).

In Column VII, the lower diameter of the echinus is compared to its height. The Temple of Nemesis (6.590) has a greater proportion than the Stoa at Brauron (6.250) and the Temple of the Athenians (6.264). These three buildings with the Temple of Apollo at Bassai (6.020) form a group falling between the Propylaia (5.862) and the later Heraion at Argos (6.840).

Finally, Column VIII shows a ratio which relates the column to the course immediately above it, the epistyle: the height of the epistyle compared to the lower diameter of the column divided by the height of the epistyle. The Temple of Nemesis (1:1.259) falls between the Temple of Poseidon at Sounion (1:1.208) and the Hephaisteion (1:1.217) on one side, and the Propylaia (1:1.355) and the Temple of the Athenians (1:1.430) on the other. The Temple of the Athenians on Delos is close to the Parthenon (1:1.410), which, as we have seen, occasionally has exceptional proportions. With these two exceptions, and those of the Propylaia and the Stoa at Brauron (neither of them temples), the temples show a gradual increase in this proportion over time. The design of the epistyle of the Temple of Nemesis (in its relation to the lower diameter of the column) lies between that of the Temple of Poseidon at Sounion and that of the later Heraion at Argos.

This analysis shows that in the Temple of Nemesis the proportions of each part of the column and the capital, their appearance and dimensions, and the proportions between the column and the epistyle are most closely related to those of the Stoa at Brauron and the Temple of the Athenians on Delos. To judge from the capital and column, the Temple of Nemesis should be dated after the Propylaia and close to the Stoa at Brauron and the Temple of the Athenians on Delos, therefore *ca.* 430–420 B.C. (see further pp. 226–227 below).

EPISTYLES

Over the thirty-two columns of the Temple of Nemesis were thirty-two blocks of the epistyle which, together with their backers, spanned the intervals around the peristyle. One complete corner block and pieces of two other corner blocks of the exterior epistyle are preserved, as well as one complete intermediate block, pieces of two others, and two fragments. Only three pieces of the interior (pronaos) epistyle are left. Across the pronaos, the epistyle was probably divided into five blocks carried above the columns of the pronaos and the antae. The opisthodomos would also have had an epistyle across the width of the cella, but no preserved blocks can be assigned definitely to it.

The blocks of the interior and exterior epistyles have the same height but differ in their moldings. The interior epistyle is distinguished from the exterior by its heavier moldings and larger taeniae, regulae, and guttae. On the blocks with lighter moldings, the regula is 0.377 m. long (the width of the triglyphs) and 0.048 m. high, while on the blocks with heavier moldings, the regula is 0.425 m. long (restored on the basis of the spacing of preserved guttae) and 0.057 m. high (Fig. 11:E, F). The heights of the taeniae also differ, 0.044 m. and 0.056 m. for exterior and interior respectively. On the exterior of the temple, the width of the regulae

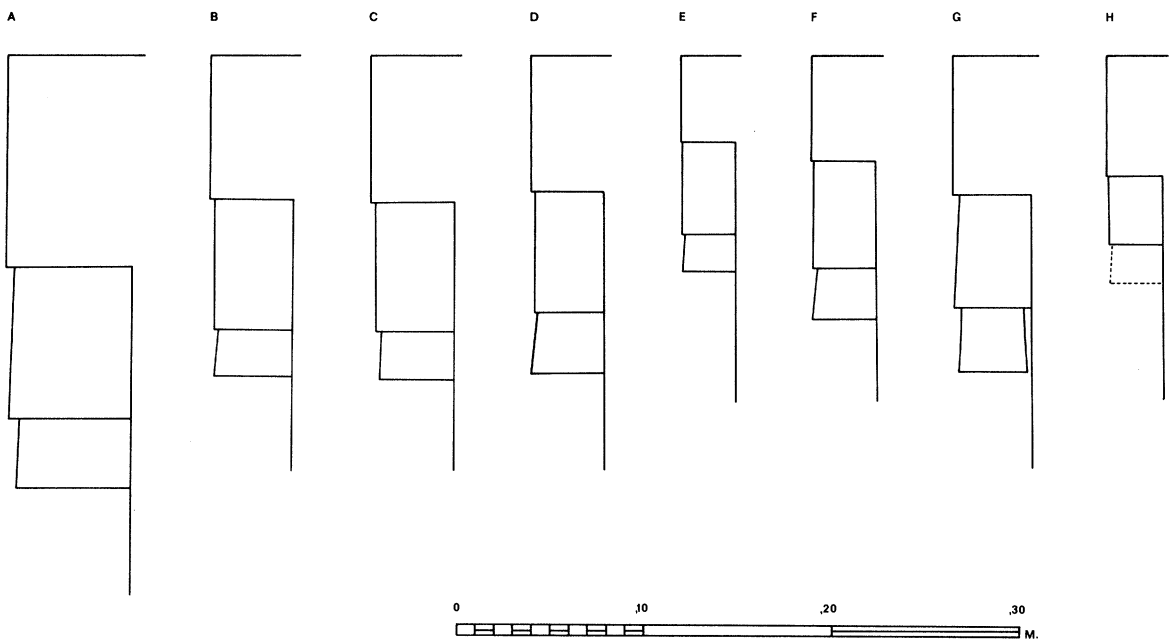


FIG. 11. Comparison of profiles of the regulae: A) Parthenon. B) Hephaisteion. C) Temple of Ares. D) Temple of Poseidon at Sounion. E) Temple of Nemesis, exterior. F) Temple of Nemesis, interior. G) Temple of Apollo, Bassai. H) Temple of the Athenians, Delos.

should correspond with the width of the triglyphs; this is the principal reason for assigning the blocks with lighter moldings to the exterior epistyle.⁵⁸

Gandy's restoration of the temple was made with the assumption that the pronaos epistyle and frieze were carried from the anta across the width of the flank pteroma and joined the back of the exterior frieze and epistyle on either side; this reconstruction of a continuous epistyle and frieze has been accepted by all modern scholars.⁵⁹ Apparently the specific blocks which would indicate the continuous entablature were not well preserved even when Gandy visited the site, for he also incorrectly assigned the epistyle blocks with heavier moldings to the exterior, and the lighter epistyle to the interior.⁶⁰

The principal evidence for an extended epistyle and frieze now discernible on the temple is the spacing of the peristyle columns, in which the third from the façade on each side is aligned with the antae of the pronaos. Although the arrangement of the peristyle does not necessarily indicate that the frieze and epistyle over the pronaos were in fact carried across the pteromata, the two columns on the flanks could have provided the necessary support for blocks extended from the pronaos.⁶¹

Additional evidence for an extended frieze is provided by the northern and southern returns of the antae, which have a length of 0.722 m., greater than those of the opisthodomos. This dimension is preserved on the northeast and southeast corner orthostates of the outer walls and antae (blocks 162L and 163M). This greater length suggests a restoration of an epistyle block and its backer carried across perpendicular to the returns, rather than an epistyle block surmounted by a simple corner triglyph.

Evidence for this juncture of blocks above the anta might have been provided by backer blocks for the frieze or epistyle of the exterior order, with appropriate cuttings for the joint, but none were present on the site. If the epistyle and frieze were carried across the pteromata, there should be a cutting at the backs of the peristyle geison blocks wide enough to receive both them and a wide frieze crown (corresponding to the epikranitis) above them. The geison blocks which have been restored to the positions at the possible point of juncture, however, are not preserved at the back and therefore provide no evidence for the inner entablature.

The arrangement on the west end of the temple is much more certain. The back of the one geison block of the flank that can be restored in the position opposite the antae of the opisthodomos is preserved and has a cutting for the epikranitis, which was carried across the pteromata to provide support for the ceiling beams. The ceiling beams change direction at this point: they were parallel with the long axis of the temple over the end pteroma (west porch) but perpendicular to the long axis over the flanks. Cuttings to receive the course

⁵⁸ The distinction between the interior and exterior epistyles was first observed correctly by Dinsmoor ("Fantasies," pp. 179–186). He notes four other temples (in the Peloponnese) where the interior epistyle has heavier moldings than the exterior. Dinsmoor suggests that at Rhamnous there was "a desire to make the porch epistyle . . . look smaller by enlargement of the Doric mouldings" (p. 184).

⁵⁹ Gandy, pl. 3; Dinsmoor, "Fantasies," p. 182.

⁶⁰ Dinsmoor, "Fantasies," p. 182.

⁶¹ The earliest example in mainland Greece for this ground plan is the Classical temple at Kalapodi (ca. 480–460 B.C.); see further discussion of this point below, p. 224.

crowning the pronaos entablature must be restored on the corresponding geison blocks at the east end as well, whether or not the pronaos epistyle and frieze carried over the pteromata. The cutting for an epikranitis alone, however, would be narrower than one for the whole entablature.

The Temple of Ares had a continuous frieze and epistyle carried across to the outer colonnade, but their outer appearance is unknown.⁶² In the Hephaisteion and the Temple of Poseidon at Sounion the columns and antae of the pronaos are aligned with the third flank column of the peristyle, and epistyle blocks are carried across to the outer colonnade; the epistylia are crowned with Ionic moldings, and the frieze above them is a continuous Ionic frieze. The Temple of Nemesis, however, is entirely in the Doric order, without the Ionicisms of the other two temples. The pronaos epistyle is Doric with Doric moldings, and it should have carried a Doric frieze. If it had a Doric frieze, there should have been triglyphs, 0.42 m. wide to agree with the width of the heavy regulae, alternating with metopes estimated to be 0.615 m. wide. A half-triglyph, or a re-entrant triglyph, would fall at the juncture of the extended frieze with the backer of the exterior frieze. At the present time no such pieces exist on the site, and both solutions seem unlikely.⁶³ Dinsmoor had suggested a “blank frieze” to get around this difficulty, but a blank frieze over Doric columns and a normal Doric epistyle would be an extraordinary solution.⁶⁴

Although at present there is no proof for the existence of an extended epistyle and frieze over the pronaos, it seems on balance likely that they were carried across to the peristyle: this is the best explanation for the wide return of the antae. Given the limitations of the evidence, a conservative solution is illustrated in the reconstructions in Figures 12, 15, and 21, with both frieze and epistyle extending over the antae of the pronaos but terminating over the return of the antae of the opisthodomos.

The Exterior Epistyle

Most of the few blocks of the epistyle left on the site can be assigned to their original positions, with the evidence provided by the configuration of the regulae and the findspots of the blocks (Figs. 11, 31). The corner epistyle blocks have the usual arrangement, with their long sides presented to the façades and their short ends on the flanks. On the three preserved corners, the short end has a regula with five guttae, and the sixth gutta is cut on the adjacent intermediate block on the flank. This division, a more economical way of cutting the block than the L-shape required by the length of a full regula, is used on the northeast corner of the Parthenon.⁶⁵ The other three corners of the Parthenon have the full regula cut on the return; so too do all four corners of the Hephaisteion.⁶⁶ On the Temple of Ares, both a split

⁶² The existence of the continuous frieze and epistyle is shown by a preserved wall block from behind the frieze: McAllister, pp. 32–33, fig. 17.

⁶³ Re-entrant angles: Coulton, *Architects*, pp. 129–133; J. J. Coulton, “The Treatment of Re-entrant Angles,” *BSA* 61, 1966, pp. 132–146.

⁶⁴ Dinsmoor, “Fantasies,” pp. 182–183. In the Propylaia to the Akropolis at Athens, there is a blank frieze on the west face of the southwest wing, above an epistyle with an extended regula along its whole length and a continuous row of guttae. This entablature is set over rectangular pillars.

⁶⁵ A. Orlandos, *Ἡ ἀρχιτεκτονικὴ τοῦ Παρθενῶνος*, Athens 1976, pls. 8, 31, 33.

⁶⁶ Koch, p. 53, ill. 35.

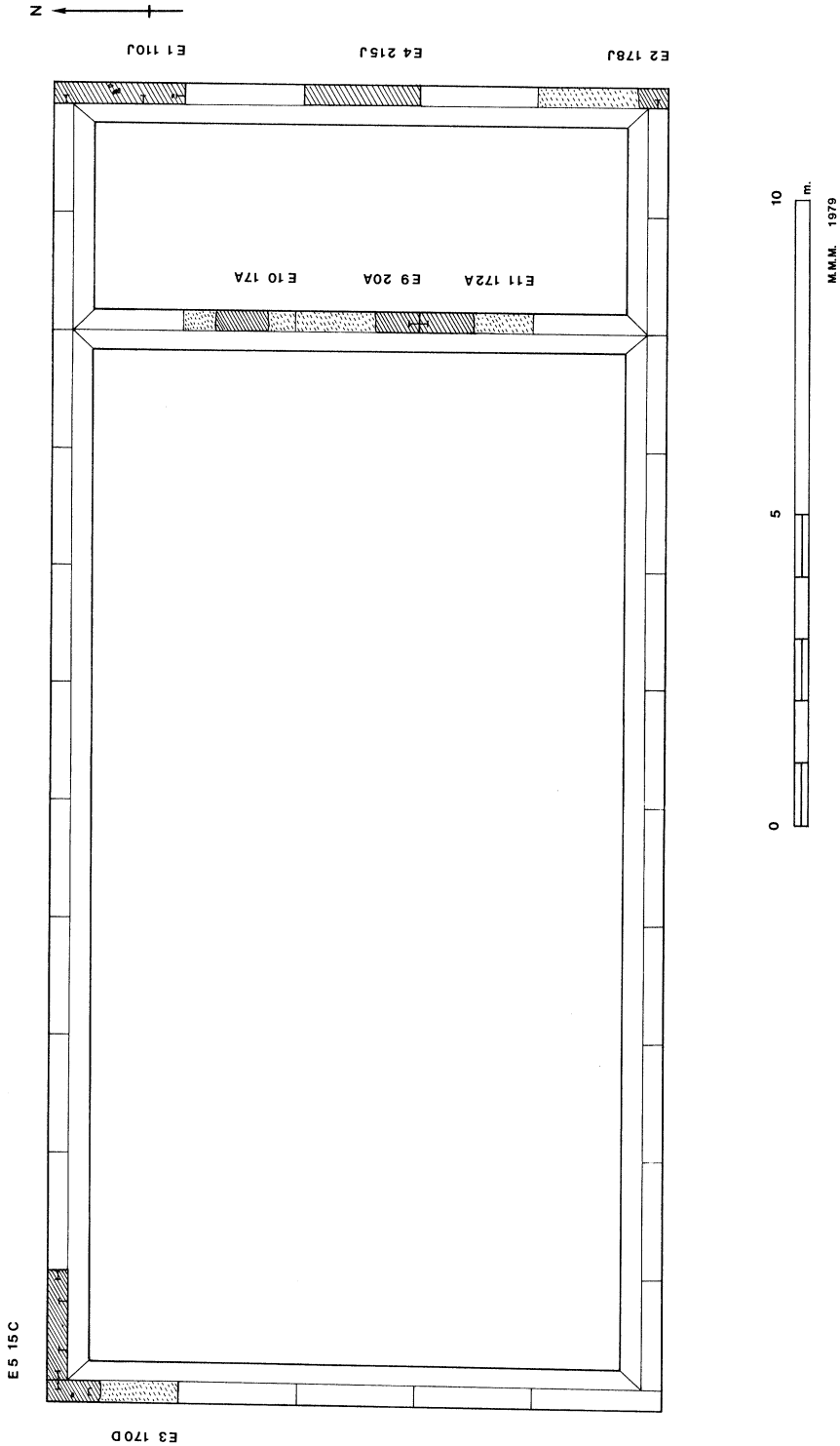


Fig. 12. Reconstructed plan of the epistyle

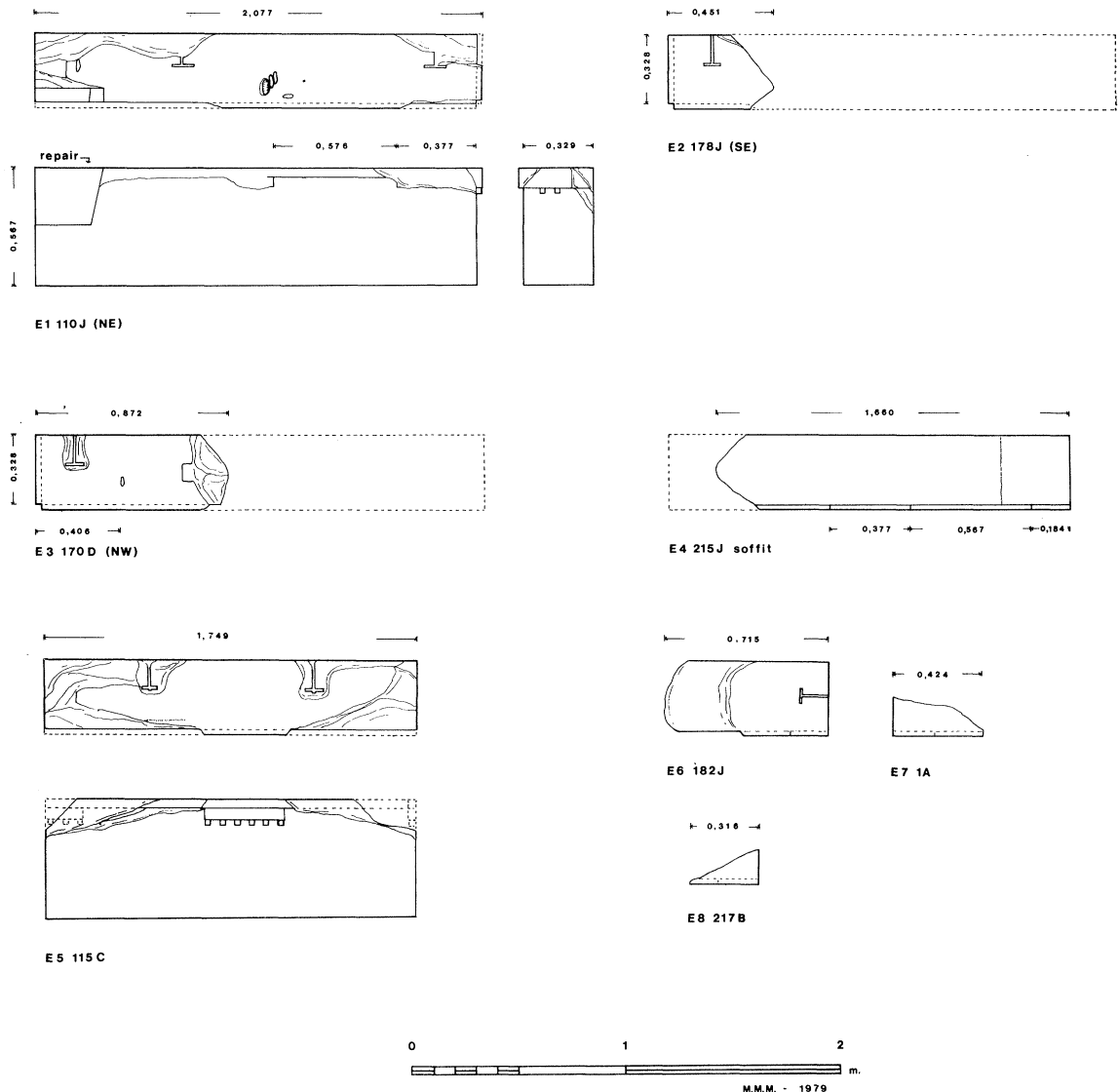


FIG. 13. Epistyle blocks E1-E8

regula and a full regula were used on two opposite corners.⁶⁷ The long sides of the corner blocks have two complete regulae and one half-regula. Block E1 is the best preserved corner epistyle block. Its full length is 2.077 m. (or 2.106 m. if the depth of the regula on the return is included). E1 was found east of the northeast corner, to which it belongs (Fig. 13).

The southeast corner epistyle block, E2 (Fig. 13), was found lying close to that corner of the temple. Only the actual corner of the block is preserved, with a present length of 0.451 m. The return, which would be on the south side, has a regula with five guttae, 0.328 m. long. The height of E2 is 0.567 m.

⁶⁷ Dinsmoor, "Ares," p. 27; McAllister, pp. 16-17.

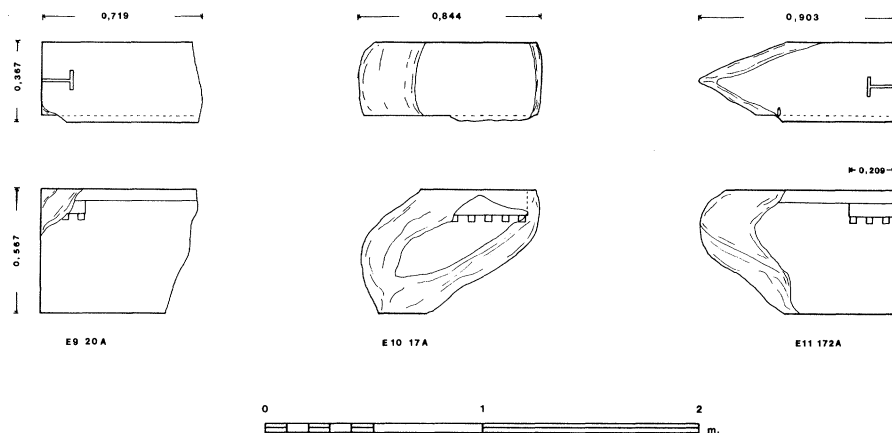


FIG. 14. Epistyle blocks E9-E11

The northwest corner epistyle block, E3 (Fig. 13), was found lying just north of the northwest corner. Slightly less than half the block is preserved, including the outer corner, with a length of 0.872 m. One of a pair of lewis holes is preserved on the top surface.

An intermediate block, E5 (Fig. 13), lay north of the northwest corner of the temple. Its full length is preserved (1.749 m.), which includes a half-regula on the left end, a full regula in the center, and one-sixth of a regula (with one gutta) on the right. Because of the short regula on its right end, and because it was found below the appropriate position, E5 is assigned to the north flank, adjacent to the northwest corner. The length of this block, 1.749 m., added to the width of the short end of the corner block, 0.328 m., comes to 2.077 m., exactly the length (east face) of E1, the northeast corner block. Since the interaxial space between corner columns and adjacent flank columns was contracted to *ca.* 1.73 m., the joint between the corner block and the block on the flank falls only 0.019 m. outside the central axis of the corner column.

Another intermediate block, E4 (Fig. 13), was found lying upside down east of the center of the east side of the temple. The face of this block carries a dedicatory inscription of the Roman period (p. 237 below). The block has one complete regula in the center and two half-regulae on each end (one cemented). Because of the inscription on its face, the block is assigned to the center interval on the east side. Although the complete length is not preserved, it may be restored as 1.879 m.

There are three pieces of other epistyle blocks (Fig. 13): E6, the right end of a block; E7 and E8, each a fragment from the left end of a block. These pieces cannot be assigned to any specific location on the epistyle.

The calculated dimensions of the epistyle would have been 9.8492×21.2828 m. These figures are obtained by adding the length of the corner blocks to the appropriate number of interaxial columnar spaces and subtracting 0.027 m. on each side for the inward inclination of the column axes ($2 \times 2.077 + 3 \times 1.9062 - 2 \times 0.027 = 9.8492$ m.; $2 \times 2.077 + 9 \times 1.9062 - 2 \times 0.027 = 21.2828$ m.).

TABLE 3: Epistyle Dimensions and Proportions

	Height of Taenia	Height of Epistyle	Ratio T:E
Parthenon [A]	0.11303	1.348	1:11.93
Propylaia (Central Hall)	0.091	1.150	1:12.63
Propylaia (Wings)	0.077	0.810	1:10.52
Hephaisteion [B]	0.0762	0.836	1:10.97
Temple of Ares (restored) [C]	0.076	[0.836]	[1:11]
Temple of Poseidon, Sounion [D]	0.072	0.834	1:11.58
Temple of Nemesis (exterior) [E]	0.046	0.567	1:12.326
Temple of Nemesis (pronaos) [F]	0.056	0.567	1:10.125
Temple of Apollo, Bassai [G]	0.074	0.722	1:9.76
Temple of Athenians, Delos [H]	0.064	0.566	1:8.843

The blocks of the epistyle were clamped to each other with double T-clamps, but they were not doweled into the abaci of the capitals. The top surfaces of the capitals have relieving edges 0.04–0.053 m. wide on all four sides but no other cuttings. At Sounion the epistyle blocks of the Temple of Poseidon were doweled into the capitals with small vertical dowels (Pl. 38:d). These epistylia were much larger blocks, however, with a length of 2.522 m. Whether the epistylia of the Hephaisteion and the Temple of Ares were doweled is not known.

The Epistyle Backers

One nearly complete epistyle backer, EB1 22A, was found on the north side of the temple. Its length (1.88 m.) and height (0.567 m.) match the length and height of the epistyle blocks. The top of the outer face of the block was crowned with a fascia 0.092 m. high and 0.015 m. in projection. Its bottom surface has two weathered lines where it rested on the relieving edges of the capitals. It is curious that only one of the original 32 blocks from the outer peristyle has survived, but, like the epistyles themselves and the wall blocks of the temple, their convenient, squared-off shape must have made them attractive to scavengers for building material.

The Pronaos Epistyle

Only three pieces of the interior epistyle are preserved (Fig. 14). Because all were found close to the north side of the temple at its east end, they are assigned to the pronaos rather than to the opisthodomos. The pieces include the left end of a block, E9; the right end of a block, E11; and the center of a block, E10. The cuttings for T-clamps on E9 and E11 match, and so they are assigned adjacent positions. Since only parts of the blocks are preserved, their exact locations within the course cannot be determined. In the reconstruction in Figure 12, their positions are arbitrary.

In Doric buildings in the second half of the 5th century, the proportion of the height of the taenia to the total height of the epistyle changes. The measurements (in meters) and ratios are given for several later 5th-century buildings in Table 3 (p. 169 above; cf. Fig. 11).⁶⁸

This comparison shows a general development of a taenia heavier in proportion to the whole height of the epistyle. The taenia on the exterior of the Temple of Nemesis is unusually light for the second half of the 5th century; it is closest to those of the Parthenon and the central hall of the Propylaea. As we shall see, there are other details in the Temple of Nemesis which recall details in the Parthenon. The proportion of the pronaos taenia, however, falls between that of the wings of the Propylaea (the last part of the construction, which stopped in 432 B.C.) and that of the Temple of Apollo at Bassai (built in the 420's).

FRIEZE

Above the thirty-two columns and thirty-two intervals of the peristyle of the Temple of Nemesis was a frieze of sixty-eight triglyphs (eight paired as corner triglyphs) and sixty-four metopes. Of those on the north, south, and west sides, only eleven metopes and eleven triglyphs are missing today. The frieze on the east was replaced in the Roman period, and half the replacement blocks are preserved. The metopes and triglyphs were carved on blocks in combinations of two, three, and four units, but most blocks were four units long (Pl. 39:a). Some are very well preserved; others are in small, broken, and badly weathered pieces. In 1977 the blocks could be found scattered around the temple, usually not far from the side to which they belong.

The triglyphs were designed to be 0.377 m. in width, and eleven of twenty completely preserved triglyphs measure precisely 0.377 m., while others vary from 0.366 to 0.382 m.; they average 0.3769 m. Twenty-one metopes are completely preserved, ten of them set between triglyphs on the same block and eleven on the ends of blocks, where the next triglyph on the adjacent block overlapped them. The ten metopes with fixed widths average 0.5715 (i.e. *ca.* 0.572 m.). Four measure 0.572 m., while the others vary between 0.566 and 0.575 m. The eleven metopes on the ends of blocks average 0.5836 m., varying from 0.572 m. to 0.592 m. (The overlap of the triglyphs on perfectly preserved blocks varies slightly, 0.021–0.024 m.) Together, the widths of the average triglyph of 0.377 m. and the average metope of 0.5725 m. equal 0.949 m., a measurement which recurs as a module throughout the building. The heights of completely preserved blocks are 0.576 m. (two blocks) and 0.577 m. (two blocks); they average 0.5765 m.

The frieze has been discussed most recently by Dinsmoor, who measured the length of twelve frieze blocks and noted four additional blocks of the Roman period on the site.⁶⁹

⁶⁸ Parthenon: Orlandos (footnote 65 above); Hephaisteion: Koch, p. 53; Temple of Ares: McAllister, pp. 16–17; Sounion: A. Blouet, *Expédition scientifique de Morée*, Paris 1833, III, pl. XXXIII; Bassai: Blouet, II, pl. X; Propylaea: R. Bohn, *Die Propyläen der Akropolis zu Athen*, Berlin 1882, pl. XI; Temple of the Athenians, Delos: Courby, *Délos* XII, pp. 121–122.

⁶⁹ Dinsmoor, "Fantasies," pp. 195–203; his elegant reconstruction of the frieze course and its jointing system is based on the numbers of triglyphs and metopes on the 12 blocks he measured and the order in which the units are arranged. The four corner blocks present their long sides on the flanks; between them, blocks of three

Twenty-eight blocks are accessible today, five of them replacements of Roman date. The cuttings on the top surfaces of the twenty-three original blocks provide welcome evidence for their original arrangement, and a more certain reconstruction of the frieze can be made when this evidence from the cuttings is used together with the lengths of the blocks and the combinations of triglyphs and metopes (Fig. 15). The blocks have the following cuttings: 1) cuttings for T-clamps on top at each end and at the back (their exact location on the side varies enough that if two cuttings match, an original join is certain); 2) dowel holes on top, parallel to the face of the block, for attaching the geison blocks, and pry holes used for positioning; 3) shift cuttings at the bottom of the block.

Among these cuttings, the most useful for reconstruction are the dowel holes for the geison blocks. Blocks were customarily doweled into the next lower course at the bottom edge of one joint surface, where hot lead could easily be poured around the dowel from above, before the next adjacent block was set into position. A hole cut near the exposed end of the dowel hole on the lower course held the end of the pry used to shift the upper block lengthwise into position. These pry holes indicate not only the direction in which the upper block was laid but also which side of the dowel hole coincided with the edge of the upper block. On the frieze blocks, the dowel and pry holes give the exact placement of the edges of the corresponding geison blocks.

As on most Doric temples of the 5th century, the soffit of the geison was carved with mutules and viae and placed over the frieze so that there was a mutule over each triglyph and each metope, with viae between. At Rhamnous, the individual geison blocks have two mutules and two viae, with the exception of the corner blocks, which have two mutules on each side with viae between, and the two blocks in the center of each side of the temple. Each center block has two full mutules and one half-mutule; the latter combine to form the odd center mutule required by the odd number of intercolumniations on each side. Since the corner blocks end with a mutule at the joint, it follows that intermediate geison blocks with a via on the left side belong left of center, and those with a via on the right belong right of center. The viae of the geison occur over the sides of the metopes, and so the location of the dowel and pry holes on a frieze block (on the left or the right side of the metopes) can indicate that the geison block above it ends in a via on the left, and belongs left of center, and the frieze block itself belongs left of center; or that the geison block ends in a via on the right, and the geison and frieze blocks belong right of center.

units alternate with blocks of four units and form a neat, logical arrangement. On the east front, the replacement blocks have two units each with one single metope next to the northeast corner. This reconstruction of the north, south, and west sides, although pleasing in pattern, cannot be correct. It does not include all the blocks on the site, and it requires blocks of a shape which does not exist there. The combinations of triglyphs and metopes on the extant blocks alone make the reconstruction impossible: fifteen blocks of four units with a triglyph on the right end (MTMT) now exist, although only six are used in the reconstruction; there is one original block of two units (MT), but there is no place for it in the reconstruction of the north, south, or west sides. Furthermore there are no intermediate blocks of four units with a metope on the right end (TMTM), although his reconstruction requires six of these. Dinsmoor apparently did not measure the cuttings on the blocks, for he does not discuss them.

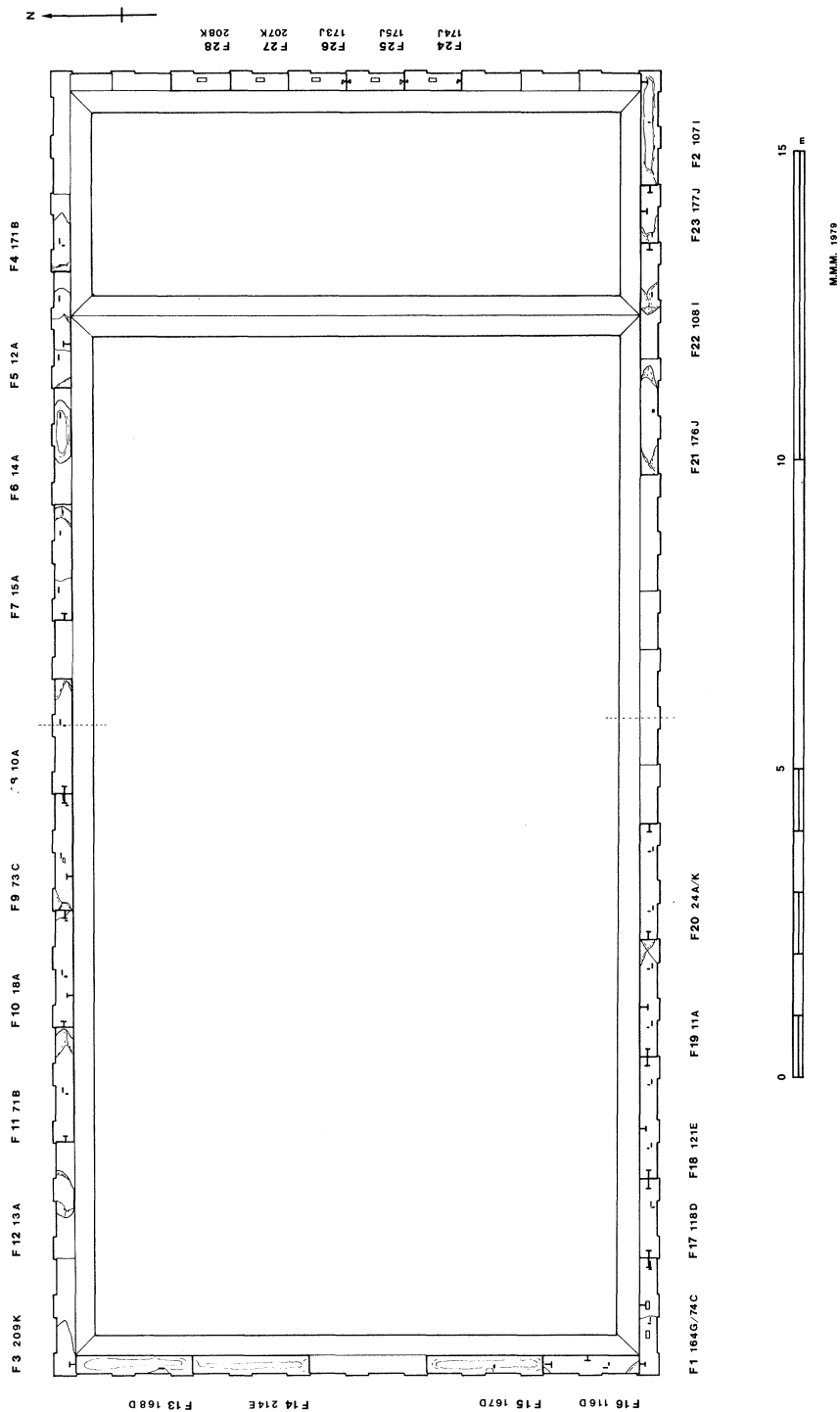


FIG. 15. Reconstructed plan of the frieze

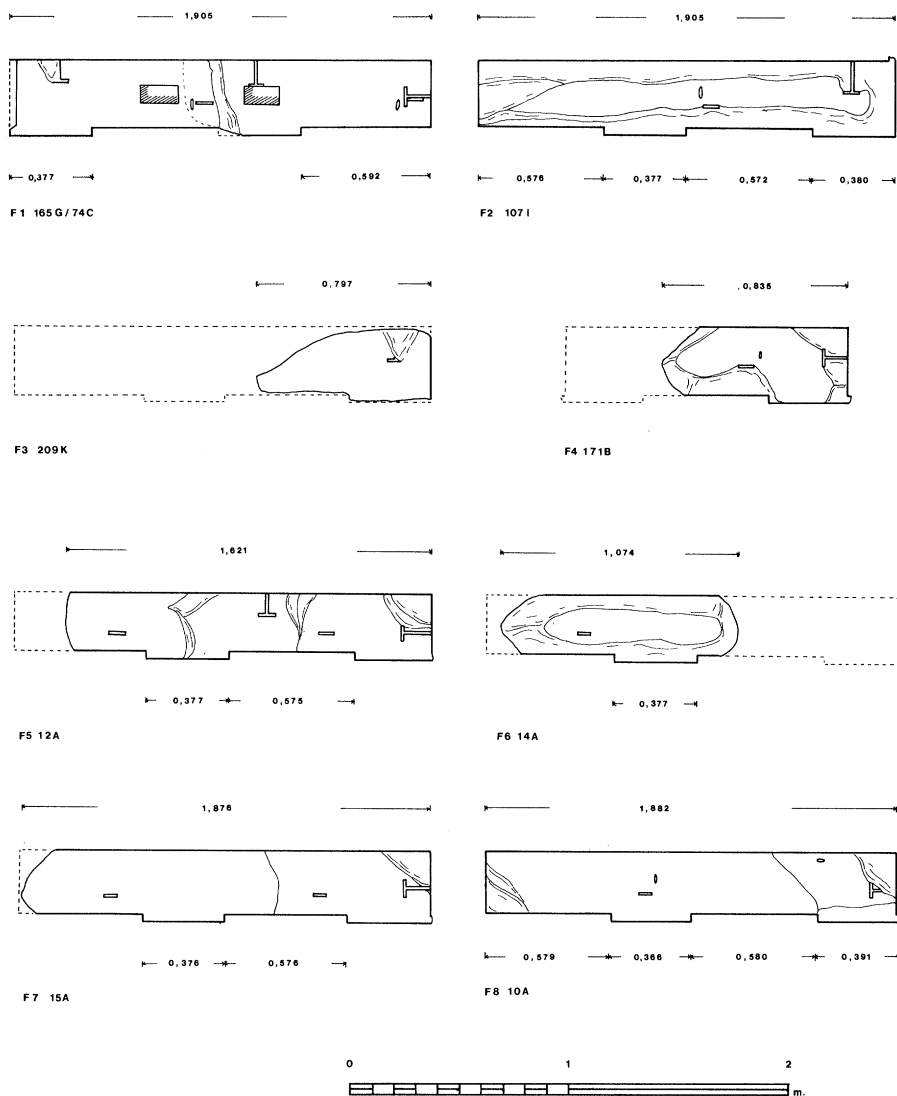


FIG. 16. Frieze blocks F1-F8

The evidence of dowel holes, then, makes it possible to place frieze blocks left or right of center, and since the matching dowel holes on the bottoms of the geison blocks are preserved on many blocks, the direction of laying can help determine to which side of the temple a block belongs. The clue is the position of the pry hole used to shift the block into position: if the hole is to the left of the dowel, it was used to shift the block from left to right; if on the right, it was used to shift the block from right to left. The direction of laying is generally consistent along one side. As we have seen, the long sides of the corner epistyle blocks were on the ends of the temple, while the frieze blocks above them had their long sides on the flanks, following the

standard practice of breaking vertical joints in masonry construction. Corroborating evidence for this arrangement is found on E3, the northwest corner epistyle block. It has a pry hole 0.406 m. from the left end, which was used to set the corner frieze block.

Three corner blocks of the frieze are preserved, belonging to the southeast, southwest, and northwest corners (Fig. 16). F1, the southwest corner block, was found in two pieces, one lying near the southwest corner, the other on the north side of the temple. Large lewis holes are cut into its top; it may have been the last laid block of the course. F2, the southeast corner block, lay close to the southeast corner of the temple. F3, identifiable as the northwest corner block even though badly weathered and damaged, was found north of the northeast corner.

The North Flank

The block from the center of the frieze course on the north side, F8 (Fig. 16), is the only preserved frieze block which has a dowel hole for the geison in the center of a triglyph (0.693 m. from the left edge of the block). Because the dowel would have attached a geison block with a half-mutule, that is, a center block, F8 also must belong in the center. It is assigned to its position on the basis of its present location just north of the center of the north side. F8 has four units (MTMT), and the geison block above it was pried to the left.

The position of F8 on the north side, with its left triglyph in the exact center of the side, leaves space for eight metopes and eight triglyphs between its right triglyph and the left metope of F3, the northwest corner. Since the majority of preserved frieze blocks have four units each (MTMT), it is highly probable that four such blocks filled this space.

Three blocks found along the north side of the temple can be assigned to the northwest part of the frieze. All three have dowel and pry holes for geison blocks which ended in a via on the right side; therefore the frieze blocks themselves belong right of center. The geison blocks were pried to the left, as were the center geison blocks above F8. F9 (Fig. 17) has a cutting for a T-clamp on the left which matches the clamp cutting on the right of F8; the T-clamp cutting on the right matches that on F10 (Fig. 17). Although the left side of F11 (Fig. 17) is broken and the cutting for a T-clamp is not preserved, it is assigned here next to F10. A fourth block, F12 (Fig. 17), assumed here to be full length (MTMT), is restored adjacent to F11. The northwest corner block F3 is badly damaged, as are F11 and F12, while the rest of the frieze on the north side is better preserved.

The other possible positions for blocks F11 and F12 are toward the east end of the south flank, or on the west side toward the south. As we shall see, however, these positions are occupied in the proposed reconstruction by other blocks found lying close to those sides.

Between the center block F8 and the missing northeast corner block were nine triglyphs and eight metopes. Theoretically, they could have been carved either on three blocks of four units (MTMT) and one of five units (TMTMT) or on three blocks of four units (MTMT), one of three units (TMT), and one of two units (MT). There are no blocks of five units on the site. Such a length would have been difficult to quarry and cumbersome to maneuver into position. It is most likely that the five units were carved on two separate

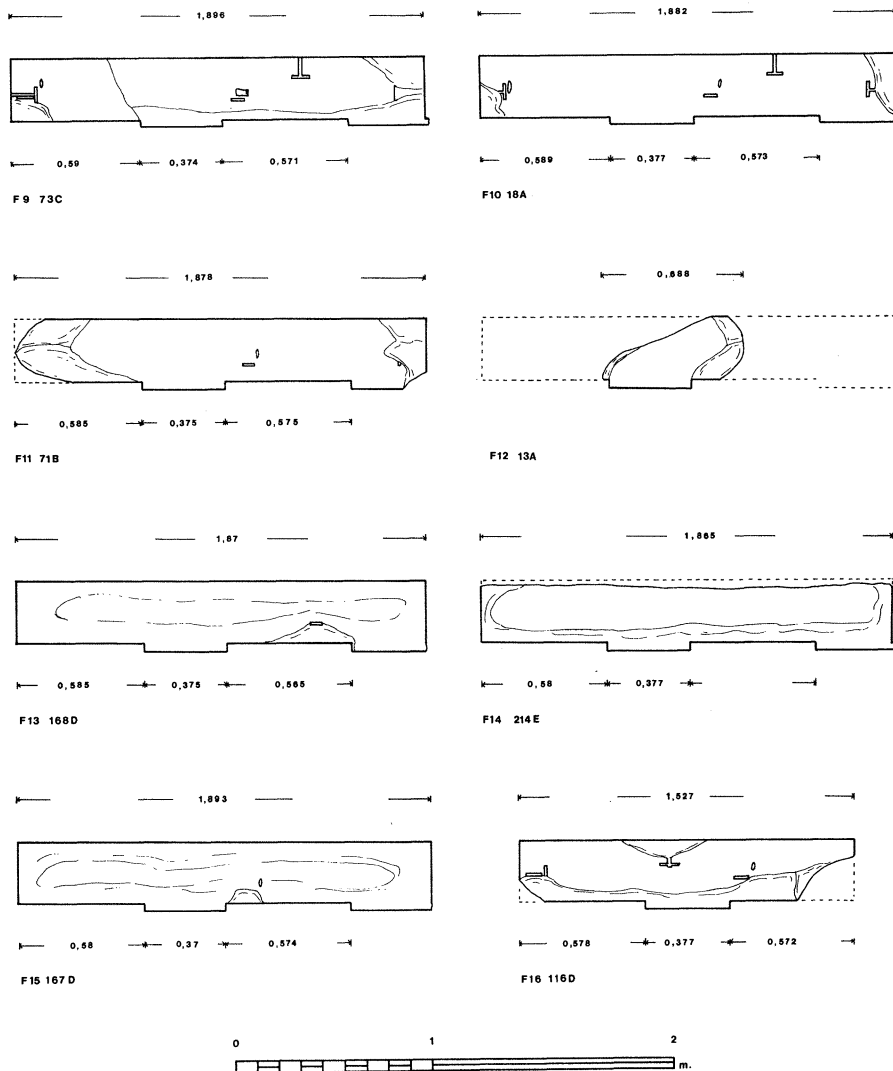


FIG. 17. Frieze blocks F9–F16

blocks, since F23 gives evidence of a block of two units and F17 of a block of three (both assigned to the south flank).

Three blocks of four units were found north of the north side, east of the center. Each has dowels which indicate that the gison blocks above them ended in a via on the left and belong left of center, and so these frieze blocks also belong left of center. A fourth block, F4, also belongs left of center for the same reason. The preserved length of F4 is only 0.835 m., but the block is restored here with three units (TMT) to a full length of 1.281 m. F4 is placed adjacent to the northeast corner, since it ends in a (restored) triglyph on the left side,

which is required of this position. Next to it are assigned F5 (MTMT), F6 (MTMT), and F7 (MTMT). Most of the cuttings for T-clamps on these blocks are not preserved, so that the exact order of the blocks is not certain. Nonetheless, F5 is placed next to F4 because its back preserves a T-clamp cutting for attachment to the backer block of the frieze. Four blocks would have met behind the frieze block in this position: two backer blocks for the exterior frieze, and one frieze block and one backer carried across to the peristyle from the northeast anta. F5 is assigned here since its four-unit length could accommodate such numerous connections; a block of two units restored here would have resulted in yet another joint close to the others. Since F7 has no T-clamp cutting for attachment to the backer block, and F6 is not sufficiently preserved to determine whether it was clamped at the back, F5 is preferred for this critical position. In the reconstruction in Figure 15, a space for a block of two units, which is not preserved, is reserved on the left of the center block F8.

The South Flank

Although the center block of the frieze on the south flank is not preserved, it is assumed that its treatment was like that of the north flank, F8. With this arrangement, the geison blocks above it would then have had their joint (between half-mutules) over a triglyph in the middle of a block rather than at the end of a block. The jointing of the blocks between the southwest corner and the center block is then the same as that of the eastern part of the north flank: this section of the frieze, in addition to the corner block, is composed of one block of three units, three of four units, and one of two units (Fig. 15; cf. Fig. 18).

F17 (TMT) belongs left of center because of the dowel hole for the geison above, and as a block of three units ending in a triglyph on the right, it can only fit the position adjacent to the corner block F1 or the equivalent position on the northeast. The position next to F1 is confirmed by the matching T-clamp cuttings on F1 and F17.

F18 (MTMT), a block of four units, belongs left of center because of the dowel holes for the geison, which indicate that the geison block ended in a via on the left and belongs left of center. The cutting for a T-clamp on the left end matches that on the right end of F17.

F19 (MTMT), a block of four units, also belongs left of center because of the dowel holes for the geison. On the evidence of the T-clamps, the left side of F19 adjoins F18. F20 (MTMT), a block of four units belonging left of center, probably follows F19 to the right. The T-clamp cutting on the right side of F19 is not preserved, but F20 is the only remaining four-unit block which can be assigned to the south side. Both F19 and F20 lie north of the north side of the temple, and both are unusually well preserved. Their position on the south flank of the temple is assured by the direction of laying of the geison course above: on the western part of the south flank, the blocks were pried from left to right and the dowels set on the right side of the geison blocks. On the eastern part of the north flank, the geison blocks were pried from right to left and the dowels set on the right side of the geison blocks. In addition to F19 and F20, some of the geison blocks above them, G22, G26, and half of G24, also were found lying north of the temple, near the east end and are much better preserved than blocks assigned to the north flank (see p. 194 below). At some time after the destruction

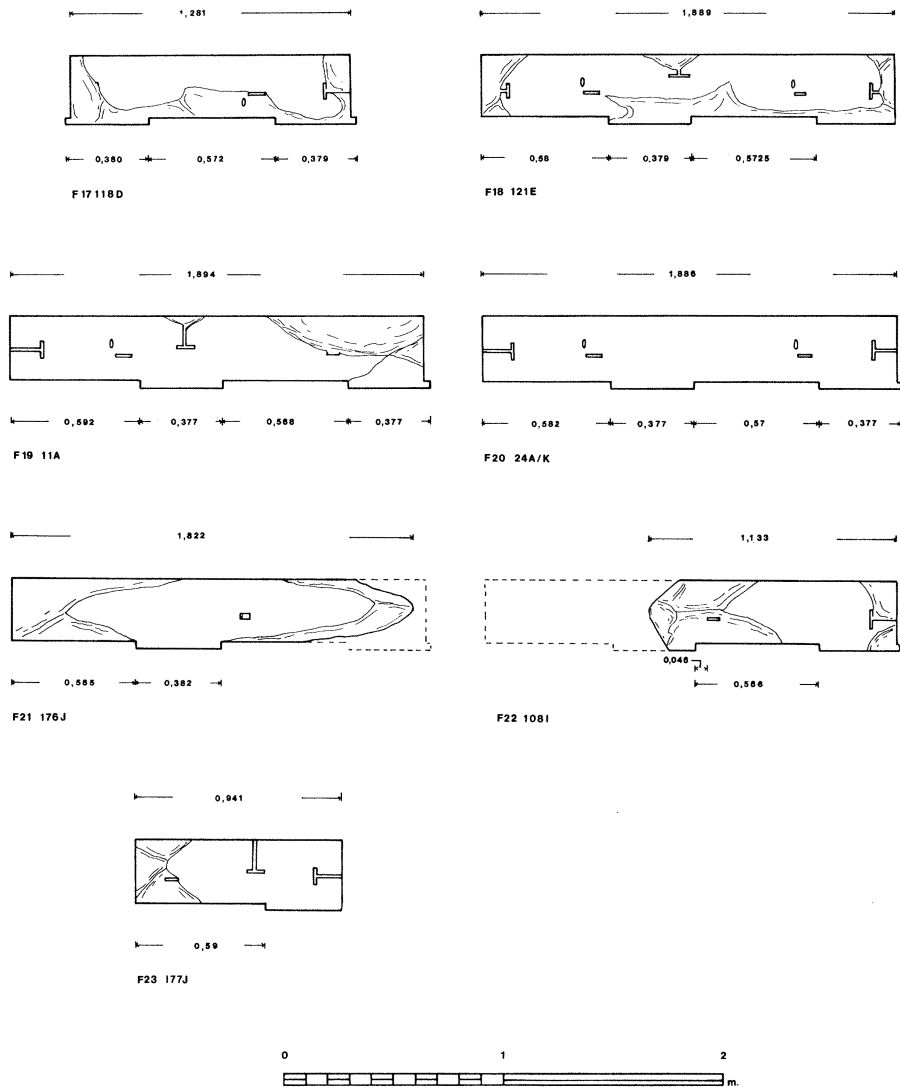


FIG. 18. Frieze blocks F17–F23

of the temple this group of blocks must have been moved to the north side, perhaps when the Society of Dilettanti were investigating the smaller temple.

Like the center frieze block, the two-unit block for the position just left of center is not preserved.

We might have expected that the space between the center block and the southeast corner would be filled by four blocks of four units each, as on the northwest flank. Here, however, the space was occupied by three blocks of four units each and two of two units each. This arrangement provided a solid construction above the third column from the east, where the frieze was brought over from the southeast anta of the pronaos.

To the right of center on the south flank, the geison blocks were pried from left to right and doweled on the left, just as those left of center. Geison blocks G30, G28, G15, and G14, all assigned to the eastern part of the south flank, preserve dowel holes on their left sides, as does the corner block G1.

On the evidence of the dowel and pry holes for the geison course above, three frieze blocks are assigned to the southeast flank, F21 (MTMT), F22 ([M]TMT), and F23 (MT). All these blocks lie southeast of the southeast corner. F23 (MT), the two-unit block, is restored next to the corner block F2. While the clamp cutting is not preserved on the left end of F2, the assignment is assured simply because F23 is a block of two units; the short block is required next to the corner so that F22 ([M]TMT) can be placed on its left, in a position indicated by an unusual cutting. F22 has a peculiarly placed dowel hole for the geison, only 0.046 m. to the right of the right edge of the left triglyph. The length of the dowel hole is slightly more than half the width of the via on the geison above (0.094 m.) and was cut in this position to fasten a geison block with a half-via on its left side (see p. 193 below). This geison block, G14, exists on the site. The corresponding dowel hole is preserved on its left end, and it fits into position R, just east of the frieze brought over from the southeast anta of the pronaos.

F21 (MTMT) also has a peculiarity: there is no dowel hole for the geison block, only a shallow, square shift hole. This cutting, located 0.08 m. to the right of the left triglyph, shows that there was a joint in the geison course above it. The geison block resting on the right half of F21 ended in a via on the left and was not doweled; it therefore was the one laid last over this section of the frieze. The geison block assigned for other reasons to position P, directly over the right side of F21, is completely preserved at its left end and has no dowel holes, which confirms that the block was the last laid in this section (Pl. 40:a).

The geison block over the left side of F21, G30 in position O, had a dowel in its left side, although the corresponding dowel hole on the left half of F21 is broken away. Block G30 must have been the first laid in this section of the geison, and the square hole on F21 was used to shift it exactly into its proper position. In the reconstruction of the frieze in Figure 15, space is left for one block of four units and one of two units between F21 and the center block. Neither of these is preserved.

The West Front

Since the corner blocks F1 and F3 end in a triglyph on their shorter sides, which form part of the frieze of the façade, it follows that both blocks adjacent to the corners must end in a metope: one on the left, adjacent to the northwest corner, and the other on the right, adjacent to the southwest corner.

F16 (MTM) is the only block on the site today with two metopes and a triglyph. The dowel holes for the geison indicate that it ended in a via on the right and belongs right of center; F16 is restored next to the southwest corner. The geison blocks on the west façade were pried from right to left and doweled on the right end. Three geison blocks from the west façade preserve dowel holes on the end: G45 (belongs left of center), G56, and G49 (belongs right of center).

This leaves space in the frieze course for four blocks of four units each. Three such blocks are preserved: F13 (MTMT), F14 (MTMT), and F15 (MTMT). F15 has a pry hole near a broken, hollow area where the dowel hole would have been cut. The placement indicates that the geison block above ended in a via on the right. The only position for F15 is to the left of F16.

F13 (MTMT) belongs left of center because of the placement of the dowel hole for the geison. It is assigned here next to the northwest corner block F3, although it could also fit the position just to the right of the one assigned. F14 (MTMT) is so weathered that almost no top surface exists, and no cuttings are preserved. F14 could fit in any of the three positions between the northwest corner and F15; it is assigned here to the right of F13. The present location of blocks F13, F14, and F15 near the west end of the temple is an important consideration for assigning them to the west façade rather than to the north flank. They are large blocks, and it is unlikely that they were moved far from their proper side.

The East Front

No identifiable piece of the original frieze of the east façade is on the site today; there are, however, several replacement blocks of the Roman period which are discussed below. Although the Classical east frieze is missing from the site, modern scholars have considered it as a possible location for a sculptured metope of unknown provenience now in the Villa Albani at Rome. Ernst Langlotz suggested that the east side originally had sculptured metopes, and he found an iconographically suitable candidate in the Albani piece, noting that not only its subject (interpreted as Artemis and Leto killing the Niobids) but also its stylistic date would be appropriate for the Temple of Nemesis.⁷⁰ Dinsmoor rejected Langlotz' attribution on the basis of the dimensions of the metope, which he considered to be too small to suit the building.⁷¹

Langlotz assumed that the Albani metope had been cut from a larger block which included triglyphs, even though, as Dinsmoor remarks, the "thickness and condition of the back of the slab in the Villa Albani are unknown."⁷² If the slab were sawn, either from a dismantled larger block with triglyphs or directly out of its place on the building, it may have lost some height and width in the process, and the smaller measurements cited by Dinsmoor would not by themselves provide sufficient reason to reject Langlotz' attribution.⁷³ Langlotz' supposition that the block was cut down is doubtful, however, since in

⁷⁰ E. Langlotz, "Eine Metope des Nemesistempels in Rhamnous," *Scritti in onore de Bartolommeo Nogara*, Vatican City 1937, pp. 225–230, pl. XXI; Karusu, "Akroter," p. 182, fig. 50:1; F. Hiller, *Formgeschichtliche Untersuchungen zur griechischen Statue des späten 5. Jahrhunderts v. Chr.*, Mainz 1971, p. 55, note 120 and pp. 63–69; Ridgway, pp. 30–31, 34, 39.

⁷¹ Dinsmoor, "Fantasies," pp. 199–203.

⁷² Dinsmoor ("Fantasies," p. 202): "... at present it seems to be a comparatively thin slab, but this in itself, unless future examination should reveal Greek tooling rather than Roman chipping or sawing on the back, would not militate against a Rhamnountine origin." This conclusion is apparently the result of his assumption that a sculptured metope might have been cut on the same block as triglyphs.

⁷³ Other reasons put forth by Dinsmoor for rejecting the slab are the height and projection of the taenia, which he says do not match blocks on the site today. The height of the taenia on the frieze blocks still extant, however, does vary; on the best preserved blocks it is as follows: 0.052 m. (on three blocks), 0.053 m. (two

Greek temples of the Classical period carved metopes are cut on individual slabs and slipped between the triglyphs.⁷⁴ The small scale of the Temple of Nemesis would not necessarily have forced a departure from this custom, for even the Treasury of the Athenians at Delphi, with triglyphs and metopes of dimensions similar to those on the Temple of Nemesis, has figured metopes carved on individual slabs. Practical concerns such as ease of carving and handling made separately carved metopes the common practice, and the technique also facilitated the use of a different material for the metopes, if that was wanted.

Although no pieces of the original east frieze have been found at Rhamnous, it is clear from the preserved southeast corner block that individual metopes were not used: F2 (MTMT-T) has no slot to receive a thin metope slab. It has anathyrosis along the surface which adjoined the metope of the next block on the east façade and a cutting for a T-clamp to fasten the two together in a location which indicates that the missing eastern block had the usual thickness of *ca.* 0.32 m.

The slab in the Villa Albani is now set in plaster, which makes measurement of its dimensions difficult and uncertain. Both the left and right edges, however, are partly visible and each has a finely beveled edge characteristic of metopes fitted into slots between two triglyphs.⁷⁵ Since individual inserted metopes were not used at Rhamnous, the Albani metope could not have belonged to the temple.

Although the original blocks of the east frieze are not preserved, the system of jointing may be deduced from the epistyle blocks and by analogy with the west façade. Epistyle block E1, belonging on the northeast corner, is preserved in its full length of 2.077 m. Two sets of pry holes on its top surface were used to set the blocks of the frieze: 1) a pry hole 0.199 m. from the left end, of a shape and depth similar to other original pry holes used on the building; 2) four pry holes, 0.94–0.996 m. from the right end, cut when repairs were made in the Roman period (see below); three of these are perpendicular to the face of the block and are larger, deeper, and more roughly cut than the pry holes for the original construction. The fourth, parallel to the face of the block, is also roughly cut. The hole closest to the left edge

blocks), 0.054 m. (one block), with an average of 0.0526 m. Dinsmoor measured 0.051 m. on the Albani relief and 0.0545 m. at Rhamnous. Since there is a greater variation among the preserved examples than Dinsmoor realized, the height of the taenia is not a valid reason to reject the metope. (On some blocks there is a relieving edge 0.001–0.002 m. high; one wonders whether the Albani metope has this treatment and whether Dinsmoor considered it in his measurements of the blocks at Rhamnous.) The projection of the taenia, which Dinsmoor measured on the relief as 0.004 m., in contrast to the 0.0125 m. he measured at Rhamnous (which in fact varies too, 0.012–0.013 m.), also does not provide firm evidence for rejection. The smaller projection of the taenia on the sculptured metope could have been required by the heads of the figures, which are carved to extend up over the taenia.

⁷⁴ After the Archaic period, the first instance of carved metopes on the same block with adjoining triglyph(s) are the metopes from the Temple of Athena at Ilion, of the early 3rd century B.C. (B. Holden, *The Metopes of the Temple of Athena at Ilion*, Smith College, Northampton, Mass. 1964, p. 6 for composition; for date, pp. 1–5 and 29, and W. Hoepfner, "Zum Entwurf des Athena-Tempels in Ilion," *AM* 84, 1969, pp. 165–181). Ridgway (pp. 27–28) points out how infrequent were sculptured metopes in the Classical period; except for the Parthenon and Hephaisteion, no Doric temples in Athens or Attica had carved metopes.

⁷⁵ I confirmed this detail in November, 1987; the edges of the metope in the Villa Albani were then visible.

was probably used to position a block of three units (MTM) adjacent to the far right corner (like F16 on the west); four blocks of four units (MTMT) would then have filled the rest of the space.

The second set of pry holes, close to the right end of E1, was cut for a block of two units which was pried from right to left. The fourth Roman pry hole, parallel to the face of the epistylon, was used to help place a final, single metope next to the corner triglyph. This metope, a replacement, was the last laid block of the repaired frieze.⁷⁶

The Replacement Blocks of the Roman Period

Five blocks of two units each are preserved of the nine carved for the east frieze in the Roman period. These blocks are easily recognizable as replacements: their marble is darker and coarser than that of the original blocks; they have large, rectangular holes with sloping sides in the top surface, a cutting for a type of lewis used in the Roman period; three of the five blocks have crude cuttings for T-clamps; the width of the triglyphs and metopes varies several centimeters; and the height of the taenia is 0.085 m., uniform across the tops of the metopes and triglyphs (Fig. 19, Pl. 39:b).

Since the replacement blocks of the geison were not doweled into the replacement frieze, and since the few T-clamp cuttings were so rough, it is not possible to reconstruct the original arrangement of the blocks. In Figure 15, the three blocks with T-clamps (F24, F25, and F26) are shown joined over the center of the front, with the other two (F27 and F28) to the right of them.

The Frieze Backers

Ten blocks which were used as backers for the original frieze remain on the site; they have the same height as the frieze, 0.576 m. Those which preserve their full length would have backed frieze blocks of four units. The outside face, presented to the interior of the peristyle, is completely smooth and carries no moldings.⁷⁷ The geison blocks were often, but not always, doweled into the backer blocks as well as the frieze blocks. One block, FB1, as indicated by the beveled angle on its left end, backed a corner block and is probably from the northeast corner near which it was found. Another, FB4, is an original frieze backer which was re-used in the repairs of the Roman period. The original T-clamp cuttings are still partly visible underneath the large, rough cuttings of the later period (Pl. 39:c).

Friezes of Contemporary Attic Temples

Because the frieze of the Temple of Nemesis is so well preserved, its design and construction offer particularly interesting points of comparison with friezes of contemporary

⁷⁶ There is further evidence that the single metope was used only in the later period: there is no pry hole for the northeast corner block of the frieze on E1, although there is one on E3 for the northwest corner. This suggests that the northeast corner block was lifted into place with tongs, as was the southwest corner block. The adjacent block on the east, restored here as MTM, was probably already in place.

⁷⁷ Gandy shows the frieze backers crowned with the moldings which belong to the epikranitis (pl. 5).

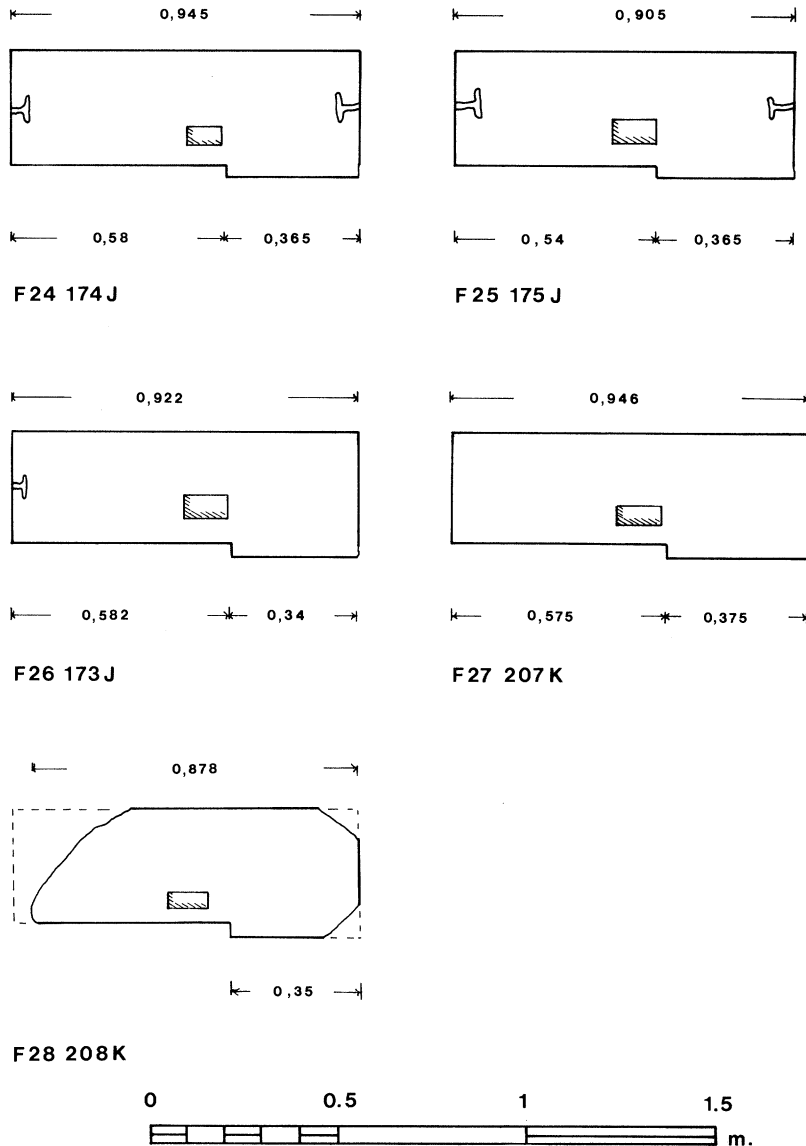
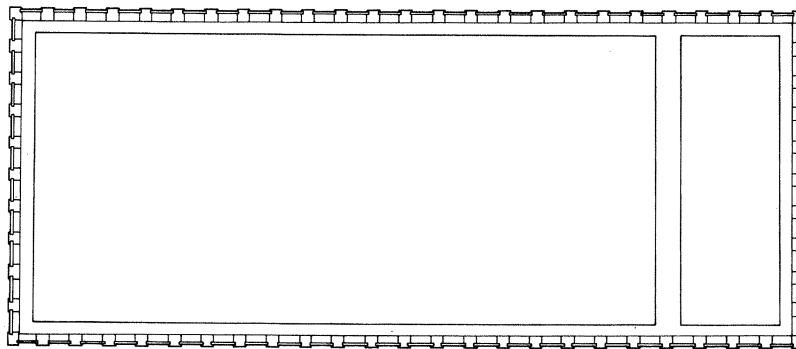


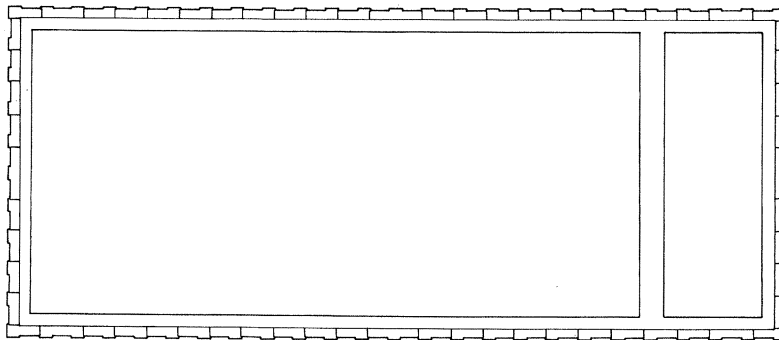
FIG. 19. Replacement frieze blocks F24-F28

temples (Fig. 20). The triglyph-and-metope frieze is emblematic of the Doric order, and its design must have been of special concern to architects.

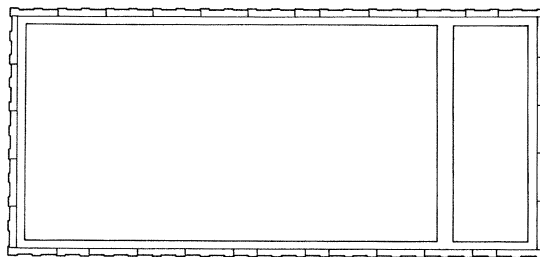
As noted above, the frieze course of temples with sculptured metopes in the Classical period typically consisted of individual triglyphs alternating with individual metopes, each carved on a thin slab and set into slots behind the outer edges of the triglyphs. Like the frieze of the Parthenon, the frieze of the east front of the Hephaisteion is composed of separate



HEPHAISTEION



TEMPLE OF POSEIDON



TEMPLE OF NEMESIS

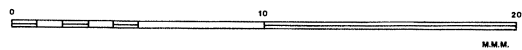


FIG. 20. Comparison of the frieze courses of the Hephaisteion, the Temple of Poseidon at Sounion, and the Temple of Nemesis

carved metope slabs inserted between triglyphs slotted to accommodate them. The same system is used, however, on the north, south, and west sides, even for all the plain metopes.⁷⁸ The height of the frieze is 0.828 m., the width of the triglyphs 0.519 m., and the width of the metopes 0.772 m.

Several triglyphs from the Temple of Ares are preserved.⁷⁹ Their sides are slotted to receive thin metope slabs, a design like that of the Parthenon and the Hephaisteion. The height of the triglyphs is 0.837–0.838 m., the width 0.554–0.555 m. Only fragments of metopes have been found: their original width is not certain, and it is not known whether some may have been carved.

On the Temple of Poseidon at Sounion, the height of the frieze course is 0.829 m. Most of the frieze blocks were 1.276 m. long, with two units (MT or TM; Pl. 39:d); the longest blocks were 1.787 m. long, with three units (MTM or TMT). There were no single metopes or blocks of four units. The triglyphs are 0.521 m. wide and the metopes 0.737 m. (the actual width is 0.755 m., but 0.019 m. would have been concealed by the overlapping edge of the triglyph on the next block). Because of the larger size of the metopes and triglyphs, the use of only two lengths of blocks, and the even number of intervals on the temple (with 6×13 columns rather than 6×12 as at Rhamnous), the system of jointing in the frieze of the Temple of Poseidon was much simpler than in the Temple of Nemesis.

Although the frieze course of the Temple of Poseidon is not so well preserved as that of the Temple of Nemesis (only fifteen blocks of the original sixty-four are on the site today), nevertheless it is possible to reconstruct the arrangement of the course and the system of jointing, and to assign the surviving blocks to an approximate position within their proper sides. Suggestions for the arrangement of the blocks proposed by Orlandos and Plommer did not consider all blocks on the site and were made without a correct understanding of the geison course.⁸⁰ A new reconstruction of the frieze course is possible now because of a thorough study of the geison course by W. B. Dinsmoor, Jr.⁸¹ See Appendix II, pp. 247–249 below.

The frieze of the Temple of Poseidon has a fairly simple and logical design, made easier in the planning by the even number of intercolumniations. The actual fitting and construction of the blocks was done in a somewhat more complicated way than in the Temple of Nemesis, however, as two additional types of cuttings were used, the square holes for lifting and the dowel holes for fastening the blocks to the epistyle course below (cuttings 3 and 4, Appendix II, p. 247 below).

In these four temples, then, what appears to be a “standard” Doric frieze may be constructed in quite different ways. The usual method, with single metopes between single triglyphs, was advantageous for sculptured metopes but was also used for uncarved ones.

⁷⁸ Koch, pp. 53–54; I was able to confirm this observation by inspecting the joints of each metope and triglyph of the exterior frieze.

⁷⁹ Dinsmoor, “Ares,” pp. 27–28; McAllister, pp. 20–21.

⁸⁰ A. Orlandos, «Τοῦ ἐν Σουνίῳ ναοῦ τοῦ Ποσειδῶνος τοῖχοι καὶ ὀροφή», Ἄρχ' Ἐφ 1917 (pp. 213–226), pp. 224–226; Plommer, pp. 83–85.

⁸¹ Dinsmoor, Jr., “Poseidon,” pp. 211–238.

The methods used in the Temples of Poseidon and Nemesis, groups of triglyphs and metopes together on blocks, reduced the number of joins and clamps, eliminated the need for an intermediate backer for each metope, and would have required less labor and time in carving and construction. The design of the frieze in the Temple of Nemesis is more intricate than that in the Temple of Poseidon, and there are the technical differences noted above as well, but the concept of multiple units is similar. When we contrast the design of the frieze in the Hephaisteion and the Temple of Ares with that used in the Temple of Poseidon, the difference cannot be attributed to a difference in scale; possibly the quantity or quality of marble was a consideration, but very likely the distinctive systems of jointing indicate that they were designed by different architects.

GEISON

No study or reconstruction of the geison of the Temple of Nemesis has yet been made, although sections of the flank geison have been published by Gandy, Orlandos, Shoe, and Hodge.⁸² Gandy's observations are of special interest, since the geison is still well preserved today and the accuracy of his measurements and drawings may be tested.

Gandy published measurements and sections of typical blocks and a partial drawing of the top of the geison. His measurements are generally accurate. His sections of the flank do have two differences from the actual blocks: he shows the top surface at the front of the block as perfectly horizontal and parallel with the bottom resting surface, and he omits the second bottom dowel which attached the block to the backer of the frieze course (pl. 5). His section of the horizontal and raking geisa for the fronts is accurate (pl. 7).

Gandy's plate 10 shows the roof tiles, the epistylon (AA), ceiling beams (BB), and a quarter (the northeast corner?) of the geison course. His drawing was probably only intended to indicate the appearance and fastening of the blocks in general. It is misleading to the reader, however, because he has drawn the corner geison block as rectangular in shape, with an added via and mutule on the flank side; the subsequent divisions of the blocks on the flank, and the placement of the dowel holes for the sima, are inaccurate. The configuration of the top surface of the corner block and of the adjacent blocks on the front horizontal geison is also inaccurate. The drawing has been made neater and more regular by extending the forward edge of the rafter support on the flank blocks to the corner and horizontal blocks. On plate 11, an elevation of the side of the temple, the joint between the corner and flank blocks is shown correctly, with the corner block square.

Like Stuart and Revett, the pioneers of architectural study, Gandy was careful and accurate in his measurements of the geison. His final drawings, probably made in London,

⁸² Gandy, pl. 5; Orlandos, "Note," p. 313; Shoe, pl. LXXVII; Hodge, *WGR*, pp. 112–115, fig. 23:f. Orlandos' section of the flank geison (fig. 5:a) incorrectly shows the top front surface of the block as horizontal and parallel to the soffit (in this he follows Gandy as do Shoe and Hodge). His section of a corner block (fig. 8), apparently the southeast corner, is inaccurate in the length of the raised support for the sima, represented as approximately 0.40 m. long, whereas the block on the site today measures 0.157 m., with 0.045 m. to be restored over the hawksbeak molding. The ledge of the southwest corner block (which has a different section) is 0.435 m. long, and so perhaps he conflated the two designs. Hodge has made several helpful observations about the rafters, which will be discussed below.

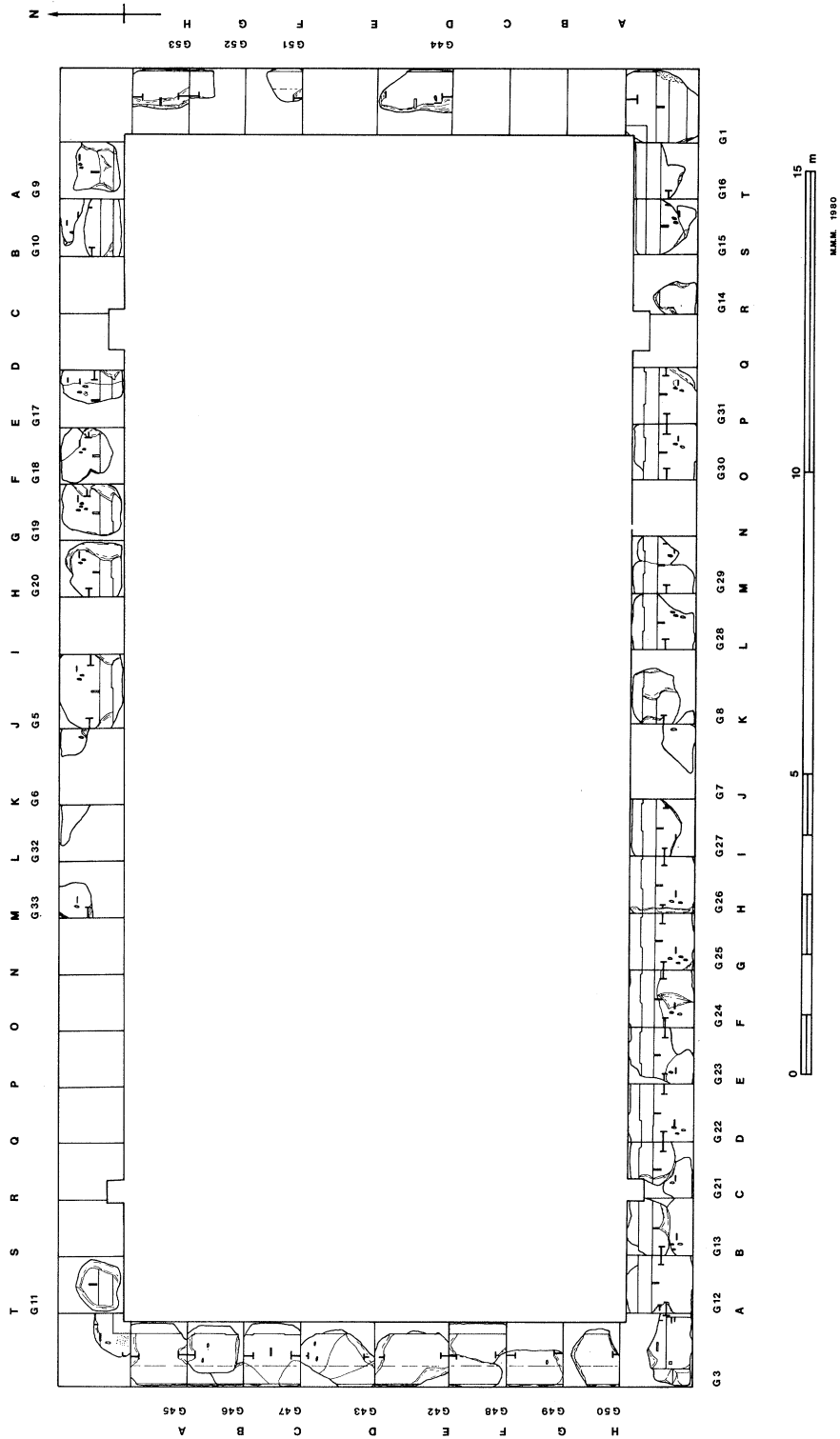


Fig. 21. Reconstructed plan of the geison

do have errors in them, but these may have been intentional changes made for the sake of neater draftsmanship.

The geison and the frieze of the Temple of Nemesis are the best preserved courses of the superstructure. Just as it is possible to reconstruct the original position of most blocks of the frieze, so too the blocks of the geison may be put back together (Fig. 21). Originally the course consisted of four corner blocks, twenty intermediate blocks on each flank, and eight intermediate blocks on each end. Of those original sixty blocks there remain forty-three and sixteen fragments. Five blocks and four fragments are left from the Roman replacement of the east geison. The geison blocks were found scattered around the temple, many of them not far from the side to which they belong. By analyzing the distinctive cuttings on the blocks and the order of the mutules and viae, it is possible to determine the original position of most blocks within the course.

Except for the corner blocks and center blocks whose dimensions are peculiar to their position, the blocks of the geison have lengths of 0.930 to 0.957 m. The designed length was probably *ca.* 0.949 m. The blocks have two mutules (each *ca.* 0.377 m.) and two viae (each *ca.* 0.094 m.) on the overhang.

Each block covered the full width of the frieze and its backer, and the vertical back of the blocks is crowned by a hawksbeak molding 0.046 m. high, which should have matched the one for the epikranitis of the cella wall, no longer preserved, facing at the same height. Immediately above the hawksbeak, the ceiling beams of the peristyle rested on a ledge cut into the back of the geison block.

The Corner Blocks

The corner blocks measure 1.212 m. square on average and have two mutules and a via on each projecting side, with a via 0.282 m. square between them on the corner. On the back of the blocks a square ledge is cut to receive the end of a ceiling beam, and below it in a re-entrant angle was a hawksbeak molding, which continued on adjacent blocks. These features are shared by three of the four preserved blocks and should be restored on the fourth (G3).

The top surface of the corner blocks was cut in two different ways, one used on the east end and the other on the west. They differ in the form of the support for the corner block of the tympanon and the raking geison. The southeast corner block, G1, found near the southeast corner of the temple, supported the corner sima on an inclined ledge 0.262 m. wide, which extends the full length of the block on the flank side (Fig. 21). Behind this ledge, the top of the geison block is flat for 0.314 m., then inclines upward (0.047 m. over 0.208 m.). The end of the raking geison rested on the flat and inclined areas behind the corner sima. The corner block of the tympanon was laid on the flat top (the northern part) of the geison block, underneath the raking geison.

In addition to a lewis hole, G1 has a cutting for a T-clamp on the end that adjoins the front horizontal geison. G1 lacks a T-clamp cutting on its flank side, probably because of the inclined support for the raking geison, which raised the height of the block above its neighbor at the place where the clamps were usually set. A square dowel was probably used to set the corner sima block (as on G3), but the outer corner of G1 is broken off, and the cutting is not

preserved. G1 joins 120D, a small piece preserving the front corner of a corner geison block, but the cutting for a dowel for the corner sima is not preserved on it either. On the top surface along the front (east side) of G1 is a roughly chiseled area (Pl. 41:b), evidence of repair work, probably in the Roman period. Three dowels are preserved on the soffit of G1, with a fourth to be restored; these dowels attached the block to the frieze and its backer.

A corner block for the northeast corner, G2, was made according to the same design as G1, but it was not finished and probably was not used. It was found below the terrace wall, northeast of the temple. Its top was left roughly picked, and the surface above the nosing of the front hawksbeak molding was never worked down (Pl. 40:b). There is no cutting for a T-clamp to the front horizontal geison. Iron remains in the lewis hole, which suggests either that it was re-used as a dowel hole or that when some attempt to lift the block was made, the device was left in the hole. The recessed ledge for the ceiling beam was left with a very rough surface which could not have been intended to receive a polished marble ceiling beam (Pl. 40:c). The bottom surface of the block was finished in every detail, except that there are no dowels for attachment to the course below. Dinsmoor calls this block a “*membrum rejec-tum*”.⁸³ Perhaps the block was broken in the process of lifting it onto the temple. No identifiable fragment of a second northeast corner block is on the site today.

The southwest corner, G3, was found near a cistern beyond the northwest corner of the temple, an area to which many blocks have been moved. (See pp. 176–177 above.) Its top surface differs from that of G1 in that the inclined ledge for the support of the sima, except at the corner, is much wider, 0.40 m. This ledge has a square, blind dowel hole to accommodate the dowel for the corner sima, and two lateral dowels for the adjoining flank sima.⁸⁴ At the corner the sloping ledge is only 0.257 m. wide, which leaves a recessed area 0.254 m. deep on the front to receive the raking geison (Fig. 22, Pl. 41:a). The tympanon blocks were laid behind it, which leaves a pediment floor *ca.* 0.30 m. wide. A lewis hole of the usual shape is in the center of the block. On the side adjoining the flank geison, the block has a narrow lip projecting 0.006 m. beyond the anathyrosis; this served to make up a slight discrepancy in block sizes.⁸⁵ Since the back and sides of the block are broken off, no dowel holes on the soffit are preserved. The mutules have very deeply incised guidelines used in carving the guttae (Pl. 33:a).

The northwest corner block, G4, was found in the area southwest of the temple (Pl. 40:d). Only the back corner of the block is preserved, but enough remains to indicate that its shape was similar to G3 rather than to G1, since it lacks the inclined surface to accommodate the raking geison found on G1. G4 has a dowel hole and a pry hole, used for the first block of the raking geison.

⁸³ Dinsmoor, “*Fantasies*,” p. 203.

⁸⁴ For the blind dowel hole, see below, pp. 203, 210 and footnote 102.

⁸⁵ Including this lip the block may be restored to 1.214 m. on its flank side, exactly the length on the flank of G1. Only the hawksbeak moldings on both blocks are partly missing, but the depth of the hawksbeak (0.043 m.) is well attested on many other blocks.

The Flanks

On the top surface, just behind the ledge which supported the ceiling beams, all flank geison blocks have a raised strip which supported the rafter plate (Fig. 24). These strips are roughly cut and vary in height and width; slots for the ceiling beams are cut in the inside face. From the raised strip to the front hawkbeak, the top surface of the block is flat and smoothed and has a downward inclination of 0.025 m. toward the front; most of the inclination for the roof is taken up in the bottom sima block. The flank blocks all have a lewis hole, narrow and rectangular with one sloping side, in the center of the top surface (Pl. 42:a).

The two center blocks on each flank geison have an extra via and a half-mutule in addition to the usual two mutules and two viae. The two half-mutules meet over the exact center of the sides. Since the corner blocks all end with a mutule, intermediate flank blocks which end with a via on the right belong right of center, and those with a via on the left belong left of center. The blocks with half-mutules must necessarily join in the center of the geison course because they end with a via on the side opposite the half-mutule (this is fully preserved only on one block, G5, but it is sufficient to establish the pattern, which is then consistent with all the other blocks). The twenty intermediate positions of blocks on the flanks are lettered here from A to T on each side (Fig. 21).

In addition to the arrangement of the mutules and viae on the blocks, there are several cuttings which help determine their original positions within each side: 1) T-clamp cuttings on the ends for attachment to adjacent blocks (these should match within 0.005 m.); 2) vertical rectangular dowel and pry holes on the top for anchoring the sima blocks. The dowels are located at even units of *ca.* 0.945 m. (the length of the sima blocks), and the pry holes indicate the direction of laying of the sima; 3) shallow slots on the back of the rafter support above the beam ledge, which accommodated the ends of the ceiling beams. Because the ceiling beams change direction at the porches, and because of the unequal depth of the east and west porches, the cuttings for beams along the flanks are a useful and accurate indication of placement within the three sections of the flanks (east or west end, or opposite the cella wall); 4) vertical rectangular dowels at the bottom, usually in pairs on one end, for attachment to the frieze course and its backers. These indicate the direction of laying of the geison.

Accordingly, six criteria must be considered simultaneously while deciding where to place an individual block within the reconstruction of the geison, and all six should be satisfied: 1) whether the block ends with a via on its right or left side and belongs either right or left of center; 2) whether the block was doweled into the frieze course below it on its right or left side and was set from the right or the left; 3 and 4) whether the cuttings for T-clamps on the right and left sides of its top surface align with the T-clamp cuttings on the blocks on either side of the proposed position; 5) whether the dowel hole and pry holes on the top surface of the block for the sima course above it are consistent with the jointing of the sima and its direction of laying on that flank (right to left or left to right); and finally, 6) whether the slots for the ceiling beams on the back ledge of the block are appropriately spaced for its proposed position. Not all this information is preserved on every block, however, and eleven

of the forty flank blocks are missing, which necessarily introduces an element of uncertainty into the reconstruction.

An additional factor in the reconstruction is the accommodation of the epikranitis course continued as a beam across the pteromata from above the antae of the pronaos and opisthodomos and set into the backs of the geison blocks opposite the antae.⁸⁶ Because of the length of the geison blocks chosen by the architect (with two mutules and two viae per standard block, *ca.* 0.949 m.), the rectangular recessed area which received the crossbeam would have been cut across two contiguous blocks in each instance, so eight blocks in all would have had this special cutting, peculiar to positions C, D, R, and S on the north flank, and positions B, C, Q, and R on the south flank (Fig. 21).

The slots for the ceiling beams cut into the backs of the blocks are especially valuable evidence for the reconstruction of the geison. During the original construction of the temple, the spacing of the slots for the ceiling beams was determined by two factors: the ground plan of the temple and the width of the beams and ceiling coffers chosen by the architect (beams and coffers are preserved and are discussed below, pp. 218–221). The east porch of the temple is deeper than the west porch, and so three geison blocks on the north and south flanks were required to cover its depth, while on the west end only two were needed. Hence, blocks in positions A, B, and C on the north flank, and R, S, and T on the south flank, should have had no cuttings for ceiling beams (since the beams of the porch ran parallel to the long axis of the temple, Fig. 24), and, at the west end, blocks in positions S and T on the north, and A and B on the south, also should have had no cuttings for beams, since there too the beams ran parallel to the long axis of the temple.

Blocks from the flank geison with the slots cut into them, then, should fit positions D through R on the north side, and positions C through Q on the south flank. Yet the center of the temple is the same on both flanks and was filled on both flanks by blocks in positions J and K. On the north flank, the space left (east) of center between position D (where the ceiling beams change direction, now perpendicular to the long axis of the temple) and position J was occupied by five blocks, whereas on the south flank, the space left (west) of center was occupied by six blocks, between positions C (where the beams changed direction) and J. The space right (west) of center on the north flank between positions K and R was occupied by six blocks, but on the south flank, five blocks filled the space right (east) of center, between positions K and Q. Therefore we should expect the spacing of slots for the ceiling beams to differ on individual blocks in diagonally opposite positions on the temple, while blocks directly opposite each other should have slots for beams in mirror image (Fig. 21). The overall spacing for the beams on all sides of the temple would then have been precisely symmetrical.

⁸⁶ The crossbeam was necessary for the support of the two outermost ceiling beams above each side of the end porches, where the beams were parallel to the long axis of the temple, and it provided the transition for the change of direction of the beams above the flank pteromata, which were perpendicular to the cella wall. I have assumed here that the crossbeam on the east was wider than on the west, so as to cover the frieze and its backer (as a frieze crown), which were very likely also carried across to the colonnade (for discussion of this point, see pp. 164–165 above).

The four center blocks of the flank geisa are G5, G6, G7, and G8. G5 must fit position J of the north flank, because the slots for the ceiling beams will only fit with the spacing of the ceiling beams of the north pteroma, and the sima was pried from the right, as on other blocks on this side. G5 was found north of the center of the north side. G6 adjoined G5 in position K on the right. Although only the front left corner is preserved, the half-mutule is on the left side, and the top surface has a pry hole to the right of a broken area *ca.* 0.094 m. from the left edge, where probably there was a dowel hole for the sima, pried from the right. The other possibility for this position is G8, also with a half-mutule on the left; but the spacing of the slots for ceiling beams on G8 indicate that it belongs on the south side, in position K. G7 fits position J on the south; only the front right corner is preserved, but the top surface has a pry hole near the edge of the block, prying from the left to a dowel on K (now broken off); the direction of laying of the sima was from left to right on the south flank.

South Flank

With the corner blocks and the center blocks at J and K fixed in position, there remain eighteen positions for the blocks of the south flank (Fig. 22). Five of them, A, B, R, S, and T, require blocks without slots for beam ends, since they are over the east and west pteromata, where the ceiling beams ran parallel to them. Four of the blocks, in positions B, C, Q, and R, should be cut to accommodate the crossbeams carried across from the antae of the pronaos and opisthodomos.

G12, which belongs left of center, has no slots for ceiling beams (Pl. 42:b). The T-clamp cutting on the left end matches the cutting on the southwest corner block G3. It also lacks a dowel and pry holes for the sima, which can be expected on a block adjacent to the corner. G12 fits position A.

G13, in position B, has a cutting in the back right corner to receive the crossbeam from the anta of the opisthodomos. There are no slots for ceiling beams, and the T-clamp cutting on the left end matches the cutting on the right end of G12. Furthermore, G13 cannot fit position C of the north flank (the only other possible position) because the distance between the cutting on the back and the horizontal geison fits only on the south side; the distance from the west end is fixed by the placement of the cutting for the crossbeam and is shorter than the distance between the pronaos and the east end. Also, the pry holes show that the sima was pried from the left, appropriate to the south flank.

G21, in position C, has a cutting on the back left corner to receive the crossbeam and part of a slot for a ceiling beam on the right side of the back ledge. Although neither the left T-clamp cutting on G21 nor the right one on G13 is preserved, the blocks share the cuttings for the crossbeam and so must be adjacent. G21 cannot fit position D of the north flank, the only alternative position, because the cutting for the epikranitis and the spacing of the ceiling beam slot fit only on the south side.

G22, G23, G24, G25, G26, and G27 fit positions D through I, respectively. All have cuttings for T-clamps preserved on both ends which match those of their neighbors. Most of the blocks now lie closest to the southwest side, and the placement of these blocks on the southwest, rather than the northeast, is certain. The T-clamp cuttings on G21 and G22

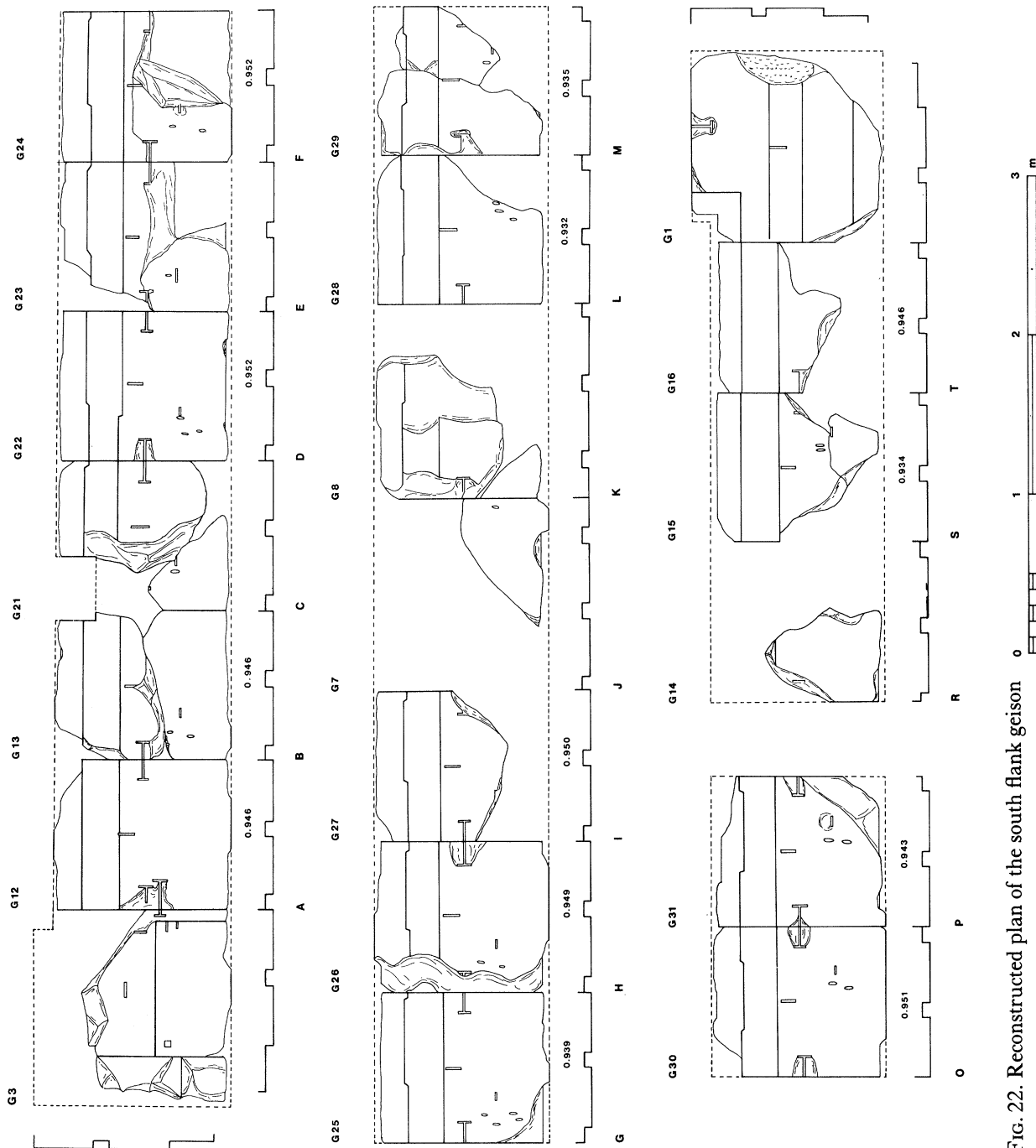


FIG. 22. Reconstructed plan of the south flank geison

match, which places the blocks on this side, and the prying of the sima is from the left rather than from the right as on the northeast.⁸⁷ Furthermore, the series of six blocks is too long for the northeast section because on the north flank the greater depth of the east porch shortens the distance between the center blocks (in positions J and K) and the epikranitis course extended as a crossbeam from the north anta and set into blocks in positions C and D.

This linked series of blocks provides evidence for the distribution of the ceiling-beam slots and the spacing of the beams: 0.960 m. from center to center, with an average interval of 0.599 m. between beams. The spacing of the dowels for the sima is usually *ca.* 0.94 m., with slight variation. The last laid undoweled sima block on the south flank was set over geison blocks in positions E and F; the block adjacent to it on the west, over blocks in positions D and E, was doweled on both sides.

Over the south side of the east pteroma were blocks in positions R, S, and T. The blocks in positions R and Q ought to have had cuttings on the left and right back corners for the crossbeam or crown course above the frieze, which was probably extended over the pteroma from the south anta of the pronaos. No identifiable piece of the block for position Q survives. G14, whose back is entirely broken off, has a half-via on the left side, a very unusual configuration and unique among preserved blocks of this temple. Enough of the top surface is preserved to indicate that the sima was doweled on the right side of the block, so that G14 must belong either to the southeast or northwest section. G14 was found lying near the southeast corner of the temple, as were all the blocks from the southeast section. The dowel hole on its left end matches exactly the one in the frieze block below it, F22. Only a block with the half-via could have been doweled into the preserved dowel hole in the frieze block (see p. 178 above). Although G14 is broken off at the back, and therefore no cutting for the extended epikranitis (frieze crown) is preserved, it fits position R. The extra length (0.052 m.) in the half-via can best be explained by the position adjacent to Q; these two blocks were probably modified because of their position opposite the south anta of the pronaos.

G15 and G16 lack slots for ceiling beams and therefore belong over the east pteroma. G15 has part of a T-clamp cutting preserved on its right end and so cannot fit position T, adjacent to the corner block, which has no cutting for a T-clamp on its left end. The T-clamp cutting on G15 does match one on the left side of G16, and so G15 must fit position S and G16, position T. The dowel holes and pry holes for the sima preserved on the top surface of G15 are consistent with the spacing of the sima and the direction of laying (from the left) on the south flank.

This leaves five positions right of center in the southeast section, L through P, and there are four blocks preserved with the proper sequence of mutules and viae, G28, G29, G30, and G31. All four blocks were found near the south side of the temple, at its east end. G30 fits next to G31 on the evidence of the T-clamps. On G31 the slot for the ceiling beam is cut slightly wider than usual; this adjustment may be explained if G31 fits position P, adjacent

⁸⁷ Blocks G22 and G25, in positions D and H, and G24, in position F, were found lying north of the northeast side of the temple. Two blocks from the southwest part of the frieze course below them, F19 and F20, also lay in that area (see pp. 176–177 above).

to Q, which was modified to receive the crossbeam from the south anta. (The wider slot would have provided greater maneuvering space for the positioning of the beam adjacent to the filler panel above the epikranitis course; a half-coffer would have bridged the space between them.) Hence G30 probably fits position O and G31, position P. G29 cannot join G30 in position O because of the differences in the cuttings for the T-clamps but fits either position L or M. G28 could fit position L, M, or N; the right end is broken and the T-clamp cutting is missing. The T-clamp cutting on the left end of G29, however, does not match the cutting on the right end of G28, and so G28 must be placed to the left of G29. Since G29 cannot fit position N, the only two possible positions for the blocks are L (G28) and M (G29), and position N is left unoccupied by a preserved block. The spacing of the dowel holes for the sima and its direction of laying are quite regular on all four blocks.

On the south flank existing blocks have been assigned to all positions except two, N and Q. Assuming that the block in position N had the average width of 0.9485 m., and the block in position Q was narrower by one half-via ($0.9485 - 0.042 = 0.9065$ [0.907] m.), then the total length of the geison course on the south side was *ca.* 21.96 m.

North Flank

All blocks which can be assigned to the north flank were found lying on the north side of the temple. This side has suffered the worst destruction of the four, and from every level of its superstructure the blocks are poorly preserved. The north flank is the most exposed to the harsh winds and rain which drive in from the sea, and the badly weathered condition of its blocks and fragments bears witness to the force of the elements.

The center blocks are in part preserved, with G5 in position J and G6 (a fragment) in position K (see p. 191 above). There are three blocks, G9, G10, and G11, which are well enough preserved to indicate that they have no slots for ceiling beams on their backs. These belong to the east and west pteromata, where the ceiling beams ran parallel to them. G9 and G10 both have a via on the left, and so they belong over the east pteroma. G10 has part of a cutting for a T-clamp on the right; if we may assume that the northeast corner block was similar to that at the southeast corner in that it was not clamped on the flank side, then G10 cannot fit position A. G10 is preserved to its full length of 0.943 m. It has no cuttings on the back right corner or any special alterations necessary for the block in position C which, with the block at D, accommodated the frieze crown brought over from the north anta. G10 most likely fits position B.

G9 is very badly weathered on all sides. It is impossible to tell whether there was a T-clamp cutting on the right. The back right corner and the right side are broken off, and so we cannot know whether there was a cutting to accommodate the frieze-crown blocks. The fact that the lewis hole is slightly left of center suggests a restoration of normal length (*ca.* 0.94 m.) rather than an extra long length with an additional half-via, as on the south flank (G14). For this reason G9 more likely fits position A than C.

Although G11 is broken all around, enough of the back ledge is preserved to show that there were no slots for ceiling beams. The block ends in a via on the right, and so it must belong to the west pteroma, in position S or T. Since the back left corner is broken off it is

impossible to know whether there was a cutting for the crossbeam carried over from the northwest anta. The front overhang is also broken leaving no evidence for the *sima*, which could have indicated whether the block was adjacent to the corner. Here G11 is arbitrarily assigned to position T, closest to the well-preserved west end.

There are four blocks with *viae* on the left side, which fit the intermediate positions D through I. Two of them, G17 and G18, are not well enough preserved at the back beam ledge to determine whether they had slots for ceiling beams. Both have cuttings for T-clamps on the left side. Neither block matches G10, in position B, and so neither could fit position C. G17 has no special cutting on the left back, which would be necessary for position D. Although its back left corner is not preserved, G18 has a normal length and distribution of *viae* and *mutules* and therefore is unlikely to fit position D, which may have been short by a half-*via*, as was block Q on the south flank (p. 193 above).

Blocks G17 and G18, as well as G19 and G20, which have slots for ceiling beams, must fit into positions E through I. Of these only G20 has a cutting for a T-clamp preserved on the right end. This cutting does not match those on the left ends of G17, G18, G19, or G5 (in position J). G20 must be on the left of the missing block in the sequence E through I; therefore E cannot be the unfilled position, and G20 could be in position E, F, G, or H. Some additional evidence may be found in the sequence of dowel holes for the *sima*. It is likely that G18 was to the right of G17, because the dowel for the *sima* was cut on G17 closer than usual to the left end (0.179 m.), and an unused, shallow dowel hole (with no adjacent pry holes) toward the front of the block was cut even closer to the left end (0.144 m.), while the dowel hole for the *sima* on G18 is a bit further than usual from the left end (0.206 m.). The slightly long *sima* block (0.955 m.) that would have rested on G17 and G18 would then be followed to the right by a slightly short (0.93 m.) *sima* block over G18 and G19. The length of the next *sima* block, over G19 and G20, would be the usual 0.94 m.

Only two fragments are preserved of the intermediate blocks to the west of center, L through S. Blocks G32 and G33 had *viae* on the right and dowel holes for the *sima* blocks on the right end. No other evidence for their positions is preserved. Here they are arbitrarily assigned to positions L and M, closest to the better preserved eastern section of the flank.

The Horizontal Geison of the Façades

All the horizontal geison blocks of the west end are preserved and were found lying along the west side of the temple. Only a few original blocks of the east end are left; most of these were near the north side, but a few fragments were widely scattered. The replacement blocks of the Roman period also lay along the north side of the temple.

The front horizontal geison blocks have an average length of 0.938 m., with two *mutules* and two *viae* on the overhang. As on the flanks, the center blocks are increased by the width of one *via* and one half-*mutule*, to an average total length of 1.217 m. Blocks with a *via* on the left side belong left of center, and those with a *via* on the right belong right of center.

The horizontal geison has a flat top surface which supported the tympanon blocks and their backers and formed the floor of the pediment (Pl. 42:c). A weathering line, observable on most of the blocks, indicates the edge of the tympanon, 0.299–0.304 m. from the front of the

block. The front horizontal geison blocks are 0.0375 m. higher than those on the flanks; the added height may have been intended to strengthen the floor of the pediment to carry statuary. The higher part of the block is behind a small ledge above the nosing of the front hawksbeak molding, 0.0375 m. high and 0.045 m. deep; the nosing is inclined slightly forward.

On the back of the blocks is a ledge for the support of the ceiling beams. Only two geison blocks, G46 and G47, have shallow vertical beam slots at the back of the ledge. The same hawksbeak molding as on the back of the flank geison is carried across the back of the front horizontal geison. On the top surface of the blocks are cuttings for T-clamps, and on the undersurface are dowel holes for attachment to the frieze. Some blocks show pry holes used to set the blocks of the tympanon; one (G44) has a dowel hole for the attachment of the central block of the tympanon.

West Front

All blocks of the west horizontal geison lie west of the temple (Fig. 23). There is no evidence of repairs or replacements of the Roman period on this end.

The center blocks have the same arrangement of mutules and viae as the center blocks on the flanks: each has an extra via and half-mutule. G43, with an extra via and half-mutule on the right, fits position D. G42 ends in a half-mutule on the left and fits position E. The T-clamp cuttings on the right end of G43 (in position D) and on the left end of G42 (in position E) are well preserved and perfectly aligned. Pry holes on the top surface of G43 were used to shift the central blocks of the tympanon into place, from the north. The outer central block of the tympanon (P5 161E) is preserved in its full length of 1.877 m. When restored to its position, the northern edge of the tympanon block and the pry holes on the geison are aligned.

With the central blocks D and E in position, there remain three available positions to either side of the center. Blocks G48, G49, and G50 all end in a via on the right, and belong right of the center. G48 has a cutting for a T-clamp on the left end which matches that on the right of G42, the center block in position E; G48 fits position F.

Since a T-clamp cutting on the left end of G49 matches that on the right end of G48, G49 fits position G. There is also a pry hole on the top surface of G49, 0.236 m. from the right edge, used to shift the block of the tympanon adjacent to the central block. The distance between this pry hole and the south edge of the central tympanon block corresponds with the length of the tympanon block which should have rested there, 1.884 m., the same length as P1, assigned to the east front, and P2, its mirror image on the west front (Fig. 25). G50 is broken on the left side, and the cutting for a T-clamp is not preserved, but G50 must belong in position H, since that is the only one available for it.

G45, G46, and G47 all end in a via on the left side and belong left of the center blocks. G45 has a T-clamp cutting on its left end which matches that on the right end of the north-west corner block G4, and so G45 fits position A. The T-clamp cutting on the right end of G45 matches that on the left of G46. G46 also has two pry holes for shifting the tympanon blocks adjacent to the central blocks on the north side. These pry holes were cut at a distance

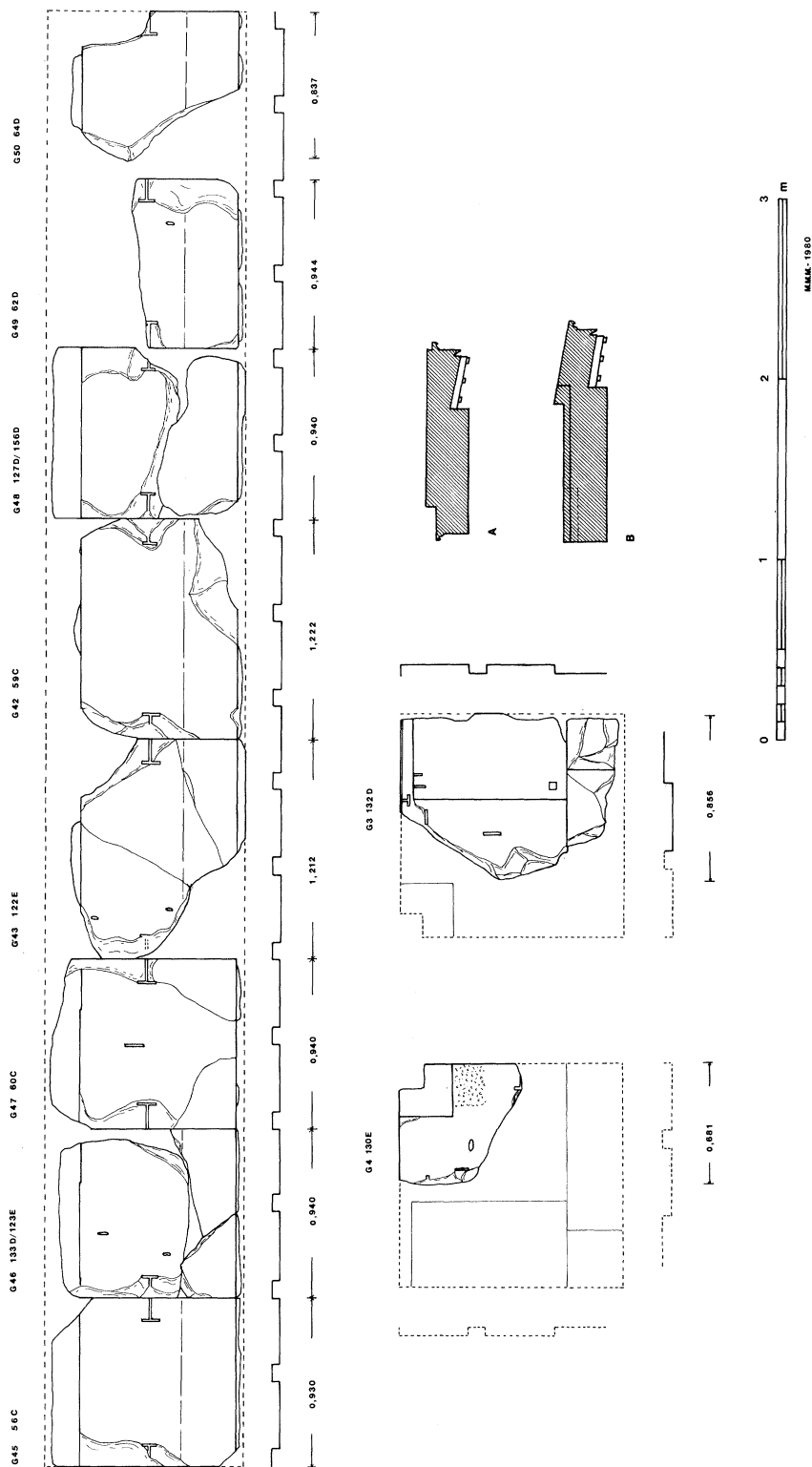


Fig. 23. Reconstructed plan of the west front horizontal geison.

A) Restored section through G45

B) Restored section through flank side of G3

from the central block roughly equivalent to the length of the preserved tympanon block P2, 1.884 m. G46 fits position B.

A T-clamp cutting on the right end of G47 matches that on the left side of G43, the center block in position D; G47 fits position C. Both G46 and G47 have slots for ceiling beams on the vertical face of the ledge which supported them, although no other blocks from the horizontal geison of the west or east ends have these slots. Presumably three ceiling beams of the west porch must have been cut slightly longer than necessary, so that this adjustment had to be made.

East Front

The original east horizontal geison of the Greek period was replaced in Roman times. Only a few fragments of the original blocks are preserved, most of which now lie east and northeast of the temple, although one was found on a high ridge outside the sanctuary approximately 100 m. to the west.

One center block remains, G44, found lying east of the temple, partly on the foundations of the altar. G44 has an extra via and half-mutule on the right side in addition to the usual two viae and two mutules; it belongs in position D as the southern central block. It has two dowel cuttings and one pry hole on the top surface. Only the second, deeper dowel hole (further from the left end) has pry holes adjacent to it and was actually used for the central block of the tympanon. The placement of this dowel hole aligns correctly with the restored length of the central tympanon block. (Both the central block of the tympanon and those adjacent to it were doweled to the geison blocks, unlike the tympanon at the west end, where no dowels were used.) One of the tympanon blocks (P1) immediately to the right (north) of the center block was found lying near the west end of the temple; it has a dowel hole on its smaller, tapered end.

No remaining fragments can be assigned to the left (south) of G44.

One block and two fragments with a via on the right belong right of center. The block G53 is preserved to its full length of 0.937 m. Since it has no dowel or pry holes on the top surface, it cannot belong in position G, where the block of the tympanon adjacent to the center would have had its northern edge. A fragment, G52, has a T-clamp cutting on the right end which exactly matches that on the left side of G53. Not enough of G52 is preserved to indicate whether it had an extra half-mutule and was the northern central block, or whether it had dowel and pry holes and belonged in position G. Only positions F and H can be eliminated, since G52 is at the left of G53. G52 and G53 could fit either positions E and F, or G and H. A third fragment, G51, preserves only the front left corner, with a T-clamp cutting on the left end, which does not match that on the right end of G53. Hence, if G52 and G53 were in positions E and F, then G51 fits position H, or if G52 and G53 were in positions G and H, then G51 fits position F (it cannot have been in position E because it has no half-mutule). Here the blocks have been assigned arbitrarily, G51 to position F, and G52 and G53 to G and H.

The two blocks from the east end which preserve much of their width (G44 and G53) have lewis cuttings in their top surfaces, of the same type and dimensions as those in the

flank blocks. The geison blocks of the west end have no lewis holes, except G47. Also, the cuttings for the T-clamps on the blocks from the east end are placed closer (by 0.05–0.07 m.) to the front of the block than are those at the west.

Two fragments, G59 and G57, may be assigned to the east end for the reason that there is no place for them at the west. G57 belongs south of the central blocks, since it ends in a mutule on the right. Nothing can be determined about the position of G59, which is a fragment of the back ledge for the support of the ceiling beams.

Repairs of Roman Date

There are five geison blocks and several fragments whose rough top surface and poor workmanship distinguish them from the other blocks discussed above. The tops of these blocks were left rough picked across the whole surface, including the nosing of the front hawksbeak molding. The ends of some have uneven and roughly chiseled cuttings for T-clamps. The lewis holes are large (e.g. 0.061×0.106 m.), deep rectangles, arranged in pairs across the length as on G61 or singly as on G60 and G63. None of the blocks survives in its full width; G60 and G63 may have had a second, inner lewis hole aligned with the ones preserved, which are centrally located lengthwise on the block (Pl. 42:d).

Since the backs of the blocks are gone, we can only assume that the arrangement for the support of the ceiling beams across the porch was similar to that of the original geison blocks.

The length of the blocks does not seem follow any discernible pattern of “units”. Two blocks, G60 and G61, end with a partial mutule on the left end. The placement of the lewis hole on G63 shows that the block must be restored to an unusual length of four mutules and four viae. It appears that these blocks were cut to fit whatever length was needed without regard to any unit.

Only two blocks, G60 and G64, and fragment G68 have cuttings for T-clamps on their well-preserved ends. It is possible that the workmen considered it unnecessary to clamp down every joint, because T-clamps were used erratically and infrequently. It is also possible that some of the original geison blocks (such as G44, in position D) were in good enough condition so that they were not replaced and that the replacements were put in next to them, unclamped. There is no evidence of any reworking of the T-clamp cuttings on the original blocks (as, for example, on frieze-backer block FB4, where the holes for the original T-clamps were re-cut). The rough-picked top surface of the replacements adds to their overall height.

Because of the irregular use of T-clamps and the lack of any standard unit of length, it is impossible to restore the replacement blocks to their original positions. The T-clamp cuttings on the blocks where preserved match neither those on other replacement blocks nor those on any of the original blocks.

The craftsmen who cut these blocks did not work with the same care and expert precision which is distinctive of the original blocks. The profile of the hawksbeak molding is only a crude imitation. The length of the mutules and viae varies up to several centimeters, even on the same block. On the soffit, both the visible and the resting surfaces were smoothed

with a claw chisel but not polished. These details indicate that the blocks were cut in the Roman period. The use of T-clamps, although sporadic, also suggests a Roman date.⁸⁸

Geisa of Contemporary Attic Temples

Studies by W. B. Dinsmoor, Jr. of the geisa of the Hephaisteion and the Temple of Poseidon at Sounion permit their comparison with that of the Temple of Nemesis.⁸⁹ The geison blocks of the three temples differ in overall dimensions, the arrangement of the center and corner blocks (where preserved), the treatment of the top surfaces, and general workmanship.

Since the Hephaisteion and the Temple of Poseidon are approximately the same size, with 6×13 columns, the overall dimensions of their geisa differ only slightly: 14.428 \times 32.490 m. (original) on the Hephaisteion, and 14.110 \times 31.764 m. (restored) on the Temple of Poseidon. The difference appears in the individual blocks: the normal flank block of the Hephaisteion varies in length between 1.287 and 1.296 m., with an average of 1.2918 m., while on the Temple of Poseidon, the lengths of the typical flank blocks vary from 1.259 to 1.268 m., presumably designed to be 1.261 m. On the Temple of Nemesis, with 6×12 columns, the overall dimensions of the geison are 10.266 \times 21.945 m. (restored), with individual blocks on the flanks varying from 0.93 to 0.958 m., with an average of 0.948 m.

A standard feature of the design of peripteral temples of this period is the alignment of the third column of the flanks from the east end with the antae of the pronaos combined with the extension of the frieze over the pronaos across the peristyle. On the west, the epikranitis over the frieze of the opisthodomos was continued across the peristyle as a beam. This arrangement facilitated a change of direction of the ceiling beams, so that on the flanks the beams were perpendicular to the long axis of the building, while over the porches the beams were parallel to it, with the shortest possible span. The designs of the individual blocks of the geisa of the Hephaisteion, Temple of Poseidon, and Temple of Nemesis all indicate this customary arrangement, with the back of the geison cut to accommodate the pronaos frieze crown on the east end and the crossbeam on the west.

On both the Temple of Poseidon and Temple of Nemesis (and also the Temple of Ares), the geison blocks are cut to the full width of the entablature, and the backs of the blocks have a ledge which supported the ceiling beams of the peristyle. On these three temples, the ledge was crowned by a hawkbeak molding which matched the epikranitis molding opposite them. In the Hephaisteion, the geison blocks do not extend to the full width of the entablature but are backed by separate blocks which support the ceiling beams.

On the Hephaisteion and the temples at Sounion and Rhamnous, the corner blocks are square (those of the Temple of Ares are not preserved), with two mutules on each outer side

⁸⁸ Several buildings in the Athenian Agora (e.g. the Odeion of Agrippa and the Temple of Ares), built or rebuilt in the Augustan period, had T-clamps in their foundations and superstructures in imitation of the techniques of the 5th century. For further discussion of the repairs of Roman date, see pp. 235–239 below.

⁸⁹ Dinsmoor, Jr., "Hephaisteion," pp. 223–246; *idem*, "Poseidon," pp. 211–238. The information and dimensions cited here for the geisa of these two temples are taken from these articles.

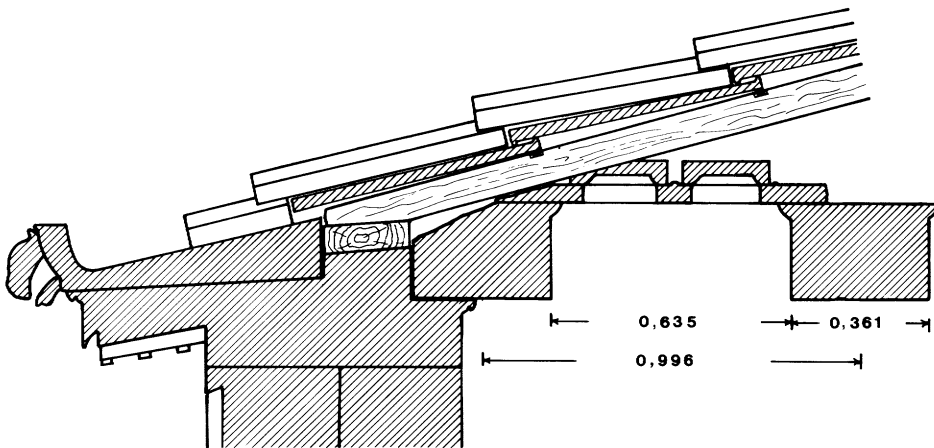
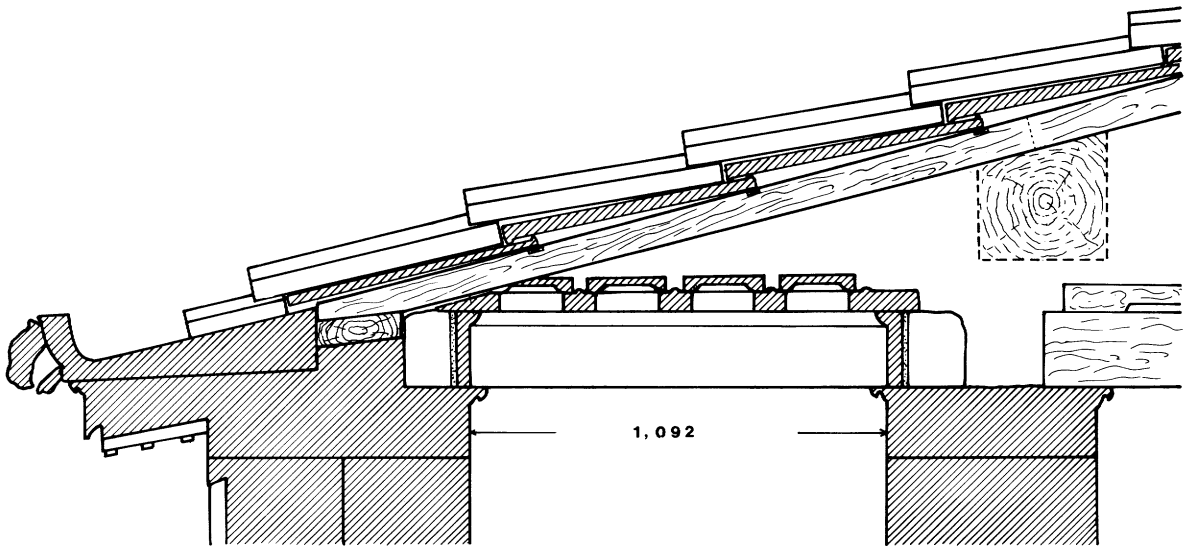
and viae between them, and the ordinary flank blocks have two mutules and two viae each.⁹⁰ Although the blocks at Sounion and of the Hephaisteion are similar in scale, the design for the central blocks on the flanks differs. In the Hephaisteion, the center of the flank is marked by the joint between two special blocks, each with an extra via and half-mutule. The two half-mutules together formed the central mutule of the side. This is the design also used at Rhamnous on the flanks and for the horizontal geison of the façades. At Sounion, a more elaborate system is used, with three special central blocks on each flank. The central mutule falls on a block with one mutule and two half-mutules (L), flanked by two shorter blocks with only one and one-half mutules (K and M). The difference would have affected the appearance of the roof, since on the Hephaisteion and the Temple of Nemesis the joint of the sima and the spacing of the cover and pan tiles had to be adjusted to cover the central joint. The differences between the Hephaisteion and the Temple of Poseidon may not be explained by a difference of scale, since they are so close in size.

The top surfaces of the flank geisa in these three temples are designed in different ways, with the result that the sima, rafters, and ceiling beams were supported differently in each. In the Hephaisteion, the top surface of the overhang of the geison is chamfered in order to set the sima on the proper slope. The sima is supported at the back by a long trapezoidal block, doweled on each end. The rafters abut against the trapezoidal block, which may have had sockets to accommodate them. The ceiling beams rested on a separate backer.

In the Temple of Poseidon, the top surface of the overhang of the geison, which supported the sima, was cut in two stages: first horizontally, and then chamfered. Behind the sima was a wedge-shaped backer about half the depth of the one used in the Hephaisteion. The rafters butted against it and also rested on the geison block itself, unlike the rafters of the Hephaisteion, which rested partly on backers and partly on ceiling beams (over the pteromata) or coffer grids. The rafters were thus somewhat longer in the Temple of Poseidon. The wedge-shaped sima backer was doweled at one end, and part of the slope was given by the top surface of the geison block, which is cut at an angle for that purpose. In contrast to the four different top surfaces on the geison of the Temple of Poseidon (two inclined and two horizontal), in the Hephaisteion the top of the geison is horizontal: the chamfered outer edge and the trapezoidal support for the sima provided the proper angle for the sima and roof tiles.

The top surface of the geison in the Temple of Nemesis declines slightly forward, but the slope of the roof is established chiefly by the sima, the back of which is cut in the necessary wedge shape. The configuration of this convenient sima block, which combines the functions of three separate blocks on the other temples, might have been prompted by the small scale of the Temple of Nemesis. A raised strip was left on the geison block, which helped support the rafter (Fig. 24). The geisa of the Temple of Poseidon and of the Temple of Nemesis both have shallow slots on the back, cut to accommodate the ceiling beams.

⁹⁰ On the Temple of Zeus at Olympia, the corner blocks were rectangular, ending in mutules; intermediate blocks (on the west end, for example), were primarily VMVM, with special blocks adjacent to the corner: P. Grunauer, "Der Zeustempel in Olympia—neue Aspekte," *BonnJbb* 171, 1971 (pp. 114–131), fig. 3.



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FIG. 24. Sections through roof of side colonnade: flank (above) and porch (below)

The techniques used by the workmen for fastening the blocks together and setting them into position were different on each of the three temples. The top surfaces of the geison on the Hephaisteion and the Temple of Poseidon exhibit a much more generous use of dowels than do those of the Temple of Nemesis. On the Hephaisteion and the Temple of Poseidon there are separate sets of dowel holes for the sima and the trapezoidal backers, while on the Temple of Nemesis a single vertical dowel sufficed to anchor the sima blocks. The blocks of the Temple of Poseidon were clamped together in two places on each end, with small, unusually thin double T-clamps. The blocks of the Hephaisteion were also clamped twice on each end. On the Temple of Nemesis, only one clamp is used for each joint, and the clamps are thicker than those of the Temple of Poseidon.

The blocks of the Temple of Nemesis were lifted into place with a single device, as the lewis holes in the center of the top surfaces indicate. Neither the flank geison blocks of the Hephaisteion nor those of the Temple of Poseidon have these cuttings, although the apex block of the raking geison on the Hephaisteion has a pair of large holes for tongs. The individual blocks of the geison at Rhamnous were attached to the frieze blocks and backers by a pair of vertical dowels: at Sounion, a single dowel was used for each block. The geison blocks in the Temple of Poseidon have pairs of horizontal dowel holes, square in section, which may have been used to join or align the blocks. This type of cutting does not occur on the Temple of Nemesis.

On the Hephaisteion, rectangular cuttings at the top of one joint edge of each geison block were used in prying the adjacent block into place. Such cuttings are not found in the Temple of Nemesis or the Temple of Poseidon. Dowels with pour channels were used on the Hephaisteion on the corner geison blocks and the apex blocks of the raking geison but not on the Temple of Nemesis, although a blind dowel was used for the corner sima on the southwest corner of the geison (G3).

The appearance of the tooling differs on the three temples in all grades from rough to fine, indicating that chisels with tips of slightly different widths were used. The different marble of each building (Pentelic, Agrileza, and Agia Marina) might have required slightly different techniques of tooling.

In view of the similarity of function, the differences between the geisa of the Hephaisteion, the Temple of Poseidon, and Temple of Nemesis are considerable. Especially noteworthy are the differences in the design of the jointing of the central blocks, the differences in the configuration of the top surfaces of the blocks on the flanks (with resulting differences in the design of the sima, sima backer, and rafter), and, finally, the extensive differences in the techniques used in laying and fastening the blocks.

The jointing of the central blocks and the design of the top surface of the geison would have required planning, with attention and thought given to the assembly of the roof. Before blocks of specific lengths could be ordered from the quarry, the jointing system had to be worked out. This technical planning would have been the responsibility of the architect. Given the conservative nature of Greek architectural practice, we should expect an architect to be consistent in the technical details of his buildings, even though he might change dimensions, proportions, or moldings. The differences in the geison and roof discussed above

suggest that the architect of the Temple of Nemesis was not the same person who supervised the Hephaisteion or the Temple of Poseidon.

PEDIMENT

The Tympanon

The tympanon on each end of the temple is composed of five blocks, with backers of the same shape and size. Six of the ten blocks and backers from the west end are preserved, as is one block from the east end.

The outer surfaces of both tympanon and backers were polished smooth, but the backs were left rough and slightly hollowed, with a smoother border around the edges, forming a rough version of anathyrosis. The ends of the blocks have a finer anathyrosis, carefully worked for a perfect joint. The blocks were clamped with double T-clamps to each other but not to their backers. On the top surfaces of most blocks are dowel and pry holes for the raking geison. At one end on some blocks, the bottom edge shows a shift cutting. The front surfaces of the tympanon blocks, like the top of the horizontal geison, show no traces of braces, clamps, or dowels for pedimental sculpture.

Six of the seven preserved blocks were found lying close to the west end of the temple. The seventh block, P1, was near the north side, close to the northwest corner; it is the only block which may be assigned to the east end. The shape and size of the blocks and the pry holes on the front horizontal geison provide evidence for the original positions of all the blocks (Fig. 25).

None of the blocks on the west end was doweled to the horizontal geison: although there are pry holes, there are no dowel holes for them on the top surface of the geison. None of the six blocks assigned here to the west tympanon has dowel holes in its resting surface. One geison block from the east end, however, center block G44, does have two dowel holes (one unused) and a pry hole which would have been used for the tympanon block immediately south of the central one.

P1 is the sole preserved block with a dowel hole, cut at the bottom of its right end. The top surface slopes down from left to right, and the heights of the ends (0.828 and 0.394 m.) indicate that it stood adjacent to a central block. Since there is no cutting for a purlin, it belongs to the tympanon rather than to its backers. Its shape shows that P1 belongs either south of center on the west or north of center on the east. If it were placed on the west end, its right edge would have rested on geison block G49, which has a pry hole in the appropriate position but no dowel hole. If P1 belongs on the east end, its right end would have rested on the geison block in position G (in Fig. 21, G52, placed in this position without certainty). None of the geison blocks which are candidates for position G are sufficiently well preserved to show dowel holes, but dowels were used at the east end for the tympanon, as the two holes on G44 indicate. Because of the dowel hole, P1 is assigned here to the east end, north of center.

The large central block of the west tympanon, P5, was found lying west of the center of the west end. With its top surface cut to fit the apex of the pediment, it is immediately recognizable as a central block (Pl. 43:a). The height of the block at the peak, 1.045 m., is an

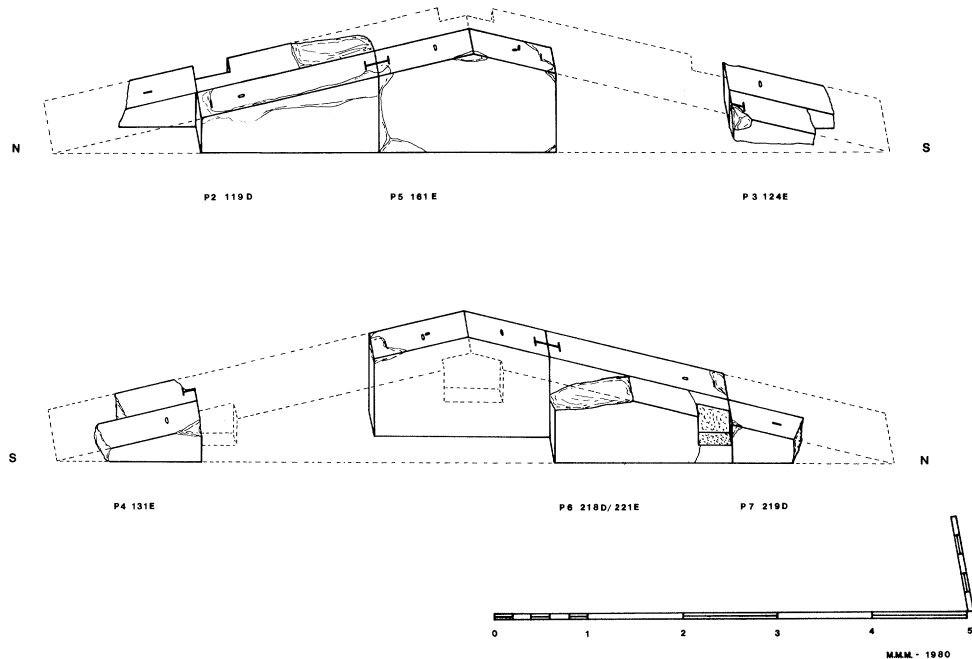


FIG. 25. Reconstruction of the west tympanon

important dimension, for it gives the height of the pedimental space. The front surface is smoothed and polished, and neither the front nor the back surface has cuttings for a ridge beam; it therefore belongs to the tympanon (Fig. 25). On the top surface are pry holes for blocks of the raking geison but no dowel holes for the apex block, which must have been doweled to the backer. The pry holes are 0.375 m. from the peak on the left side and 0.454–0.517 m. from the peak on the right side; the apex block of the raking geison must therefore have been *ca.* 0.75–0.77 m. long. The tympanon block is *ca.* 0.28 m. thick; the width varies slightly from top to bottom. Many blocks of the front horizontal geison have weathering lines 0.300–0.304 m. from the front edge of the block, which define a space *ca.* 0.56 m. wide to accommodate the tympanon blocks and their backers.

The top surface of P2 slopes down from right to left, and it has no cutting for a purlin. Its height, *ca.* 0.40 m. on the left end and 0.828 m. on the right, indicates that it stood next to a central block. The T-clamp cutting on the right end matches exactly the cutting on the left end of P5. P2 belongs to the tympanon, at the south side of P5.

P3 was found near the southwest corner of the temple. Its top surface slopes down from left to right, and the heights of the ends (0.226 [pres.] and 0.188 m.) indicate that it is an angle block, either the tympanon block at the southwest angle or the backer at the northwest angle. Because it was found lying near the southwest corner, it is assigned there.

P4, found lying close to P3, has a top surface which slopes down from right to left and heights of the ends (0.42 [pres.] and 0.162 m.) which indicate that it too is an angle block

(Pl. 43:b). Since it was nearest the southwest corner of the temple, it is assigned there, as a backer to P3.

The top surface of P7 slopes down from left to right, and the heights at the ends (0.285 m. [pres.] and 0.18 m.) indicate that it is an angle block. It could be the tympanon angle block at the southwest or the angle backer at the northwest; since the southwest angle of the tympanon is occupied by P3, and since P7 now lies near the northwest corner of the temple, it is assigned to the northwest angle as a backer.

P6, now in two pieces, lay near the northwest corner (Pl. 43:c, d). Its top surface slopes down from left to right; its height (maximum pres. 0.664 m.) indicates that it stood next to a central block. There is a cutting for a purlin at the right end on the face, 0.336 m. high and *ca.* 0.366 m. long, located 0.175 m. above the bottom of the block. P6, then, is a backer, and it belongs at the west end, north of the central backer.

The full length of the tympanon angle blocks at the west end is not preserved, but it may be restored on the basis of evidence provided by the horizontal geison. The southwest corner block of the geison, G3, has a raised ledge 0.446 m. wide along the flank, which slopes at the pitch of the roof and supported the corner sima. Between this ledge and the corner block of the tympanon, a wedge-shaped transitional block must be restored (Fig. 26). On the front of this block would have been carved the beginning of the moldings and overhang of the raking geison.⁹¹ The top surface of G3, the southwest corner block, is not sufficiently well preserved to show traces that would indicate the length of the transitional block. The northwest corner block G4 does have a pry hole for the wedge-shaped block, but since it was pried laterally, the hole does not indicate its length (Fig. 23). The angle block of the tympanon and the wedge-shaped block together had a length of *ca.* 1.987 m., equal to the distance between the pry hole for the tympanon block and the ledge on the corner geison block which supported the corner sima (this estimate is corroborated by the length of the preserved tympanon blocks). The wedge-shaped transitional block probably occupied about half the length (parallel to the façade) of the corner geison block inside the sloping ledge, or about 0.387 m.; on the front it extended into the corner (to the south) an additional 0.102 m. The length of the angle blocks of the tympanon may be restored, then, as *ca.* $1.987 - 0.387 = 1.60$ m.

On the east end of the temple, the angles of the pediment were treated in a somewhat different way. The top surface of the southeast corner block of the geison, G1, is cut differently from G3, with a narrower ledge (0.197 m.) for the support of the sima (Fig. 22). The wedge-shaped transitional block there must have been slightly longer, with an inclined bottom surface. The shape is simpler than that used on the west end because the bottom of the southern end would have rested directly at the level of the crowning hawksbeak molding of the geison, whereas on the west end the transitional block had to be cut *ca.* 0.043 m. to fit this level (Fig. 26). The design of the transitional block for the raking geison used on the east end would have been similar to the one which should be restored on the Temple of Ares.⁹²

⁹¹ This block is restored on the analogy of block "Y" of the Parthenon (N. Balanos, *Les monuments de l'Acropole*, Paris 1936, pl. 7, figs. 5, 9, 10).

⁹² Dinsmoor, "Ares," p. 19, fig. 9. The transitional block is not restored in this drawing, but the top surface of the geison requires it.

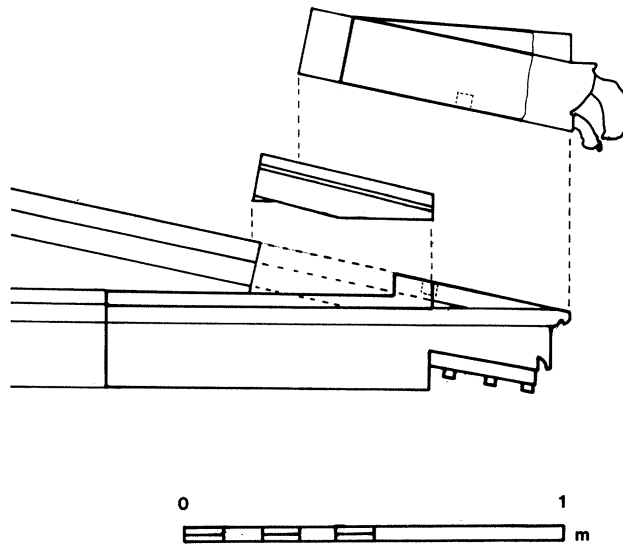


FIG. 26. Reconstruction of the geisa at the corner

The length of the pediment, measured between the crowning hawksbeak moldings of the corner geison blocks, would have been *ca.* 10.466 m. The height of the central block of the tympanon, 1.045 m., added to the height of the raking geison (0.125 m., measured vertically at the apex), gives a total height of 1.17 m. The pitch of the roof was 1:4.47.

The Raking Geison

Many fragments of the Ionic raking geison from the two fronts of the temple are preserved (Pl. 44:a).⁹³ The profile of the raking geison is the usual one used in Doric architecture of this period, with a hawksbeak as a bed molding and an extended (“Ionic”) drip crowned by another hawksbeak. The overall dimensions of the blocks may be reconstructed from evidence provided by the tympanon course below.

Dowel holes on the top surface of the tympanon indicate that the individual blocks were *ca.* 0.94 m. long. They projected 0.366 m. beyond the face of the tympanon. Their depth behind the face of the tympanon was probably *ca.* 0.56 m., the depth of the tympanon blocks with the backers, or a total depth of *ca.* 0.926 m. (Fig. 27). Their height (measured on existing fragments) is 0.121 m.

One fragment, RG2, has a dowel hole on its top surface for the raking sima. Both RG2 and RG1 exhibit excellent workmanship. The soffit of the drip is polished smooth, and the

⁹³ Eight fragments were collected on the north side of the temple in 1977; many smaller fragments were observed in the marble piles. All were subsequently removed and are kept in the storeroom on the site. The soffit of the overhang on the best preserved piece (RG1) is 0.366 m. deep, including the hawksbeak moldings on the soffit and crown; its overall depth (not fully preserved) is 0.925 m.

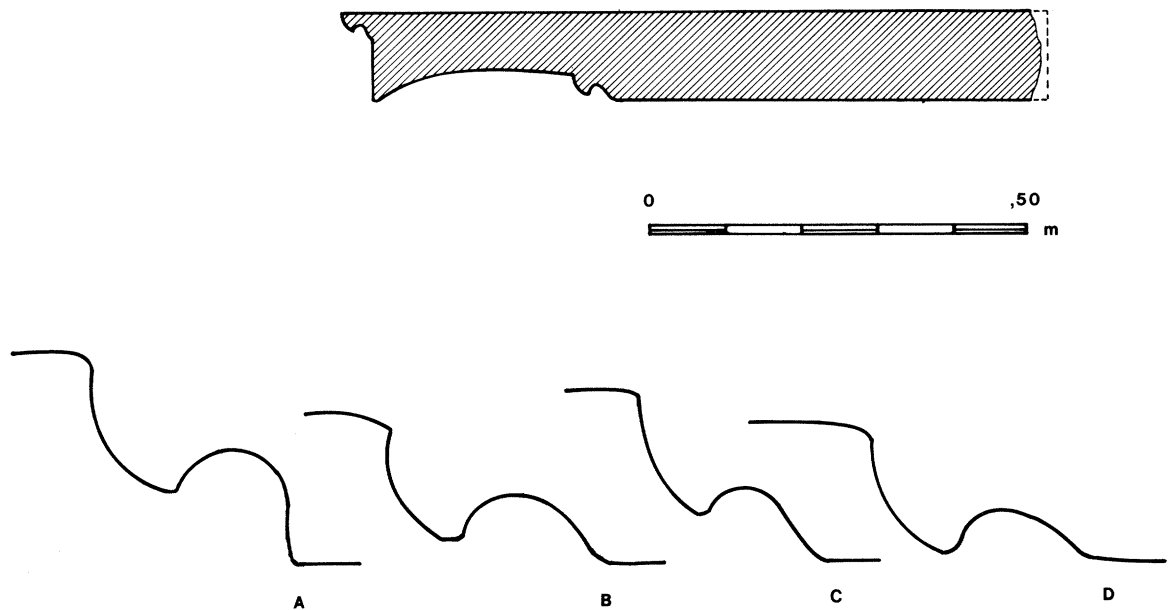


FIG. 27. Section through raking geison block RG1 142C. Comparison of profiles of raking geison hawksbeaks: A) Hephaisteion B) Temple of Nemesis, original block C) Propylon, Sounion D) Temple of Nemesis, replacement block (A and C after Shoe, pl. LII:16, 17)

moldings are cut with precision. Traces of paint remain on the crowning hawksbeak of RG1. The Doric leaf appears lightly incised, but this effect is probably caused by weathering.

The crowning hawksbeak molding of the raking geison is very similar to that of the front horizontal geison, with a tightly curved undercut and an incised horizontal line immediately below the curve. The bed molding on the soffit of the raking geison has a greater depth than the crowning hawksbeak. This type of hawksbeak is similar to the bed molding of the raking geison on the Hephaisteion (dated by Shoe to *ca.* 425), but the profile of the hawksbeak on the Temple of Nemesis is closest to that of the Propylon to the sanctuary of Poseidon at Sounion, *ca.* 420 (Fig. 27, A-C).⁹⁴

At some later period, parts of the raking geison were replaced. The workmanship distinguishes these blocks from the originals: the resting surface was left roughly chiseled, and the soffit of the drip still bears the marks of the claw-toothed chisel (Pl. 44:a). The dimensions and profiles of the moldings are irregular; the bed molding on some blocks has a depth up to 0.07 m., in contrast to the 0.054 m. of the original blocks (Fig. 27). The crowning hawksbeak molding on the replacement blocks is crudely undercut.

⁹⁴ Shoe, pl. LII:16, 17. The soffit bed moldings on the raking geison of the Parthenon, the Propylaia, and the Temple of the Athenians on Delos all have a fillet below the hawksbeak, and the hawksbeak does not have so great a projection as the one on the Temple of Nemesis.

These replacement blocks were almost certainly made at the same time as the replacement blocks of the frieze and the front horizontal geison, in the Roman period. There is not enough evidence to assign the fragments to their original positions, but it is probable that the replacement blocks also belong to the east end, where the other repairs were made.

ROOF

The Sima

The sima of the Temple of Nemesis is carved on one block with the lowest pan tile and has a centered integral stop for the cover tiles of the roof (Fig. 28, Pl. 44:b). The back of the block is wedge shaped and continues the slope of the roof. The spacing of the dowel holes for the sima on the top of the flank geison indicates that the blocks were 0.935–0.958 m. long, with an average length of 0.948 m.⁹⁵ Each had a lion's-head water spout, spaced so that there was one over every metope on the flanks. Several pieces of the sima were on the site in 1977, two which preserved the back and one which preserved part of the front with part of a lion's head. Several complete blocks are kept in the storeroom on the site.⁹⁶

The design of the sima, combining the actual gutter with the lowest pan tile and wedge-shaped support, is different from that used on the Hephaisteion, the Temple of Ares, and the Temple of Poseidon. On those temples, trapezoidal sima backers are to be restored; they were doweled into the geison and would have supported the sima (carved on one block with the lowest pan tile) and continued the slope of the roof, which began on the top of the projection of the flank geison blocks.⁹⁷ This type of trapezoidal sima backer is preserved in blocks from the Temple of Apollo at Bassai, where the architect used a design for the geison, sima, and sima backer similar to that of the Attic temples (Pl. 44:c, d⁹⁸). The smaller scale of the Temple of Nemesis made it convenient to combine the sima and backer in one block, a combination also used on the Temple of Athena Nike.

The profile of the sima is distinctive, with an ovolo crowned by a half-round astragal and a fillet at its base (Fig. 28). The sima profile follows that of the middle pediment of the Propylaia but with a greater curve and depth. The depth of the ovolo is similar to that on the sima of the Temple of Athena Nike, but there the ovolo is crowned with a cavetto.⁹⁹ The ovolo form of the sima on the Temple of Nemesis is quite different from the cyma-reversa type on the Hephaisteion and the raking sima of the Temple of Poseidon at Sounion.¹⁰⁰ The cyma reversa is crowned by an astragal on the Hephaisteion sima, while on the Temple of

⁹⁵ Gandy illustrates a complete block, pl. 7.

⁹⁶ The blocks on the site in 1977 had the following maximum preserved dimensions:

RT1 68B Back of sima. Pres. L. 0.647 m., pres. W. 0.527 m. (Fig. 29).

RT2 69B Back of sima. Pres. L. 0.656 m., pres. W. 0.279 m.

RT3 102F Front of sima. Pres. L. 0.393 m., pres. W. 0.190 m., pres. H. 0.134 m. Preserves lower part of lion's head on front. Found under wall blocks from the Temple of Themis.

⁹⁷ For illustrations, see Dinsmoor, Jr., "Poseidon," p. 218, ill. 6; Dinsmoor, Jr., "Hephaisteion," pp. 226–229, ills. 3 and 4; Hodge, *WGR*, p. 79, fig. 18.

⁹⁸ The cutting on the side of the trapezoidal block in Pl. 44:c formed part of a socket for a rafter.

⁹⁹ Shoe, pl. XIX:7, 5.

¹⁰⁰ Dinsmoor, "Ares," p. 44, fig. 16.

Poseidon it is crowned by an ovolo.¹⁰¹ The choice of the ovolo sima crowned with a half-round is distinctive at Rhamnous: the architect did not follow the patterns of the buildings on the Akropolis or the other Attic temples.

One corner block of the sima is preserved. It belongs on the southwest corner (RT4 134D, Fig. 29, Pl. 45:a), and part of its top surface served as a base for the corner akroterion. The block is broken on three sides but preserves the profile of the raking sima, which is the same as that of the flank sima. It was fastened in place with a blind dowel; the dowel hole, 0.043 m. square, corresponds to the one on the inclined ledge of the southwest corner geison block, G3, located 0.3775 m. in from the front edge.¹⁰² On the left side of the block, higher up the slope of the pediment, a broken edge projects *ca.* 0.011 m. along the front and bottom; it is to be restored as the lowest tile of the raking sima, and it confirms the accuracy of Gandy's drawing on plate 10. This elaborately shaped block must have been fragile, and it is not surprising that it broke where it did. The length of the bottom of the block on the front side may be restored to *ca.* 0.66 m., corresponding to the depth of the regular flank sima blocks.¹⁰³

A lion's head is to be restored on the flank side of RT4; it completed the row of heads along the flank and served as a spout for the last two rows of pan tiles at the west end. The length along the flank of the corner sima block may be restored on the basis of the length of the support for it on the top of the corner geison block G3. It was 1.147 m. long at the base, the sima projecting *ca.* 0.07 m. beyond the raking geison. This length is equivalent to the width of a normal pan tile, *ca.* 0.476 m., added to the depth of the raking sima, *ca.* 0.67 m.

This intricately cut block, RT4, also supported the corner akroterion. It had a ledge, now broken, at such an angle to the slope of the sima that the base it formed would have been nearly horizontal. The top of the base has a shallow depression to accommodate the plinth of the akroterion; only part of two sides of the cutting is preserved. The bottom of an approximately square hole for a dowel is preserved, 0.06 m. in from the preserved side and 0.324 m. back from the front of the block; it was probably used to anchor the akroterion. There are coarser chisel marks around the edge of the cutting, which suggest that the dowel was removed and a repair or replacement made at a later time (Fig. 29).

Because of the length on the flank side of the corner sima, the next adjacent flank sima block must have been nearly triple the width of a pan tile, instead of the usual double width. That this was in fact the case is confirmed by the absence of dowel holes for a sima block on the exceptionally well preserved top surface of G12, in position A on the south. This extra-long flank sima block was the last laid on that part of the flank, for it was not doweled. The dowel hole on the top surface of G13, in position B on the south, was used for a sima block of

¹⁰¹ Dinsmoor, Jr., "Poseidon," pp. 221–223, ill. 15. The profile of the raking sima on the Temple of Poseidon is similar to that on the Temple of Aphaia on Aigina. The flank sima of the Temple of Poseidon, which had a flat, pierced profile, was re-used on the Temple of Ares in the Roman period (pp. 233–237).

¹⁰² On the Great Temple of Apollo, Delos, the northeast corner block of the geison also has a blind dowel for the corner akroterion (Courby, *Délos* XII, figs. 45, 46, 47, and 48) and so does the Hephaisteion.

¹⁰³ Gandy gives the dimensions of the base of the akroterion on the front and the side, but he gives no dimensions for the block as a whole (pls. 4, 10).

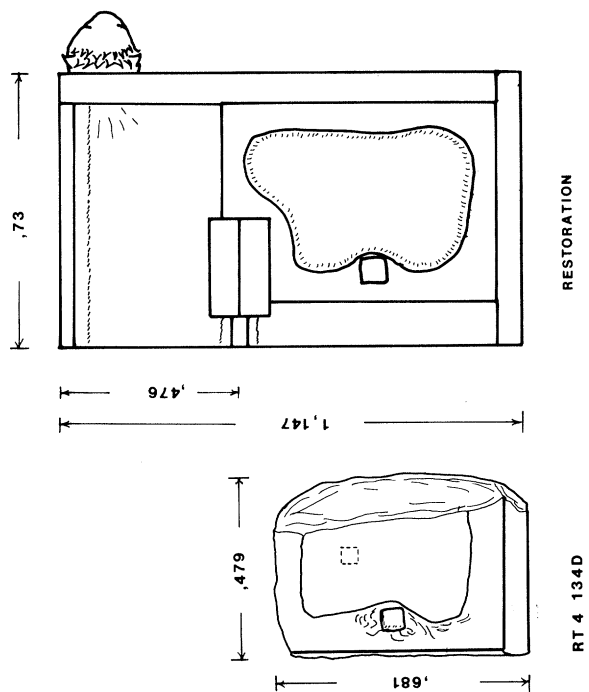


FIG. 29. Corner sima block RT4 134D

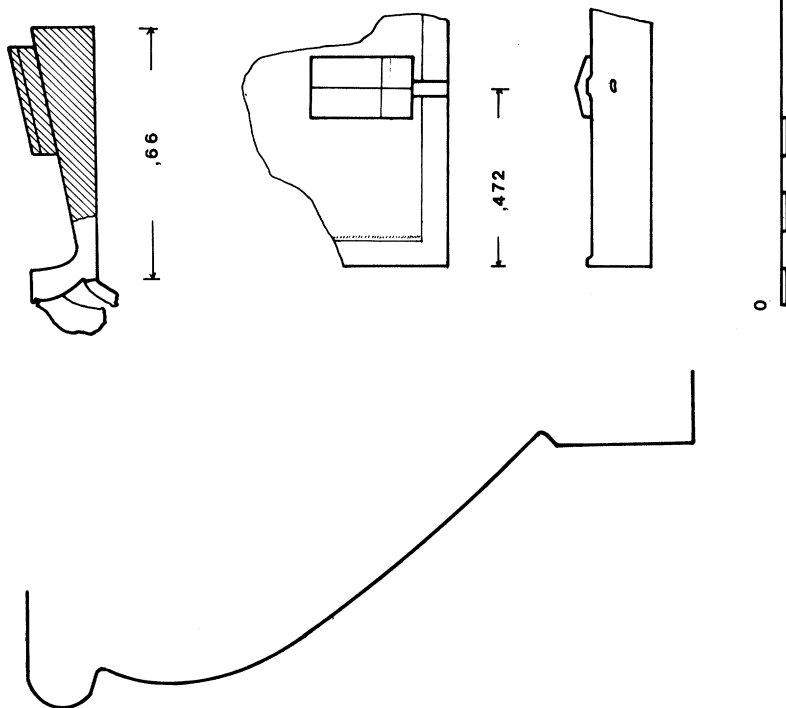


FIG. 28. Sima block RT1 68B. (See Pl. 44:b)

normal length adjacent to the extra-long one, and it was pried from west to east. The distance between it and the right (eastern) edge of the ledge for the sima on the corner geison block is *ca.* 1.45 m., or approximately triple the width of the pan tiles.

The Tiles

Many fragments of pan and cover tiles which had been gathered into marble piles at Rhamnous have subsequently been removed to the storeroom. Gandy illustrates the pan tiles, ridge tiles, and ridge antefixes, and gives a reconstruction of their arrangement on half of the roof (pls. 10–12). The fragments on the site confirm his measurements. The pan tiles are 0.476 m. wide and 0.686 m. long, the cover tiles 0.155 m. wide and 0.609 m. long. There would have been 44 rows of pan tiles in addition to two end rows cut integrally with the raking sima.

One ridge antefix, taken from the site in 1895, is now in the German Institute of Archaeology at Athens.¹⁰⁴ It is 0.442 m. long at the base and 0.2946 m. high, measured from the tip of the palmette to the apex of the soffit.

The Akroteria

In addition to the base for the corner akroterion carved with the corner sima (RT4), one further fragment from an akroterion base is preserved, RT5 140D. It comes from the back corner of a base for a central akroterion, and since it was found near the northwest corner of the temple it may be assigned to the west end (Pl. 45:b, c). The slope of the preserved corner indicates that it formed the northeast corner of the support.

Gandy illustrates two corner akroteria (Pl. 30:a), each composed of a griffin attacking a stag (pl. 2), and he says, "The chimaerae on the akroteria, at the points of the pediment, were found in front of the temple."¹⁰⁵ The griffins have since disappeared.¹⁰⁶ Gandy gives the dimensions of bases for corner akroteria, 1' 8.55" × 2' 4.3" (0.522 × 0.719 m.), and the length of the base for a central akroterion, 2' 4.25' (0.7176 m.), but he does not say whether these bases were found near the east or west front.

Gandy's restoration of the griffins on the east end was accepted until 1962, when Semni Karouzou published the lower part of an akroterion, a plinth with feet, which she had found in a corner of the National Museum in Athens.¹⁰⁷ The sculpture is of Parian marble, like the statue of Nemesis carved by Agorakritos, and the style indicates a date of *ca.* 420. On the basis of the arrangement of the feet on the plinth, Karouzou restores the central akroterion as Oreithyia and Boreas. She would restore running maidens rather than griffins on the corners, on the analogy of the Temple of the Athenians on Delos.

The length of the plinth of Karouzou's akroterion is 0.69 m., its depth 0.42 m.¹⁰⁸ According to Gandy, however, the length of the base for the central akroterion is 2' 4.25"

¹⁰⁴ M. Meurer, "Das griechische Akanthusornament," *JdI* 11, 1896, p. 132, fig. 20. This photograph shows that Gandy's drawing is accurate in every detail.

¹⁰⁵ Gandy, p. 45.

¹⁰⁶ B. Petrakos, "La base de la Némésis d'Agoracrite," *BCH* 105, 1981 (pp. 227–253), pp. 228–229, note 5.

¹⁰⁷ Karusu, "Akroter," with pls. 44–48; a penciled note in the inventory book of the National Museum suggests that the plinth may have come from Rhamnous.

¹⁰⁸ Karusu, "Akroter," p. 179, note 1.

(0.7176 m.), which allows almost no space for a plinth the size of Karouzou's to be sunk into the top, as was the southwest corner akroterion into RT4. Gandy's measurements have proven to be accurate for other parts of the temple, and so this one should not be ignored.

One could argue, as Despinis does, that the base which Gandy measured was a replacement of a later period.¹⁰⁹ The existence of RT5, however, suggests that at least the western akroterion base could have been available to Gandy.¹¹⁰ Although the workmanship of RT5 is excellent, and it certainly belongs with the original roof, it is now so fragmentary that its dimensions are not reliable criteria for rejecting or accepting Karouzou's akroterion. As we have seen, however, the pry holes on the top surface of the outer central tympanon block at the west end (P5) indicate that the apex block of the raking geison was *ca.* 0.75–0.77 m. wide. It is unlikely that this block would have been much smaller than the central akroterion base.¹¹¹ Oreithya and Boreas would not have been comfortably accommodated on the east end of the temple, if the central akroterion detail was like that at the west end.

The height of the central block of the tympanon on the west end (P5), 1.045 m., gives the height of the pediment. Karouzou gives no estimate for the height of the Oreithya and Boreas group, but its preserved dimensions suggest that it may have been designed rather tall in proportion to the pediment, even though the pediment was empty of sculpture.

One might also note the absence of fragments of wings on the site (none have ever been reported): the condition of the plinth now in the National Museum suggests that the statue was broken at Rhamnous.¹¹² For all these reasons it is doubtful that Karouzou's Oreithya and Boreas group belongs to the Temple of Nemesis.

The griffins found and drawn by Gandy should not be dismissed lightly as candidates for the corners, for they are a type more common to akroteria and less so to dedications or other freestanding sculpture one might find in a sanctuary.¹¹³ Despinis, who accepts Karouzou's attribution of the akroterion in the National Museum to the temple at Rhamnous, points out that griffins and Oreithya and Boreas make an odd combination. He notes that griffins are frequently associated with Nemesis in the Hellenistic and Roman periods, and he suggests that the griffins were later replacements for the original, Classical akroteria.¹¹⁴

¹⁰⁹ Despinis, p. 164.

¹¹⁰ In every instance where Roman replacement blocks exist side by side with Greek originals, Gandy gives the dimensions and appearance of the original blocks. This is true for moldings as well as whole blocks. Gandy naturally would have chosen for his study the best preserved, finest examples, with the best workmanship, since his foremost purpose was to provide models for contemporary building (see footnote 13 above). Nonetheless, even if the block Gandy measured was RT5, it is still possible that this, the original base for the western central akroterion, was smaller than the original base for the eastern central akroterion.

¹¹¹ On the Hephaisteion, the apex block of the raking sima (carved in one piece with the central akroterion base) did overlap the apex block of the raking geison very slightly (Dinsmoor, Jr., "Hephaisteion," p. 230, ill. 5).

¹¹² In comparison, fragments of wings were found around the Stoa of Zeus in the Athenian Agora. (I am indebted to Professor H. A. Thompson for this observation.)

¹¹³ L. Beschi discusses several instances of griffins used for funerary sculpture: "Un nuovo tema della scultura funeraria attica," in ΣΤΗΛΗ, pp. 463–472.

¹¹⁴ Despinis, p. 163. C. Delplace also would date the association of griffins and Nemesis to the Roman period; in remarking on the cult statue of Nemesis, she was apparently unaware of Despinis' work (*Le griffon [Études de philologie, d'archéologie et d'histoire anciennes 20]*, Brussels/Rome 1980, pp. 303–305, 399–413).

Despinis' explanation for the griffins is a good one, especially since the southwest corner akroterion base (RT4) has gouge marks which may indicate a repair or replacement, and since part of the top surface of the southeast corner geison block also appears to have been reworked. That the east end of the temple suffered severe damage to the frieze, geison, and raking geison and was later repaired has been demonstrated (pp. 181, 198–200, 208–209 above). It seems probable that the delicate akroteria were also damaged and had to be replaced. Since we should reject the group of Oreithyia and Boreas for any place on the temple, the original central and corner akroteria remain unknown.

INTERIOR

The Temple of Nemesis has a pronaos, cella, and opisthodomos. Their combined length is 15.045 m., and their width is *ca.* 6.50 m., measured on the outside of the walls. Inside, the pronaos is *ca.* 5.15 m. wide and 3.022 m. deep, the cella *ca.* 5.17 m. wide and 7.32 m. long, and the opisthodomos *ca.* 5.15 m. wide and 3.509 m. deep.

The Cella

If we compare the placement of the cella within the colonnade in three contemporary, hexastyle Attic temples whose inner configuration is known, we see considerable variation. While the pronaos is placed similarly because the antae are aligned with the third column from the front, the opisthodomos is designed differently in each temple. In the Hephaisteion the opisthodomos is shallower than the pronaos, even though its antae extend to the second interaxial space on the flanks; this is the result of a deep cella. In the Temple of Poseidon the opisthodomos and pronaos are similar in depth, but the antae of the opisthodomos extend to the axes of the third column on the flanks. In the Temple of Nemesis the opisthodomos is deeper than the pronaos, and its antae extend to the second interaxial space on the flanks (Fig. 6).¹¹⁵

The Pavement

The floor of the pronaos was paved with two rows of four blocks, 1.263 m. long and 1.074 m. wide, with their longer dimension parallel to the east end. Four of these blocks are approximately in place on the south side of the pronaos (Pl. 46:a). The floor of the opisthodomos was paved with two rows of four blocks, 1.019 m. wide and 1.338 m. long, their longer dimension perpendicular to the west end. One block is almost in place in the southeastern corner of the opisthodomos.

The floor of the cella was paved with four rows of seven blocks, *ca.* 1.297 m. long and 1.05 m. wide, their longer sides parallel to the east end. Two blocks are preserved, one almost in place in the temple (Pl. 46:b). Another, F11 70B, has been placed on the platform, in the interior of the temple. Cemented together from at least three fragments, it now measures 1.293 m. long, 1.049 m. wide, and 0.202 m. thick. Both the paving block in the

¹¹⁵ The more complex interior of the octastyle Parthenon covers even more of the space enclosed by its outer colonnade; raised on two steps, the prostyle hexastyle colonnades of both pronaos and opisthodomos are aligned at their lowest step with the midpoint of the flank column second from each end.

temple and F11 bear rough channels cut into their top surfaces. Possibly these channels were associated with a screen, a table, or dedications set up in the cella.¹¹⁶

Elevations taken on the temple show that the paving of the cella was *ca.* 0.153 m. higher than top of the toichobate and 0.239 m. higher than the (finished) stylobate and peristyle paving. The floor of the pronaos is flush with the level of the pronaos stylobate and *ca.* 0.087–0.097 m. higher than the paving of the peristyle. Thus a visitor would have had a short step up into the pronaos and another step up into the cella.

The Columns of the Porches

The pronaos had two columns *in antis*; the lower drum of the southern one is still on its stylobate. These two columns would have been slightly shorter than those of the peristyle, since the toichobate and stylobate of the pronaos are 0.0865 m. higher than the stylobate of the peristyle. The height of the pronaos columns may be restored as 4.0135 m.

At the front of both columns the working surface has been removed from eleven of the twenty flutes, but the fluting was never completed or polished (Pl. 37:d). The several small fragments from these columns on the site are readily identifiable by this incipient fluting, which could have been carried out at any time after the original construction of the building.¹¹⁷

The opisthodomos also had two columns *in antis*, but they and their stylobate are not preserved.

The Walls

Four exterior orthostate blocks and many fragments are preserved. The height of the orthostates varies slightly, 0.811 to 0.814 m. Their full length is not preserved, but one block may be restored to 1.501 m. This block probably came from the pronaos or opisthodomos walls, since the pry holes on the toichobate of the cella indicate that the orthostates there were *ca.* 1.00–1.10 m. long. The outer face of the blocks was left rough, and the lifting bosses were not chiseled off. The lower face of the blocks was recessed to a height of 0.126 m. from the bottom edge (Fig. 30; Pl. 46:d). The blocks were clamped together with swallowtail clamps, a form usually but not exclusively employed in the Archaic period.¹¹⁸ No traces of lead remain in any of the cuttings; the clamps were probably made of wood rather than iron.¹¹⁹

The toichobate on the south side of the cella has two sets of pry holes used for the exterior and interior orthostates. The pattern of the chisel marks on the top surface of the toichobate

¹¹⁶ For an illustration of a possible reconstruction, see B. Petrakos, *A Concise Guide to Rhamnous*, Athens 1983, p. 14, fig. 5.

¹¹⁷ Cf. columns from the so-called “stoa” at Thorikos, re-used in the Southwest Temple in the Athenian Agora and fluted in the Roman period: Dinsmoor, Jr., “Floating Temples,” p. 416 and note 10.

¹¹⁸ Martin, pp. 241–247.

¹¹⁹ Martin lists the many instances where wood was used instead of iron and lead (pp. 241–254). Wood, with a tensile strength about thirty times greater than marble, would have afforded protection against lateral shearing. It was also less expensive than iron. The cuttings in the blocks not only have no traces of lead but they are also not damaged, as would be the case if scavengers had pried out the iron and lead. Traces of lead and iron are found in many of the cuttings for T-clamps on other blocks.

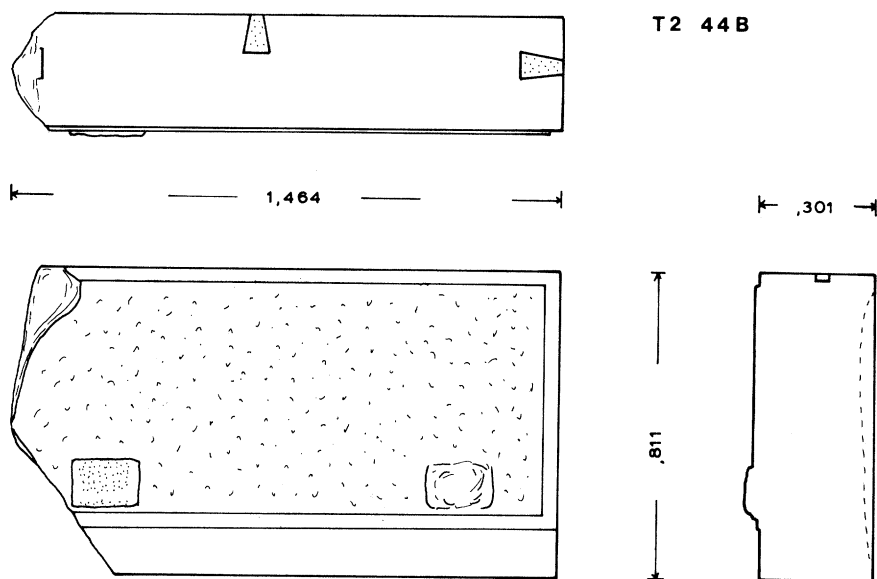


FIG. 30. Orthostate T2 44B with swallowtail-clamp cuttings

shows clearly the vertical division between the two sets of blocks which rested on it (Pl. 46:c). The outer face of the exterior orthostate was set back *ca.* 0.095 m. from the outer edge of the toichobate. The total width of the toichobate (*ca.* 0.656 m.) less the width of the exterior orthostates (*ca.* 0.305 m.) leaves *ca.* 0.256 m. for the interior orthostates, a width which fits the pattern of the chisel marks. The pry holes in the toichobate indicate that both the exterior and interior orthostates were *ca.* 1.00–1.10 m. long, with staggered joints.

There was no molding on the outside of the toichobate, as there is in the Hephaisteion. Gandy illustrates a molding which he found in the interior of the cella, suggesting that it was a base molding for the interior walls; Petrakos, however, has now shown that it belongs to the base of the cult statue.¹²⁰ The molding consists of a carved guilloche set above a scotia under a cyma recta, which is then crowned by a carved bead-and-reel astragal: the total height is 0.177 m. (6.98").

The base of the walls on the interior of the temple was probably unadorned, as was common in the Doric order. The interior orthostates would have appeared somewhat lower than those on the exterior because the level of the paving of the cella was 0.153 m. higher than the top of the toichobate. Above the course of orthostates, the wall would have been built of blocks of uniform size extending the full width of the wall (*ca.* 0.55 m.).

The wall blocks have entirely vanished from the site. They would have been of a size most convenient to local inhabitants for re-use in their own structures or for burning to produce lime for cement. The total height of the wall, from the peristyle pavement to the ceiling

¹²⁰ Gandy, pl. 13; Petrakos, "Base," pp. 246–248.

beams, was 5.419 m. When the heights of the raised toichobate, the orthostates, and the epikranitis are subtracted, the total height left for ordinary wall blocks is 4.3445 m. If the blocks were divided into eleven equal courses, each block would have been 0.395 m. high.

The Antae

Three orthostates from the antae are preserved, which were found lying askew in the temple. The best preserved block formed the exterior side of the northeast anta of the pronaos. It is 1.548 m. long, 0.811 m. high, 0.31 m. wide where it adjoined the wall blocks, and 0.353 m. wide at the front. It has the same unfinished surfaces as the exterior orthostates of the cella walls. The length of the return on the side is 0.722 m., close to the lower diameter of the columns of the peristyle; the finished projection of the return is 0.05 m. The face of the anta would have been $2 \times 0.353 \text{ m.} = 0.706 \text{ m.}$ wide, and the pronaos wall $0.706 - 2 \times 0.05 = \text{ca. } 0.606 \text{ m.}$

That the wall thickness of the pronaos was greater than that of the cella (*ca.* 0.56 m.), as indicated by the greater width of the pronaos toichobate, is confirmed by the placement of the edges of the paving slabs of the pronaos, which reveals a slightly narrower interior width than that of the cella. This arrangement is also indicated by the chisel marks on the toichobate at the junction of the door wall with the outer walls of the cella: these show that the narrower interior orthostates of the cella walls turned inward and continued up to the sides of the door. On the west end also, the narrower backer course continued along the inner side of the crosswall.

The pronaos and opisthodomos would not have appeared stark because the antae had richly carved capitals. Gandy illustrates the anta capital, Shoe measured part of an anta capital, and a small fragment of one was found north of the temple.¹²¹ The moldings of the capital consist of a fascia crowned by a cyma reversa, both set above a hawksbeak; beneath the fillet of the hawksbeak is an ovolo deeply carved with an egg-and-dart pattern and below that an astragal carved with a bead-and-reel pattern. The total height of the moldings is 5.17" (0.131 m.), very close to the height of the abaci of the column capitals (0.130 m.). Below the moldings a fascia 3.8" (0.0965 m.) high projected slightly beyond the face of the anta. On the basis of fragments in the storeroom at Rhamnous, Iliakis restores beneath this one a second fascia, decorated with a delicate lateral-palmette design, and below it, a second astragal, carved with a bead-and-reel pattern.¹²²

Gandy illustrates the anta and anta capital of the opisthodomos (pl. 9). The return on the side was shorter than that on the antae of the east end: immediately beneath the anta capital, he gives the return as 1' 2.9" (0.378 m.) wide, close to the width of the triglyphs of the exterior frieze (0.377 m.). As noted above (p. 165), he incorrectly assigned the heavier

¹²¹ Gandy, pls. 6, 9; Shoe, pl. LVII:10. Shoe states (p. 120) that she did not know whether to restore the ovolo and bead-and-reel astragal shown by Gandy, which recall the Parthenon. The small fragment that I found north of the center of the temple confirms Gandy's drawing, as it preserves the bead-and-reel astragal, with the broken lower edge of the ovolo above it. This piece was subsequently removed to the storeroom: pres. L. 0.109 m., pres. W. 0.098 m., pres. H. 0.048 m.; H. of astragal, 0.011 m. (= Gandy's .44").

¹²² Iliakis, "Ornament," pp. 253-256, ill. 9 and pls. 56:B, 57.

epistylon to the exterior of the building and the blocks with lighter moldings to the pronaos. At the top of the exterior orthostate in Gandy's drawing, the return is shown wider than at the anta capital, 1' 4.1" (0.408 m.); this is closer to the minimum of 0.42 m. which should match the heavier regulae of the pronaos frieze.

The Door

The threshold block of the door to the cella was *ca.* 1.826–1.871 m. wide, as indicated by the pry holes. It would have been somewhat higher than the floor of the cella (as it served as a stop for the doors), and it provided a step up from the pronaos of at least 0.152 m. The jambs of the door probably projected over the ends of the threshold block. Gandy restores the width of the door as 4' 9.17" (1.452 m.), equivalent to the distance he gives between the two columns of the pronaos. The door may have had a carved lintel, for Gandy illustrates another set of moldings which he found in the pronaos: a deeply carved cyma reversa crowned by a cavetto, with a carved bead-and-reel astragal below (pl. 13).

The Epikranitis

Several blocks of the epikranitis are preserved. They extended the full thickness of the wall (*ca.* 0.55 m.) and supported the ceiling beams of the flank peristyle, the cella, the pronaos, and the opisthodomos (Pl. 48:a). The height of the blocks is *ca.* 0.168 m. on the side which faced the cella, and *ca.* 0.177 m. on the side which faced the pteromata. The height of the exterior side matches that of the ledge on the back of the geison blocks, and together these blocks supported the ceiling beams of the flank peristyles. The exterior side of the epikranitis blocks was carved with a hawksbeak molding (not preserved) which would have matched the one on the back of the geison blocks (0.046 m. high).

On the east, where the frieze was carried across from the antae to the back of the exterior frieze, the epikranitis would also have been carried across as a crown course above the frieze and its backer. On the west, the epikranitis alone as a beam was carried across to the back of the flank peristyle frieze. The same hawksbeak molding is carved on all the blocks of the geison and must have been matched by one on the epikranitis which ran above the friezes of the pronaos and opisthodomos. On the interior side of the epikranitis was carved a heavier hawksbeak molding with a height of 0.065 m. (Fig. 24).¹²³

The Ceilings

Many fragments of marble ceiling beams were found on the site. Two series are preserved which differ only in their height and (restored) length. The first series, represented

¹²³ Shoe assigns a heavier hawksbeak molding to the outer face of the epikranitis, which would require that two hawksbeaks of different heights (0.046 m. and 0.065 m.) meet (p. 127, pl. LX:14). It is difficult to see how such a transition is possible, and this assignment should be rejected. An even heavier hawksbeak molding (0.077 m.), represented by Ep3 75D and Ep5 220E, should be assigned to an Archaic building in the sanctuary, perhaps the predecessor of the Temple of Nemesis (see footnote 53 above). The hawksbeak molding which I assign to the interior of the epikranitis has a profile which by itself might be dated to the late Archaic period (Shoe, p. 127, pl. LXXVII).

by the majority of the preserved beams, is 0.207 m. high and had a span of 1.092 m. and a soffit 0.361 m. wide (Pl. 47:a). The beam is crowned on each side by an ovolo, which was continued on thin filler panels slipped between the ends of adjacent beams, perpendicular to them, to fill the intervals between the beams (CB8 181B; Pl. 47:b).

This series of beams is to be assigned to the flank peristyle. Their number and spacing may be deduced from the slots cut for them on the backs of the geison blocks, which indicate that fourteen beams were used on each flank. The easternmost beam was set only *ca.* 0.36 m. from the epikranitis course which was carried from the antae of the pronaos to the flank peristyle. A half coffer grid should be restored over this interval. The length of the flank ceilings was *ca.* 13.80 m.; when the widths of the short interval and of the fourteen beams (soffit width 0.361 m.) are subtracted, the fourteen remaining intervals would average 0.599 m. The spacing of the beams from center to center would then be 0.960 m., a reconstruction confirmed by the placement of the slots for beams on the backs of the geison blocks. The slots vary in width from 0.40 to 0.45 m., and the intervals vary from *ca.* 0.50 to 0.55 m.; the average spacing would be *ca.* 0.95 m.¹²⁴ The visible soffit of the marble coffer grids would have been 0.517 m. wide.

The second series of ceiling beams has a height of 0.245 m., but the width of the soffit, 0.361 m., is identical to that of the beams from the flank peristyle. The length of their exposed soffits may be restored to *ca.* 2.582 m., the span across the east porch, and 1.983 m., the span across the west porch.¹²⁵ One end beam from the porches is preserved, CB6 180D/E (Pl. 47:c). Like the beams in the Hephaisteion, its top surface is chamfered to allow the rafters to pass over it.¹²⁶ It is clear from the chamfering that the beam was set as far back on the rear ledge of the (flank) geison blocks as possible (Fig. 21). The distance between the backs of the beam ledges of the two corner blocks of the geison (on the preserved west end) is 8.344 m. When the widths of two end beams (soffit width 0.366 m.) and of seven regular beams (soffit width 0.361 m.) is subtracted, space is left for eight intervals averaging 0.636 m. Thus the beams were spaced 0.997 m. on centers.¹²⁷ The visible width of the coffer grids would have been 0.553 m.

The marble coffer lids of the Temple of Nemesis were carved individually and separately from the coffer grids and were held in place by raised, beveled rims on the tops of the grids. A similar arrangement was used on the Hephaisteion, except that there an elaborate system of lettering indicated the exact position of each separate lid on the grids.¹²⁸ Some

¹²⁴ These figures are necessarily rough averages, because the actual length of the slots on the geison blocks and the intervals between them do vary five or six centimeters. There was no need for precise work here, since the slots received only the rough ends of the beams, which themselves vary in width. All these parts would have been concealed by the thin filler panels in the intervals.

¹²⁵ The dimension 1.983 m. is given by the preserved geison blocks of the south flank, west end (G12, G13). The dimension for the east porch is derived from the restored length of the geison blocks on the south flank at the east end (G14, G15, G16, and the inner corner of G1; only the length of G14 is incomplete).

¹²⁶ Cf. Dinsmoor, Jr., "Hephaisteion," p. 228, ill. 4.

¹²⁷ This restoration differs from Gandy's (pl. 3); he did not place the end beams on the ledge of the geison, and so the full width of its soffit was exposed. As a result, the spacing of the beams is narrower in his drawing.

¹²⁸ Wyatt and Edmonson, pp. 135–167.

masons' marks on grids from Rhamnous have been recorded, but they appear to have been used as more casual notations (Pl. 48:c).¹²⁹

Three fragments of coffer grids from Rhamnous, now in the collection of the American School of Classical Studies at Athens, provide some of the dimensions of the grids.¹³⁰ The grids are 0.054 m. high, and the soffit of the individual section is 0.088 m. wide. On the center of the soffit are engraved two parallel lines between which was painted a bead-and-reel design. A complete grid would have had two rows of four panels.¹³¹ This type of coffer grid should be assigned to the flank peristyles. The coffer grids for the porches would necessarily have been slightly larger, since their visible soffit was 0.553 m. wide, in contrast to the 0.517 m. of the grids on the flanks.

The use of a larger coffer grid over the porches is confirmed by other fragments of coffer lids, of which there are three sizes.¹³² The first consists of coffers carved together with the grids. The workmanship on one type observed at Rhamnous is inferior to that of the other two; in addition, the height of its grid (*ca.* 0.035 m.) is less than that of the coffer grids assigned to the flank peristyle (0.54 m.), although the block as a whole is thicker than the flank grid and lid combined (*ca.* 0.14 m.). Hodge assigns this type to the pronaos and opisthodomos ceilings,¹³³ but because of the workmanship, the different height of the grid, and the design with lid and grid together, these pieces are more likely to have been replacements of the Roman period.

The second series of coffer lids has a coffer sinking 0.105 m. square, measured within the moldings, and the height of the whole lid is 0.042–0.048 m.¹³⁴ This type of lid, the smallest found on the site, is to be assigned to the ceilings of the flank peristyle.

The third series of coffer lids has a coffer sinking 0.116 m. square, measured within the moldings, and a total height of 0.062–0.069 m.¹³⁵ The height of the ovolo molding is 0.02 m.

¹²⁹ B. Petrakos comments on these masons' marks and illustrates them with a drawing ("Inscriptions," pp. 329–330, ill. 6).

¹³⁰ I thank Professor Henry Immerwahr for permission to include these fragments in this study. Their dimensions are as follows:

1 (no. 8). Fragment of grid, at junction of four panels

Pres. L. 0.183 m., pres. W. 0.197 m.; pres. H. 0.046 m., with bevel between lids, 0.59 m. Bottom surface not preserved.

2 (no. 12). Fragment of grid, part of junction at one end

Pres. L. 0.208 m., pres. W. 0.101 m., W. soffit 0.088 m., H. 0.054 m., H. with bevel between lids 0.066 m. On soffit, two parallel incised lines for painted astragal (W. 0.006 m.) in center.

3 (no. 13). Fragment of grid, from end

Pres. L. 0.181 m., pres. W. 0.136 m., H. 0.055 m., H. at end 0.064 m. On soffit, two parallel incised lines for painted astragal (W. 0.007 m.) in center.

¹³¹ Gandy illustrates the coffer grids and lids but does not provide the dimensions of entire blocks (pls. 6, 9). He also illustrates the painted design, a gold star, which he found preserved in the soffit of the lids, a design which recalls those on the the Parthenon (see footnote 31 above).

¹³² Hodge first noticed the three different types, and he illustrates fragments of each (*WGR*, pp. 112–115, fig. 23). The existence of the three different types was confirmed by the author by measuring the fragments on the site (Oct. 25, 1980).

¹³³ Hodge, *WGR*, p. 114.

¹³⁴ Hodge, *WGR*, p. 114.

¹³⁵ The dimension 0.116 m. is given by Gandy (4.6", pl. 9) and confirmed by Hodge (*WGR*, p. 114). The other dimensions are given by Gandy (pls. 6, 9).

This larger size of coffer lid should be assigned to the ceilings of the porches, since they require a slightly larger grid to accommodate them.

As Hodge has pointed out, the ceilings over the flank peristyle and porches were apparently constructed to be as high as possible.¹³⁶ Because of their high position, the top surfaces of the coffer grids and lids would have obstructed the passage of the wooden rafters and have had to be trimmed on their outer edges, closest to the blocks of the geison, in order to let the rafters pass over them (Fig. 24). That the coffer grids were in fact trimmed is shown by one fragment which has a beveled end (Pl. 48:b). The outermost lids must also have been trimmed.

The ceilings of the pronaos and opisthodomos were probably also of marble. The beams of the pronaos would have had a span of *ca.* 2.33 m., and those of the opisthodomos *ca.* 2.78 m. There were probably six beams and five intervals over each chamber, whether the spacing was similar to the ceiling of the flank peristyle, 0.96 m., or that of the porches, *ca.* 0.996 m. At present there is no evidence for the dimensions of the beams or ceiling coffer grids and lids, and no fragments can be assigned there. It is possible that a third system was used, with dimensions different from the ceilings of the porches and flank peristyles. The ceiling beams of the cella had a span of 5.17 m., and the ceiling and beams were probably made of wood, as that was the usual practice in the 5th century B.C.

CHRONOLOGY

PREVIOUS DATING OF THE TEMPLE

Because the sanctuary of Nemesis has not yet been fully excavated, there is no ceramic evidence which would help date the temple. Nor can we turn to specific literary or epigraphic testimony for a precise date. The temple therefore may be dated only by an assessment of its style and techniques of construction in relation to those of other, more securely dated buildings. In 1939, Dinsmoor suggested the date 436–432 B.C., which has been widely quoted and accepted.¹³⁷ This date was based on assumptions about the historical context of the temple and on its attribution, together with three other temples, to one architect's "hand". Dinsmoor attributed the Hephaisteion and the Temple of Ares in the Athenian Agora, the Temple of Poseidon at Sounion, and the Temple of Nemesis to one architect, whom he named the "Theseum Architect" on the analogy of Beazley's practice of inventing names when attributing vases to particular vase-painters.

Dinsmoor derived the date of 436–432 in the following way. He had dated the beginning of construction of the earliest of the four temples, the Hephaisteion, to *ca.* 450 on archaeological grounds, and that date provided him with a *terminus post quem* for the series of temples. Since he thought it unlikely that temples would be built during the Peloponnesian War, he took 431 as his *terminus ante quem* for the dates of all the temples. The intervening years were then divided into the following four periods of construction:

¹³⁶ Hodge, *WGR*, pp. 114–115. Cf. the remarks of Wyatt and Edmonson, pp. 140–141.

¹³⁷ For dates, W. B. Dinsmoor, "Archaeology and Astronomy," *ProcPhilSoc* 80, 1939 (pp. 95–173), pp. 152, 163–165; for dates and discussion of the architect, *idem*, "Ares," p. 47, repeated in *Observations* (footnote 20 above), pp. 153–155, and in *AAG*³, pp. 181–182.

449–444 Hephaisteion

444–440 Temple of Poseidon

440–436 Temple of Ares

436–432 Temple of Nemesis

The Temple of Nemesis was placed last in the series partly because of certain similarities to the Parthenon, finished (except for its pedimental sculpture) in 438, and partly because Dinsmoor believed it was left unfinished owing to the outbreak of the War.¹³⁸ This schematic sequence is suspect because each building takes the same amount of time for construction, and each is finished before the next is begun.

Dinsmoor's absolute dating for the beginning of the Hephaisteion should be adjusted in view of more recent studies of the building. The date of *ca.* 450 for its beginning (which had been based on ceramic evidence excavated in the foundations and his correlations between the ancient and the Julio-Claudian calendars) has been revised by Wyatt and Edmonson on the basis of recent studies of the style of the sculptural decoration on the Hephaisteion and of the profiles of its moldings (especially in the upper courses) and their own study of the masons' marks used on the ceiling coffers, all of which indicate a longer period of construction than was previously thought, beginning *ca.* 460 and lasting until the 420's.¹³⁹ The cult statue was added *ca.* 415 (*IG I³*, 472). Plutarch's comment on the speedy completion of the new construction on the Akropolis during Perikles' lifetime emphasizes how unusual such expeditious construction was (*Per.* 13.1–3). The history of construction of the Hephaisteion, a long one over more than forty years, was normal. This fact raises doubts about the rapid

¹³⁸ Dinsmoor, "Archaeology and Astronomy" (footnote 137 above), pp. 127, 165. He expressed reservations about the date:

It would also be possible to assign the temple to a slightly later period, about 420 B.C., which might well be regarded as more suitable for the hesitant introduction of a new building material [conglomerate] which did not become customary until the fourth century, and for the sculptural style of certain fragments of relief from the pedestal of the cult statue; the known career of the sculptor of the statue, Agoracritus the pupil of Pheidias, could fit either period, and the incompleteness of the temple could be attributed to the disaster at Syracuse as well as to the outbreak of war. In short, we must scan every date within a quarter of a century, 438–413 B.C. (p. 127).

He then calculated the date of the temple by reckoning the day of the festival of Nemesis, the Nemeseia, because he assumed that the axis for the temple was laid out on the goddess' birthday, in the direction of the rising sun. The date of the festival is not actually known but is supposed to be the same as the Genesia. The ancient date of the Genesia was then correlated with the Julio-Claudian calendar; Dinsmoor found that the date 425 would work well with the axis of the sun at the appropriate time of year, but he seemed to feel that the political conditions in Attica at the time were not suitable and so preferred 436. The precise dates given for the four Attic temples are all derived by correlating general stylistic dates with such calendric calculations. Although these calculations and methods have not been generally followed by students of architecture, religion, or the Athenian calendar, the precise dates derived from them have been widely accepted.

¹³⁹ Wyatt and Edmonson, pp. 165–167, with references; for sculpture, Ridgway, pp. 28–30, 88; S. von Bockelberg dates the frieze to 430–425 B.C. in "Die Friese des Hephaisteion," *AntP* 18, 1979, pp. 23–50, reviewed by E. B. Harrison, *AJA* 85, 1981, pp. 232–234; E. B. Harrison, "The Architectural Sculptures of the So-called Theseum," abstract of paper in *Greece and Italy in the Classical World: Acta of the Eleventh International Congress of Classical Archaeology* (London, 1978), London 1979, p. 220; *eadem*, "Style Phases in Greek Sculpture," *Twelfth International Congress of Classical Archaeology* (Athens, 1983), Athens 1983, pp. 16–17; for moldings, Shoe, pp. 108, 128, pls. LII:21, 22; LXI:1, 2.

completion and neat sequence of construction proposed by Dinsmoor for the other three temples in this group.

The *terminus ante quem* of 431, the beginning of the Peloponnesian War, should be lowered to *ca.* 415, in view of the widespread building activity in sanctuaries in Athens and Attica during the period from about 425 to about 415, which will be discussed below. When the initial efforts of the Archidamian War were over and Athens was in a more secure position, evidently funds were then available for building projects.

The attribution of the four Attic temples to the “hand” of one architect was a crucial part of Dinsmoor’s chronology. In two brief discussions, he made this attribution on the basis of eight “characteristics” which he thought indicated one mind at work.¹⁴⁰ These characteristics, and the buildings which exhibit them, are as follows:

1. Slender column proportions: all four temples.¹⁴¹
2. Adjustment of the column placement so that the antae of the pronaos are aligned with the third column (from the front) on the flank: all four temples.
3. A cella without an internal colonnade: original plan of Hephaisteion (but not as actually constructed); Temple of Poseidon; Temple of Nemesis; not known for Temple of Ares.
4. Lowest step of darker stone: Hephaisteion (poros); Temple of Nemesis (darker local stone).
5. Doric columns with sixteen flutes: Temple of Poseidon.
6. Height of frieze and epistyle identical: Hephaisteion (on east front only); Temple of Poseidon; not known for Temple of Ares.¹⁴²
7. Sima with Corinthian ovolo: Hephaisteion; not known for Temple of Ares.¹⁴³
8. Interest in carved ornament, exemplified by Ionic crowning moldings for architrave: Hephaisteion; Temple of Poseidon.

¹⁴⁰ See footnote 137 above.

¹⁴¹ Height of column measured in lower diameters (computed from Dinsmoor’s figures in *AAG*³, pp. 337–339; his own computations in the table opposite p. 340 are rounded off):

Olympia, Temple of Zeus	4.635, 4.719	Temple of Ares	<i>ca.</i> 5.7045
Bassai, Temple of Apollo	5.13, 5.31	Delos, Temple of Athenians	5.7125
Propylaia, west wing	5.4483	Temple of Nemesis	5.7422
Parthenon	5.476	Sounion, Temple of Poseidon	5.7756
Hephaisteion	5.611	Nemea, Temple of Zeus	6.3607
Propylaia, central building	5.6636		

¹⁴² Bouras (p. 180) gives the following set of proportions:

<i>H. of epistyle : H. of frieze</i>			
Hephaisteion	1.010	Brauron, Stoa	0.930
Temple of Poseidon	1.008	Delos, Temple of the Athenians	0.920
Parthenon	1.000	Nemea, Temple of Zeus	0.909
[Temple of Ares	1.000]	Tegea, Temple of Athena Alea	0.880
Propylaia	0.986	Stratos, Temple of Zeus	0.870
Temple of Nemesis	0.982		

This list shows that the only building with a epistyle and frieze of identical height is the Parthenon. (The figure for the Temple of Ares is an estimate based on incomplete pieces.)

¹⁴³ The design of the flank sima of the Temple of Poseidon, pierced and with a flat profile (unique in marble,

Of the eight characteristics noted above, one which all four buildings certainly share is that the proportions of their columns are more slender than those of the Parthenon; but this is true of the columns on *all* temples built after the Parthenon, except the Temple of Apollo at Bassai (supposedly designed by the architect responsible for the Parthenon).

The second characteristic which all four share, a ground plan with the antae of the pronaos aligned with the third column of the flanks, is a design which allows the frieze across the pronaos to be extended across the space between the cella and the outer colonnade and to join the back of the frieze of the outer columns. The principal advantage of this arrangement, found also in the Temple of Apollo at Bassai, and already well established in Western Greece, is the moderately increased space for sculptural decoration. The Classical temple at Kalapodi in Boiotia, dated in its early stages to *ca.* 480–460, is the earliest Doric temple in mainland Greece with this ground plan.¹⁴⁴

The use of an extended frieze across the pronaos in the Hephaisteion is distinctive in comparison with its immediate predecessor and with its contemporary, the Temple of Zeus at Olympia and the Parthenon. The design is related primarily to the size of the building and the desired extent of a sculptured frieze. In the Temple of Zeus at Olympia, the Doric frieze over the pronaos and opisthodomos has sculptured metopes. The Parthenon has a continuous Ionic frieze around the outside of the whole cella. The practical advantage of the arrangement in the four Attic temples compared by Dinsmoor is that it provides space for a continuous sculptured frieze but one of a limited extent. In the Temple of Poseidon, the frieze was extended around the whole front pteroma.¹⁴⁵ This design provides a compromise between the extremes of an interior with no sculpture and one with lavish sculpture. It is not surprising that once this convenient, modest arrangement was invented, it was used again in other buildings. In the Temple of Nemesis, too, the frieze was extended to the outer peristyle; it is not certain whether it was left blank or had triglyphs.

The attention to the adornment of the pteroma given by the inclusion of a sculptured frieze reflects an increased interest in this part of the building and emphasis on it. This interest, which developed much further in temples and tholoi of the 4th century B.C., did not begin with the Hephaisteion. The earliest example in Athens may be the Old Temple of Athena on the Akropolis, which probably had a continuous (Ionic) frieze across the pronaos.¹⁴⁶ Another early example is the Great Temple of Apollo on Delos (*ca.* 475), which

and paralleled only in types used in Sicily and Magna Graecia), was re-used on the Temple of Ares when it was reassembled in the Athenian Agora. Dinsmoor ("Ares," p. 47) mistakenly attributed part of the Hephaisteion sima to the Temple of Ares, but see Dinsmoor, Jr., "Poseidon," pp. 226, 233–237. The raking sima of the Temple of Poseidon is "archaizing" and resembles the sima of the Temple of Aphaia at Aegina (*ibid.*, pp. 221–223).

¹⁴⁴ R. C. S. Felsch *et al.*, "Apollon und Artemis oder Artemis und Apollon? Bericht von den Grabungen im neu entdeckten Heiligtum bei Kalapodi 1973–1977," *AA (JdI)* 95 (1980) (pp. 38–115), pp. 99, 107–108.

¹⁴⁵ A. Delivorrias, "Poseidon-Tempel auf Kap Sunion," *AM* 84, 1969 (pp. 127–142), pp. 137–142.

¹⁴⁶ F. Brommer, *Der Parthenon Fries*, Mainz am Rhein 1977, p. 152; Coulton, "Periklean Doric," p. 43; Ridgway, p. 30; A. F. Stewart, *Greek Sculpture: An Exploration*, forthcoming. The Archaic Telesterion at Eleusis, contemporary with the Old Temple of Athena, had Ionic columns in its interior whose bases (*σπείραι*) are listed in the accounts of the epistatai at Eleusis for the years 408/7 and 407/6 (*IG* I³, 386, line 105; 387, line 115); for discussion see T. Leslie Shear, Jr., "The Demolished Temple at Eleusis," *Hesperia*,

had a triglyph-and-metope frieze around the entire cella, a precedent, in the Doric order, for the continuous Ionic frieze around the cella of the Parthenon.¹⁴⁷ Even more innovative was the inclusion of a triglyph-and-metope frieze around the interior of the pronaos and opisthodomos.¹⁴⁸ Here the emphasis on the interior is unequivocal, even though the metopes of the frieze were not sculptured. The articulation of the inner peristyle with friezes is not, then, a sudden invention in the Hephaisteion but a further development within a larger stylistic trend.

With regard to Dinsmoor's third characteristic, the absence of an interior colonnade should not be surprising in buildings much smaller than the Parthenon. In a comparison of the size, interior configuration, and location of Doric buildings, Hodge has shown that the presence of an interior colonnade seems to be a regional preference, perhaps based on the availability of suitable timbers for large spans.¹⁴⁹ Hodge's chart (on his p. 39) shows that generally in Western Greece interior colonnades were omitted, while in mainland Greece, they were usually included until the mid-5th century.¹⁵⁰ With the exception of the 4th-century Temple of Apollo at Delphi, notable for its adherence to the plan of its Archaic predecessor, the Parthenon and the Hephaisteion are the last rectangular temples with free-standing interior colonnades until the end of the 4th century B.C., when the Temple of Zeus at Nemea was built.¹⁵¹ In the second half of the 5th century and throughout the 4th century,

Suppl. XX, *Studies in Athenian Architecture, Sculpture and Topography*, Princeton 1982 (pp. 128–140), p. 135. The combination of Ionic and Doric features is certainly attested in Athens as early as 470–460, in the construction of the Stoa Poikile in the Agora; there Ionic columns were used in the interior, while the exterior was Doric (T. L. Shear, Jr., "The Athenian Agora: Excavations of 1980–1982," *Hesperia* 53, 1984 [pp. 1–57], pp. 5–19). Ionic columns are also reconstructed in the opisthodomos of the Parthenon.

¹⁴⁷ Courby, *Délos XII*, pp. 70–74; R. Vallois, *L'architecture hellénique et hellénistique à Délos*, II, *Grammaire historique de l'architecture délienne*, Paris 1966, pp. 215–216; the Treasury of the Athenians at Delphi (ca. 480 B.C.) and the Late Archaic Temple of Artemis on Paros (ca. 475 B.C.), both small, non-peripteral buildings, distyle in antis, also had continuous Doric friezes around their exteriors (for the Temple of Artemis: M. Schuller, "Die dorische Architektur der Kykladen in spätarchaischer Zeit," *JdI* 100, 1985 [pp. 319–398], p. 397). Coulton has noted the many aspects of the design of the Great Temple of Apollo which seem to follow Western Greek precedents, and this use of the frieze is one of them ("Periklean Doric," p. 44). Dinsmoor suggested that the temple was not built above the level of the krepidoma until the 3rd century, but the profiles of the capitals of the pronaos and the details of the entablature indicate that construction on the temple up to that level continued into the third quarter of the 5th century (Dinsmoor, *AAG*³, p. 184, note 5, and p. 221; Coulton, "Periklean Doric"; Kalpaxis, p. 142).

¹⁴⁸ Courby, *Délos XII*, pp. 79–82; Vallois, *op. cit.*, pp. 215–216. A precedent for the triglyph-and-metope frieze in the interiors is found in the early Archaic (ca. 575) Temple of Aphaia on Aigina, tetrastyle prostyle, which had an inner Doric frieze carried back from the colonnade, over the antae, and across the door wall (Schwandner, *op. cit.* [footnote 27 above], figs. 59, 62, and pp. 93–94, 98).

¹⁴⁹ Hodge, *WGR*, pp. 38–44; Hodge concludes that Sicilian architects knew the truss, but see now R. Meiggs, *Trees and Timber in the Ancient Mediterranean World*, Oxford 1982, pp. 176–203, 423–457, 462–466.

¹⁵⁰ Within the sphere of mainland Greece, the two exceptions are the Late Archaic Kardaki temple on Corfu and the Early Classical Great Temple of Apollo on Delos: the interior colonnade is omitted in both, and both are subject in other details of design to Western Greek influence. The architect of the Temple of Poseidon at Sounion may have omitted the interior colonnade with knowledge of the Western Greek practice, just as the designs of the flank and raking simas for the temple show inspiration from outside Athens. (For the Kardaki temple, see W. B. Dinsmoor, Jr., "The Kardaki Temple Re-examined," *AM* 88, 1973, pp. 165–175.)

¹⁵¹ For a study of the interiors of the temples at Tegea, Nemea, and Stratos, see N. Norman, "The 'Ionic'

adequate timbers were obviously available for wide spans, and this system was preferred to the manufacture of a complete, double row of freestanding columns for the interiors of temples. The omission of an interior colonnade, however, is not peculiar to the Temple of Poseidon and the Temple of Nemesis.

Three other characteristics of the "Theseum Architect" listed by Dinsmoor are shared by only two of the four temples in each instance, but even they are hardly unique to these buildings: darker stone for the lowest step is not restricted to the Hephaisteion and Temple of Nemesis, as noted above (p. 145); nor is interest in carved ornament or the use of Ionic moldings in Doric buildings. And the last two characteristics, the sixteen-fluted exterior column at Sounion and the Corinthian sima on the Hephaisteion, are each unique in this period.

Upon closer examination, the similarities which Dinsmoor observes in the four temples may be more accurately described as stylistic trends characteristic of 5th-century temples in general, and some of these arrangements might have depended directly on the size of the temples or the amount of decoration planned for them in accordance with these trends. The builders of the Attic temples had a clear awareness of panhellenic precedents. Coulton has argued convincingly that two of the sources of inspiration for many of the new features of the "Periklean Doric" style were Western Greece and the Cyclades; with so much construction going on in the second half of the 5th century, masons and architects were in high demand, and it is very likely that they traveled widely, just as sculptors did.¹⁵² The similarities in the Attic temples suggested by Dinsmoor which survive careful scrutiny do not provide sufficient criteria for assigning them to the "hand" of a single architect.

THE DATE OF CONSTRUCTION

The Archaeological Evidence

For the date of the Temple of Nemesis, we are left with its style and proportions as criteria. The date of the Parthenon, 447–438, should provide a *terminus post quem*, since some details of the Temple of Nemesis such as the form of the sima, the decoration on the coffer lids, and the anta capitals seem to have been inspired by those of the Parthenon. These reminiscent forms do not require that the Temple of Nemesis be dated immediately after the completion of the Parthenon, however, as is shown by the similarly inspired details in the Temple of the Athenians on Delos and the temple at Segesta.

There are certain signs of economy in the construction of the Temple of Nemesis. The building as a whole is quite small in comparison with other peripteral Doric temples; it is the smallest we know until the Metroön at Olympia, which was built a century later. Local marble was chosen for it, which reduced the cost of transportation. An even cheaper conglomerate stone was used as packing in the foundations. Costly iron T-clamps were used only in the upper parts of the building, in the corners of the second step, and in the corners

Cella: A Preliminary Study of Fourth Century B.C. Temple Architecture," diss. University of Michigan, 1980.

¹⁵² Coulton, "Periklean Doric," p. 44; the "international" character of building projects due to traveling architects and trained crews, as attested in literary and epigraphical evidence, is emphasized by Burford ("Economics," pp. 21–34).

of the toichobate. In order to compensate for the lack of clamps in the foundations and steps, the blocks were fitted into intricate polygonal patterns, which provided solid joints. Dowels were used sparingly. The orthostates were probably clamped with wood.

The temple was left unfinished when funds ran out: the fluting of the columns was not finished, there are still lifting bosses on the orthostates, and the steps and stylobate are not smoothed (see above, pp. 155–156). Nonetheless, the moldings and ceiling coffers were painted, and the commission for the cult statue, with its elaborate base, was given to a famous sculptor, Agorakritos, active *ca.* 430–420.¹⁵³

The details and proportions of the capitals, the columns, and the entablature all indicate that the Temple of Nemesis was built after the Propylaia, as an early contemporary of the Stoa at Brauron and the Temple of the Athenians on Delos. This conclusion is suggested also by the profiles of the moldings, which in most instances may be dated to the 420's.¹⁵⁴ Although of course stylistic evidence provides only a range of dates rather than a single one, the collective evidence indicates that the Temple of Nemesis was built *ca.* 430–420.

Construction in Sanctuaries during the Peloponnesian War

The date proposed for the Temple of Nemesis was during a time of considerable building activity in Athens and Attica. The accumulating archaeological evidence shows that construction in sanctuaries continued throughout the 5th century in Athens and Attica, certainly after *ca.* 425, and even during the still more difficult conditions of the later part of the Peloponnesian War, after the failed invasion of Sicily and the Spartan occupation of Dekeleia.¹⁵⁵ In addition, the archaeological record shows that at this time the Athenians gave renewed attention to cults and sanctuaries which had been neglected and made provisions for cults that were new to Athens. The new temple at Rhamnous would have been constructed in this context.

Religious feeling (probably with an admixture of practical and political concerns) was surely a primary motive for dedications, embellishment of temples, and additions to sanctuaries. The effects of the Plague on the religious feelings of the people who survived it should not be underestimated.¹⁵⁶ By the summer of 431, the city of Athens was so full of people that

¹⁵³ Despina in 1971 dated the statue of Nemesis to *ca.* 430, with work on the frieze of the base continuing down to *ca.* 420 B.C. The discrepancy of ten years in date (pointed out by Ridgway [pp. 172–173]) and the resulting technical difficulties for the installation of the statue are addressed by Petrakos («Προβλήματα τῆς βάσης τοῦ ἀγάλματος τῆς Νεμεσέως», in *Archaische und klassische griechische Plastik (Akten des internationalen Kolloquiums vom 22.–25. April 1985 in Athen)*, II, *Klassische griechische Plastik*, Mainz am Rhein 1986 [pp. 88–107], pp. 90–91, 107); in a discussion following the paper, Despina indicates willingness to date the installation of both statue and base to a single date within the years *ca.* 430–420 B.C. (p. 107).

¹⁵⁴ For the dating of the capitals, columns, and entablature of the Temple of Nemesis, see above, pp. 160–164, 170. All moldings except the hawkbeak of the pronaos epikranitis are dated to the 420's: above, *passim*; for illustrations, Shoe, pls. XXI:4, 25; LII:16; LVII:10; LIII:25.

¹⁵⁵ I presented some of the information included here to the annual meeting of the College Art Association, Los Angeles, 1985, in a paper entitled “Religious Architecture during the Peloponnesian War” as part of a session chaired by A. F. Stewart on the arts during the Peloponnesian War. I am grateful to the chairman, the members of the panel, and the audience for helpful discussion of the issues.

¹⁵⁶ J. McK. Camp II makes this point about drought, famine, and plagues in general and assembles a large body of supporting evidence (“A Drought in the Late Eighth Century B.C.,” *Hesperia* 48, 1979 [pp. 397–411],

even the sanctuaries, hero-shrines, and the Pelargikon were completely filled with refugees; only the Akropolis and the City Eleusinion (and any other sanctuary which could be securely closed) remained inviolate (Thucydides, II.17.1–2). Then in the next summer, during the worst outbreak of the Plague, the temples were filled with corpses, and burial customs were not just neglected but abused when people would dump bodies on funeral pyres prepared for others (Thucydides, II.52.3–4).¹⁵⁷ After these and other horrors of the repeated bouts of the Plague and the lawlessness and impiety so vividly described by Thucydides, many Athenians must have felt a need to return with devotion to traditional religious customs, or search for new ones, with the hope that they would be effective. The uncertainties brought by the war and Spartan raids could only have added impetus to this feeling.

Furthermore, Thucydides reports that in addition to outbreaks of the Plague in 427, Athens suffered a series of strong earthquakes, unusual phenomena for the city (III.87, 89). The Athenian fortification on Atalante near Boiotia was destroyed by giant *tsunamis*. The earthquake was so strong in the city that it made the upper north side of the Parthenon shift to the north by 2.5 cm., and it probably caused damage elsewhere.¹⁵⁸ It is hard to imagine the effects of such a dreadful and unexpected event on the people, already in distress from the Plague.

Appeals to the gods and new provisions to encourage their presence and help are clearly evident in the sanctuaries. The best known and best preserved dedication to a god in connection with the Plague is the Temple of Apollo Epikourios at Bassai (Pausanias, VIII.41.8–9).¹⁵⁹ Apollo is already well established as the bringer and averter of plague in the *Iliad*, and numerous references attest to attention to him in that role during this outbreak.¹⁶⁰ Athenian appeals to him are reflected in Pausanias' remark about a statue of Apollo Alexikakos in the Agora, which he saw in front of the Temple of Apollo Patroös (I.3.4): Pausanias associates its dedication with a consultation of Apollo at Delphi about the Plague.¹⁶¹

pp. 403–404); Mikalson discusses the renewed interest in religious affairs after the Plague (“Religion and Plague”).

¹⁵⁷ Gomme notes the traditional prohibition against deaths inside a sanctuary (p. 159).

¹⁵⁸ M. Korres and C. Bouras, *Μελέτη Ἀποκαταστάσεως τοῦ Παρθενῶνος*, Athens 1983, pp. 328–330.

¹⁵⁹ Cooper (footnote 33 above), pp. 10–28; *idem*, “Arkadian Epikouroi and the Date of the Temple at Bassai,” abstract of paper in *Greece and Italy in the Classical World: Acta of the Eleventh International Congress of Classical Archaeology* (London, 1978), London 1979, pp. 210–211.

¹⁶⁰ Camp (footnote 156 above).

¹⁶¹ H. W. Parke and D. E. W. Wormell doubt the association of this statue with the Plague of the 420's because of the pro-Spartan politics in Delphi at the time and because of Pausanias' attribution of the sculpture to Kalamis, whose work is generally dated earlier in the 5th century (*The Delphic Oracle* I, Oxford 1956, p. 190). Harrison, however, has suggested that Kalamis may have still been working as late as *ca.* 430 on the friezes of the Hephaisteion (“Classical Maiden,” pp. 51–52). Thucydides states that supplications in sanctuaries were made and oracles were consulted at the outbreak of the Plague but that finally the people, overcome by the disaster, ceased such activities (II.47.4). G. Huxley has noted evidence for a probable consultation of an oracle about the Plague in Crete by Nikias (“Nikias, Crete and the Plague,” *GRBS* 10, 1969, pp. 235–239). Other offerings in connection with the (Athenian) Plague noted by Pausanias include a bronze goat offered by the people of Kleonai to Apollo at Delphi (X.11.5), a temple and statue of Apollo in the agora at Elis (VI.4.6), and a sanctuary at Troizen of Pan Lyterios, who revealed in dreams the cure for the Plague (II.32.6).

The Athenians took decisive action to win Apollo over with the purification of Delos in 426/5, by transferring all old burials to Rheneia and by reinstating and expanding the Delian festival in honor of Apollo and Artemis (Thucydides, III.104). Diodoros (perhaps following Ephoros) explicitly states that the Plague was the motivation for the purification (XII.58.6–7).¹⁶² The Athenians' new temple to Apollo on Delos was begun at this time, a temple with many similarities to the Parthenon in details, proportions, and quality, although closer in size to the Temple of Nemesis; it was probably dedicated in 417 by Nicias.¹⁶³ The purification, the restoration of the festival for Apollo and Artemis, and the construction of a new temple in a sanctuary outside Athens and Attica illustrate the intense interest in religious affairs soon after the Plague ended. This must have been part of the efforts to avert a new outbreak, even if other reasons also attended the activity.¹⁶⁴

The end of the Plague in 426 after nearly five years was followed by the end of the annual Spartan raids, when the Spartan troops decided to turn back at the Isthmus after more earthquakes (Thucydides, III.89). Hanson has shown that the Spartan raids on the Attic countryside were not so devastating to crops, vineyards, and orchards as is usually supposed, and the literary and epigraphical evidence he cites presents a picture of relative prosperity during the late 420's.¹⁶⁵ Several areas, including the Marathonian Tetrapolis, escaped the most destructive raid (the second one of 430) altogether. Temples and sanctuaries should have been safe from the Spartans in any case, as we have no evidence that they violated traditional prohibitions against desecration of a sanctuary.¹⁶⁶ That the Attic sanctuaries were still receiving dedications is shown by Demothenes' dedication of 300 panoplies

¹⁶² Mikalson suggests that one motive for the Athenian attention to Delos was to raise the cult there to be a rival of Delphi, which was pro-Spartan ("Religion and Plague," pp. 221–222); Parke and Wormell suggest that the Athenians suspected pro-Spartan leanings on the part of the Delians (*op. cit.*, pp. 194–195); Gomme sees the purification as a thanksgiving for the end of the Plague and an opportunity to oversee an international festival, as the others were under the control of Peloponnesians (p. 414).

¹⁶³ Courby, *Délos XII*, pp. 205, 220–225; for a careful analysis of proportions, see D. Mertens, *Der Tempel von Segesta*, Mainz am Rhein 1984, pp. 220–228. The dimensions of the stylobate of the temple (hexastyle amphiprostyle) are restored to 9.686 × 17.014 m. (Courby, p. 110); cf. the Temple of Nemesis, 9.96 × 21.431 m. In addition to the influence of the Parthenon noted by Courby and Mertens, the use of windows in the door wall may also have been inspired by the windows in the pronaos wall of the Parthenon, recently discovered by M. Korres ("Der Pronaos und die Fenster des Parthenon," in *Parthenon-Kongress Basel*, Mainz am Rhein 1984, pp. 47–54).

¹⁶⁴ *IG I³*, 137 (dated ca. 421–416) also refers to cult activity for Apollo.

¹⁶⁵ V. Hanson, *Warfare and Agriculture in Classical Greece (Biblioteca di Studi Antichi 40)*, Pisa 1983, pp. 111–127. As Hanson notes (p. 116), of especial interest is Thucydides' remark that the raids of the early 420's had not prevented the Athenians from making "full use of the land" during the rest of the year (VII.27.4).

¹⁶⁶ Hanson points out that sacred groves were intentionally bypassed by the Spartans (*op. cit.*, pp. 121–122); Linders argues that even temple furniture and votives would have been safe and notes that the only instance Thucydides records of the pillaging of a shrine (IV.97–98) was done by barbarians; it was the Athenians who violated this custom at Delion in 424/3, although the violation consisted of profaning the temple of Apollo and drinking the water from a sacred spring, not stealing any valuable items (*Other Gods*, p. 18 and p. 84, note 46). There is an implied threat of Peloponnesians "borrowing" from Delphi and Olympia in Thucydides, I.121.3, 143.1. For Spartan scrupulousness in war, see M. D. Goodman and A. J. Holladay, "Religious Scruples in Ancient Warfare," *CQ* 36, 1986 (pp. 151–171), pp. 152–160.

after his victory at Idomene (426/5, Thucydides, III.114.1).¹⁶⁷ The remarkable resilience of the Athenian economy in the mid-420's and the cessation of Spartan raids after the capture of the Spartans on Sphakteria would have provided demesmen with a welcome opportunity to refurbish the local sanctuaries and improve them with new construction.

In the city of Athens, major projects on the Akropolis were resumed with the completion of the present Temple of Athena Nike (whose foundations had already been laid in the 430's) during the 420's.¹⁶⁸ Attention to Athena Nike was especially appropriate after the Athenian victory at Pylos. The Erechtheion, which housed so many ancient and local cults, was started in the 420's, and construction continued during the latter part of the war.¹⁶⁹

By 420, the cult of Asklepios was brought to Athens, and a new sanctuary for him was built in a prominent location on the South Slope of the Akropolis by Telemachos, a private donor.¹⁷⁰ While it was under construction, the sacred snakes (or the god himself) were hosted by the playwright Sophokles and by Demeter and Persephone in the City Eleusinion, just to the north of the Akropolis.¹⁷¹ This new cult was introduced at a time when the effects of the Plague were all too fresh for the Athenians. The Peace of Nikias was the first opportunity the Athenians had had for amicable relations with the Epidaurians, whom Athens had unsuccessfully attacked in 430 (Thucydides, II.56.4).

The "First Fruits" decree of ca. 422, which establishes the procedure for offerings to Demeter and Persephone at Eleusis, contains a rider, moved by Lampon, calling for supervision of the Pelargikon, the old lower wall of the Akropolis (*IG I³*, 78).¹⁷² Evidently people

¹⁶⁷ Gomme notes that the panoplies were a personal gift to Demosthenes from the Akarnanians and Amphilocheians (p. 428).

¹⁶⁸ For the date of the foundations, M. M. Miles, "The Date of the Temple on the Ilissos River," *Hesperia* 49, 1980 (pp. 309–325), pp. 323–325; for discussions of the date of the temple, with bibliography, see H. Mattingly, "The Athena Nike Temple Reconsidered," *AJA* 86, 1982, pp. 381–385; B. Wesenberg, "Zur Baugeschichte des Niketempels," *JdI* 96, 1981, pp. 28–54; W. Childs, "In Defense of an Early Date for the Frieze of the Temple on the Ilissos," *AM* 100, 1985 (pp. 207–251), pp. 208–210, 249–251; for the date of the parapet, see summary by Harrison, "Classical Maiden," p. 47, note 35. A thorough study by I. Mark of the temple and its date is forthcoming.

¹⁶⁹ J. M. Paton and G. P. Stevens, *The Erechtheum*, Cambridge, Mass. 1927, pp. 452–456.

¹⁷⁰ Travlos, *Pictorial Dictionary*, pp. 127–128, with bibliography; L. Beschi, "Il Monumento di Telemachos, Fondatore dell'Asklepieion ateniese," *ASAtene*, 45–46 (n.s. 29–30), 1967–1968 (1969), pp. 381–436; B. Holtzman, *LIMC*, s.v. Asklepios, no. 394 and pp. 889–891; *SEG XXXII*, 266. For a study of the sanctuary in the 4th century B.C., see R. Townsend, "Aspects of Athenian Architectural Activity in the Second Half of the Fourth Century B.C.," diss. University of North Carolina, 1982, pp. 42–89.

¹⁷¹ Eleusinion: *IG II²*, 4960, lines 4–8; with Sophokles: Philostratus Junior, *Im.*, 13; Plutarch, *Num.*, 4, 9 and *Moralia*, 1103B; *Etymologicum Magnum*, s.v. *Δεξιων*; the testimonia are collected in E. and L. Edelstein, *Asclepius II*, Baltimore 1945, nos. 590, 590a, 590b, 591, 720, pp. 326–327, 374–375. For the relationship between Asklepios and Demeter, see C. Benedum, "Asklepios und Demeter," *JdI* 101, 1986, pp. 137–157.

¹⁷² For this date, see Meiggs and Lewis, no. 73, pp. 217–223; *SEG XXXIII*, 6; discussion of Pelargikon, Travlos, *Pictorial Dictionary*, pp. 52–53, with bibliography, p. 55; H. Mattingly, "Athens, Delphi and Eleusis in the late 420's," *Proceedings of the African Classical Associations* 9, 1966 (pp. 61–76), pp. 66–68; G. Nenci, "Il 'Pelargico' (*Thuc.*, II. 17 1–3; *Parke-Wormell, Delphic Oracle*, II n. 1) e la 'zona di rispetto' nelle città greche arcaiche," in *ΑΠΙΡΧΑΙ. Nuove ricerche e studi sulla Magna Grecia e la Sicilia antica in onore di Paolo Enrico Arias*, Pisa 1982, pp. 35–43; J. Camp, "Water and the Pelargikon," in *GRBM*, X, *Studies Presented to Sterling Dow*, Durham, North Carolina 1984, pp. 37–41.

had been setting up unauthorized altars and taking stones and soil from the old wall, and Lampon sought to prevent this kind of activity. The Basileus was instructed to delimit the sanctuaries, and there were stiff penalties for infractions. If the date of *ca.* 422 is correct, the primary concern of the rider, the setting up of unauthorized altars, fits well with the general activity in other sanctuaries of this period. After Thucydides mentions the violations of the boundaries of the Pelargikon at the beginning of the Archidamian war, he then discusses an old oracle predicting dire consequences for not leaving the Pelargikon as it was (II.17.1–2).

The same concern with establishing the boundaries of a sanctuary, tidying it, and administering it properly is clear in the regulations for the sanctuary of Kodros, Neleus, and Basile (*IG I³*, 84), dated to 418/7.¹⁷³ The arrangements include fencing the temenos, selling mud from the drainage ditches, and leasing the temenos for a grove of 200 olive trees. The exact location of the sanctuary is uncertain, but it is likely to have been just outside the city walls in the area southwest of the Olympieion.¹⁷⁴

Beginning *ca.* 430, several small sanctuaries in the Agora were restored. In each instance, the shrine had an earlier history of use and was refurbished and fenced in just after 430. While there was no indication of an earlier phase of construction around the outcrop of bedrock fenced in by the Crossroads Enclosure in the northwest corner of the Agora, there was a considerable quantity of dedicatory material from the mid-5th century found there; the excavator dates the enclosure itself to *ca.* 430.¹⁷⁵ The Triangular Shrine in the southwest part of the Agora has a similar history, with clear evidence of cult activity as early as the 7th century B.C. and a wall added after *ca.* 430.¹⁷⁶ The peribolos wall of the Altar of the Twelve Gods was also reconstructed *ca.* 430–420.¹⁷⁷ At this same time, there were repairs to and modifications of the Altar of Aphrodite Ourania, which was first built *ca.* 500.¹⁷⁸

¹⁷³ R. Wycherley, "Neleion," *BSA* 55, 1960, pp. 60–66; F. Sokolowski, *Lois sacrées des cités grecques*, Paris 1969, no. 14, pp. 28–30; D. Behrend, *Attische Pachturkunden (Vestigia XII)*, Munich 1970, pp. 55–61; H. A. Shapiro, "The Attic Deity Basile," *ZPE* 63, 1986, pp. 134–136; *SEG XXXIII*, 14; for the importance of Kodros as a hero, see E. B. Harrison, "The Iconography of the Eponymous Heroes on the Parthenon and in the Agora," in *Greek Numismatics and Archaeology: Essays in Honor of Margaret Thompson*, Wetteren, Belgium 1979 (pp. 71–85), pp. 81–83.

¹⁷⁴ Cf. Travlos, *Pictorial Dictionary*, p. 332.

¹⁷⁵ T. L. Shear, Jr., "The Athenian Agora: Excavations of 1971," *Hesperia* 42, 1973 (pp. 121–179), pp. 126–134; *idem*, "The Athenian Agora: Excavations of 1972," *Hesperia* 42, 1973 (pp. 359–407), pp. 360–369; *Agora XIV*, pp. 121–123; H. A. Thompson, "Athens Faces Adversity," *Hesperia* 50, 1981 (pp. 343–355), pp. 346–348; Camp, pp. 78–82.

¹⁷⁶ G. V. Lalonde, "A Fifth Century Hieron Southwest of the Athenian Agora," *Hesperia* 37, 1968, pp. 123–133; *Agora XIV*, p. 120; Camp notes that the shape of the enclosure suggests that it might be a shrine of Hekate (p. 78).

¹⁷⁷ M. Crosby, "The Altar of the Twelve Gods in Athens," in *Hesperia*, Suppl. VIII, *Commemorative Studies in Honor of Theodore Leslie Shear*, [Princeton] 1941 (pp. 82–103), pp. 98–99; H. A. Thompson, "The Altar of Pity in the Athenian Agora," *Hesperia* 21, 1952 (pp. 47–82), p. 52; *Agora XIV*, pp. 129–136; Camp, pp. 40–42, 78.

¹⁷⁸ Shear, Jr. (footnote 146 above), pp. 24–33; Camp, pp. 57, 78; for discussion of a possible Roman copy of the cult statue, see Harrison, "Classical Maiden," pp. 50–51. For another hero shrine with a history similar to the shrines noted above, see G. Lalonde, "A Hero Shrine in the Athenian Agora," *Hesperia* 49, 1980, pp. 98–105.

The construction of other buildings in the Agora continued during this period. Up on the Kolonos hill overlooking the central area, the Temple of Hephaistos was completed and the cult images were installed by 416/5. The Stoa of Zeus Eleutherios and South Stoa I were built in the 420's, a monument to the Eponymous Heroes was set up, and later, after 415, the New Bouleuterion was built and porches were added to the Stoa Basileios.¹⁷⁹

At this same time, people resident in the outer communities of Attica were no less busily refurbishing sanctuaries. The Sanctuary of Artemis Brauronia, for example, received a new stoa with a dining complex *ca.* 425–417 B.C.¹⁸⁰ This cult (originally founded because of a plague) was closely connected with the city of Athens, with a subsidiary of the sanctuary on the Akropolis.¹⁸¹ The stoa is a complex building, with dining rooms behind a colonnade, but the full plan was never realized: the excavated remains include foundations for wings left unfinished which would have tripled the size of the complex as it was built.¹⁸²

At Sounion, the Propylon to the sanctuary of Poseidon and a new stoa were added *ca.* 420.¹⁸³ The Propylon was built of the same Agrileza marble as the Temple of Poseidon, and in many of its details it seems to have been inspired by the Propylaia to the Athenian Akropolis. The cult of Poseidon was also not just locally important, for funds belonging to Poseidon at Sounion are listed among the accounts of the Other Gods on the Akropolis.¹⁸⁴

In the mining town of Thorikos a new colonnaded building was constructed about this time, but its purpose is not obvious.¹⁸⁵ This unusual building, with a peripteral colonnade of seven by fourteen columns, has never been thoroughly excavated. Neither the excavations

¹⁷⁹ Stoa of Zeus: Thompson (footnote 22 above), pp. 39–55; *Agora XIV*, pp. 96–103; Camp (pp. 105–107) stresses that the Stoa of Zeus was actually a religious building, even though in the form of a stoa rather than a temple. South Stoa I: *Agora XIV*, pp. 76–78; Camp, pp. 122–126. Porches of Stoa Basileios: Shear, Jr. (footnote 52 above), pp. 250–252. Monument of the Eponymous Heroes: Shear, Jr. (footnote 22 above), pp. 203–222. New Bouleuterion: *Agora XIV*, pp. 31–34; G. Kuhn, “Das Neue Bouleuterion von Athen,” *AA (JdI 99)* 1984, pp. 17–26; Camp, pp. 90–91.

¹⁸⁰ Bouras, pp. 149–159; for the sanctuary generally, with bibliography, M. Hollinshead, “Against Iphigeneia’s Adyton in Three Mainland Temples,” *AJA* 89, 1985 (pp. 419–440), pp. 424–427, 432–435.

¹⁸¹ R. Rhodes and J. Dobbins, “The Sanctuary of Artemis Brauronia on the Athenian Akropolis,” *Hesperia* 48, 1979, pp. 325–341; T. Linders, *Studies in the Treasure Records of Artemis Brauronia Found in Athens*, Stockholm 1972, pp. 2–4, 70–73.

¹⁸² Bouras, pp. 17–18, 25–28 and *passim*, with figs. 4 and 5 on pp. 20–21; J. J. Coulton, *The Architectural Development of the Greek Stoa*, Oxford 1976, pp. 42–43, 226–227; Kalpaxis, p. 150.

¹⁸³ Gandy, chap. 8, pp. 53–56; Boersma, p. 203; W. B. Dinsmoor, Jr., *Sounion*, Athens 1971, pp. 25–28; Shoe, pp. 104, 105, 110, 166, 169, pls. LII:17, LIV:3, 10.

¹⁸⁴ *IG I³*, 369, lines 62, 82; 383, lines 106–107, 319, 330, 349. A cult of Poseidon had been established on the Akropolis *ca.* 475 B.C.: H. A. Shapiro, “Theseus, Athens, and Troizen,” *AA (JdI 97)* 1982, pp. 291–297; J. Binder, “The West Pediment of the Parthenon: Poseidon,” in *GRBM*, X, *Studies Presented to Sterling Dow*, Durham, North Carolina 1984, pp. 15–22; on the issue of state or local control of the cult, see Linders, *Other Gods*, pp. 12–18 and note 43 on pp. 82–83, with references.

¹⁸⁵ The same party of the Society of Dilettanti who investigated Rhamnous (Gell, Gandy, and Bedford) also uncovered part of its remains and published three plates of drawings: Gandy, chap. 9, pp. 57–59. H. Mussche reports on a test trench over the stylobate of the building: H. Mussche, *et al.*, *Thorikos 1964*, Brussels 1967, pp. 73–76, with bibliography; Dinsmoor, Jr., “Floating Temples,” pp. 415–420, 434–438, 451–452; Kalpaxis, pp. 137–138. Mr. Dinsmoor told me that he would date the colonnaded building *ca.* 420 B.C.

of 1812 nor those of 1893 uncovered an inner wall, but, as in the case of the temple at Segesta, excavations with modern techniques may reveal footing trenches for interior construction. Because of its atypical plan, with an odd number of columns on the short ends and slightly widened intercolumniations on the longer façades, the building has been assigned a variety of functions, including temple, stoa, and even a “telesterion”.¹⁸⁶ The building is perhaps to be associated with Demeter and Kore, for at least one and possibly two boundary markers for a temenos of the goddesses was found in the vicinity. In the Roman period parts of the building, including at least four columns and capitals, were moved to the Athenian Agora and rebuilt into the Southwest Temple. Its importance for our purposes here is as another example of substantial construction in Attica in the last decades of the 5th century B.C.

In the western part of Attica, new arrangements for the Sanctuary of Demeter and Persephone at Eleusis are indicated in inscriptions. The Rheitoi Bridge, used during the annual procession to Eleusis by prospective initiates, was built over one of the Rheitoi Lakes on the road to Eleusis in 422 (*IG I³*, 79).¹⁸⁷ It was to be built of whatever material from the Archaic Telesterion had not been used in the sanctuary wall, and it was to be quite narrow, in order to be impassable by wagons, but secure enough for foot traffic, to ensure the safety of the priestesses when they carried sacred relics. In addition to the concerns about the Pelargikon, Lampon’s rider at the end of the “First Fruits” decree (see pp. 230–231 above) calls for three storehouses to be built at Eleusis. Lampon was clearly anticipating the effectiveness of the main body of the decree: abundant offerings would be brought to Eleusis and much more storage area would be needed. Excavations at Eleusis have uncovered a triangular building dated to just this time; it may be one of Lampon’s storehouses.¹⁸⁸

It is in this context of building activity in the last three decades of the 5th century that I wish to place the Temple of Nemesis at Rhamnous. Construction in honor of Apollo and Artemis and the introduction of the cult of Asklepios to Athens were a natural reaction to the Plague. The Eleusinian goddesses already had a central position in Athens, and their role as agricultural and fertility goddesses ensured attention to their cult. Nemesis, although not specifically a “plague” goddess, nonetheless could have been perceived as kin to the others, as the goddess of balance and rightful outcome in human affairs; furthermore, she had already assisted the Athenians at Marathon and would surely help them against other threats to the inhabitants.

The activity detailed above shows, furthermore, a pattern of special attention to smaller shrines and aggrandizement of ancestral heroes such as Erechtheus (and Erichthonios, on

¹⁸⁶ Dinsmoor, Jr. discusses the problem in “Floating Temples,” p. 415, note 9, with references to earlier views. Because of the peripteral colonnade, the quality of construction, and the material (marble), I think that the building was a temple. Cf. the Temple of Athena at Sounion with an equally unusual plan: colonnades on only two sides, with 10 × 12 columns (Dinsmoor, Jr. [footnote 183 above], pp. 40–49).

¹⁸⁷ Shear, Jr. (footnote 146 above), pp. 130–131; for the date of the bridge, see B. Meritt and M. McGregor, “The Athenian Quota List of 421/0 B.C.,” *Phoenix* 21, 1967, pp. 85–91.

¹⁸⁸ G. Mylonas, *Eleusis and the Eleusinian Mysteries*, Princeton 1961, p. 126, with references.

the base of the cult statues of Athena and Hephaistos), Kodros, Neleus, and Basile, and the Eponymous Heroes of the tribes of Attica. The re-establishment of boundaries and the erection of walls and fences were other concerns within the city, at the Pelargikon, the Altar of the Twelve Gods, and the anonymous (to us) heroa.¹⁸⁹

The most costly projects would have been the completion of the Athena Nike sanctuary (including the parapet), the Erechtheion, and the Stoa of Zeus Eleutherios, built with Pentelic marble. Possibly the construction of the Temple of Ares (of Pentelic marble, and presumably in Attica) was continued into the 420's or later, and the steps, at least, were never finished. There are signs of economy in many of the other projects noted above: the use of local stone, the mixture of materials, including re-used blocks, smaller scaled buildings and shrines, and the unfinished condition of several of them, especially those outside the city (Thorikos, Brauron, Rhamnous). That there were funds for these projects is, however, indisputable, although the expenditure was not lavish.

The Temple of Nemesis probably cost about 30 talents.¹⁹⁰ Where the money came from is problematic. The one preserved account, from ca. 440, of five years of loans of funds belonging to the goddess provides an estimate of 9–10T in resources (*IG I³*, 248).¹⁹¹ While this is a substantial sum for a cult in a deme, supplementary funds would have been necessary to build the temple. Of course, the amount does not necessarily represent all the resources of the deme. Moreover, Meiggs and Lewis point out that the cult was “of more than local importance”; although Nemesis is not listed among the “Other Gods” whose funds and treasures were overseen in Athens (*IG I³*, 369, 383), the independence of her cult from Athenian control is not certain.¹⁹² Some sort of joint administration of the sanctuary seems

¹⁸⁹ This is also the period (ca. 425 B.C.) when gravestones were reintroduced and when votive reliefs were made in great numbers; document reliefs became common after 425. For gravestones, see Mikalson, “Religion and Plague,” pp. 223–224; S. Humphreys, “Family Tombs and Tomb Cult in Ancient Athens,” *JHS* 100, 1980 (pp. 96–126), p. 112; C. Clairmont, *Gravestone and Epigram*, Mainz 1970, pp. 40–44; R. Stupperich, *Staatsbegräbnis und Privatgrabmal im klassischen Athen*, Munster 1977, pp. 243–247; Ridgway, p. 129; for votive reliefs, see G. Neumann, *Probleme des griechischen Weihreliefs*, Tübingen 1979, pp. 45–48; for document reliefs, see C. Lawton, *Corpus of Attic Document Reliefs*, forthcoming.

¹⁹⁰ I base this rough estimate on comparisons with the estimates for other buildings: R. Stanier estimates ca. 460–500T for the Parthenon, 200T for the Propylaea (“The Cost of the Parthenon,” *JHS* 73, 1953, pp. 68–76); Burford, on the basis of these estimates and the known cost of ca. 23T for the Temple of Asklepios at Epidauros, estimates ca. 50T for the Hephaisteion, and 40–50T for the temples of Ares and Poseidon (“Economics,” p. 25; *eadem*, *Greek Temple Builders at Epidauros*, Liverpool 1989, pp. 81–85). The Temple of Nemesis is smaller than the Temple of Asklepios (12.03 × 23.28 m., with 6 × 11 columns) but was built of marble, which takes longer to work than poros; of course, the columns and other surfaces were unfinished. Burford has shown that the costs of temple building were surprisingly stable over the 5th and 4th centuries, with little or no inflation.

¹⁹¹ For the inscription, Meiggs and Lewis, no. 53, pp. 134–146; Pouilloux, no. 35, pp. 147–150; D. Whitehead, *The Demes of Attica*, Princeton 1986, pp. 158–160; for the administration of such funds, Gomme, pp. 20–33; W. S. Ferguson, *The Treasurers of Athena*, Cambridge, Mass. 1932, pp. 85–95, 106–109; R. Bogaert, *Banques et banquiers dans les cités grecques*, Leiden 1968, pp. 93–94, 279–304.

¹⁹² Meiggs and Lewis suggest that the funds were secure in the fortress at Rhamnous; they assume that state control prevailed partly on the basis of the presumed attribution of the temple to the “Theseum Architect” and partly on the large number of borrowers from Nemesis’ funds (p. 146); opposing opinions are held by Boersma (p. 78) and Linders, who states, “the fact that it was administered by the deme authorities, not the state, is

likely, with a large contribution for the cost of the temple and the cult statue provided by state funds. Similar contributions must have been made to Sounion, Thorikos, and Brauron, and certainly for the temple to Apollo on Delos.

Alison Burford, working with evidence for building costs in the 5th and 4th centuries B.C., has shown that the pacing and timing of construction of temples and other buildings in sanctuaries was determined largely by the presence and availability of the necessary specialists and trained craftsmen, rather than by costs, or even wartime conditions.¹⁹³ After ca. 450 B.C., the first actual "building recession" in Greece occurred ca. 400–375 B.C., when specialists and craftsmen were evidently scarce and only very essential repairs were made.¹⁹⁴ When Athens' Long Walls were rebuilt by Konon in 394/3, for example, volunteers from Boiotia, Thebans, and workmen from other cities had to be brought in to help.¹⁹⁵ In contrast with such bleak exigencies, the continuous activity discussed above in sanctuaries on the Akropolis, in the Agora, in the city of Athens, and in Attica establishes that there was no building recession during the Peloponnesian War. The Temple of Nemesis at Rhamnous was one of many new provisions for the gods.

REPAIRS TO THE TEMPLE

Extent and Characteristics

At some point after the original construction, the Temple of Nemesis was severely damaged at its eastern end and the upper courses were subsequently repaired with new blocks (see pp. 181, 199, 208–209 above). Although most blocks on the site are broken and weathered, there are no definite traces of burning or calcination; furthermore, if the temple had been burned, the damage would not have been confined to the upper courses of the east end. These blocks had to be replaced presumably because most of the east frieze, geison, sima, and roof had been dislodged, pulled down, and allowed to smash on the ground.

Homer A. Thompson has observed that the archaeological record of Athens and Attica indicates widespread instances of apparently deliberate damage to monuments and sanctuaries in the Hellenistic period.¹⁹⁶ Among sanctuaries which suffered damage, three are located on the eastern coast of Attica and lie near a fortress: the Temple of Nemesis at Rhamnous, the colonnaded building at Thorikos (perhaps a temple of Demeter), and the Temples of Poseidon and Athena at Sounion. Thompson suggests that the damage to these temples and the destruction of monuments in Athens was caused by the armies of Philip V of Macedon during his raids in 200 B.C.¹⁹⁷ Deliberate damage and destruction of sanctuaries

shown by the dating by the demarch" (*Other Gods*, p. 13 and note 38 on pp. 80–81). In line 33 of the inscription, the *hieropoioi* have control over the funds. Whitehead suggests a joint responsibility, of uncertain division, between the central and local governments ([footnote 191 above] pp. 257–258).

¹⁹³ Burford, "Economics," pp. 30–34.

¹⁹⁴ Burford, "Economics," p. 32; *eadem*, *Greek Temple Builders* (footnote 190 above), pp. 25–31, 204–205.

¹⁹⁵ *IG II²*, 1656–1664; *SEG XIX*, 145, XXXII, 165; Xenophon, *Hell.* iv.8.9–10; Diodoros, xiv.85.3–4.

¹⁹⁶ Thompson (footnote 175 above).

¹⁹⁷ For a narrative account of the activities of Philip V, see W. S. Ferguson, *Hellenistic Athens*, London 1911, pp. 272–277; F. W. Walbank, *Philip V of Macedon*, Cambridge 1940, pp. 129–131, 139, note 3, and 139–141.

by the troops of this king is documented by ancient sources.¹⁹⁸ The Temple of Nemesis, lying above the fortress at Rhamnous and across the strait from Euboia where Philip was encamped, would have been a likely target for his marauding.

The blocks which were used to repair the Temple of Nemesis are distinct from the original blocks: the marble is coarser, darker, and more friable than the original. The tooling also is quite different; for example, rough picking, executed with a heavy, rounded point, was left as the final surface on the tops of the geison blocks. The sizes of the blocks of the geison and frieze and their details also differ. The quality of the moldings on the replacement blocks is poor, but an attempt was made to copy the original. Even T-clamps (in rough form) were used, copying the techniques of the 5th century B.C. Replacement blocks made for the frieze, the geison, the raking geison, and the ceiling coffers are preserved, and there were probably replacements made for the tympanon, sima, and roof tiles.

The characteristics of the replacement blocks suggest that the repairs were made in the Roman period, when interest in the old Classical temples was renewed.¹⁹⁹ During the period of the Julio-Claudian emperors, for example, new temples (often of re-used materials), rebuildings of old shrines, additions of Imperial nomenclature to traditional cults, and numerous dedications attest to a revival of old cults.²⁰⁰ A fragmentary inscription (*IG II²*, 1035) calls for an extensive program of restoration of sanctuaries and shrines in Athens, Peiraieus, and Salamis; its date is uncertain, but probably lies in the 1st century after Christ.²⁰¹ The rebuilding of the Temple of Nemesis may well have been carried out during this period of restoration.

The Occasion of the Repairs

The central block of the architrave on the east end of the Temple of Nemesis bears an inscription which may be associated with the repairs to the temple, which is rededicated to the goddess Livia by the Demos (*IG II²*, 3242). Although the inscription is honorific and makes no mention of the repairs, its location requires that the architrave, and surely the rest

¹⁹⁸ Livy, xxxi.24.8–18; xxxi.29; xxxi.44.4–8.

¹⁹⁹ Whole buildings are known to have been moved in the Augustan period, a process which usually involved reworking the clamps. Dinsmoor, Jr., "Floating Temples"; Shear, Jr., "Provincial Town," pp. 361–363. Frazer lists many passages in which Pausanias mentions roofless and ruined temples (42 citations), temples without images, pedestals without statues, and other ruined buildings ([footnote 14 above] I, p. xiv, note 6). The refurbishing of a temple in Attica, *in situ*, appears to be unusual. Other examples of moved buildings are given by A. Petronotis, "'Wandernde' Tempel 1.," in ΣΤΗΛΗ, pp. 328–330.

²⁰⁰ Shear, Jr., "Provincial Town," pp. 358–368; for construction for the Imperial cults generally, see S. R. F. Price, *Rituals and Power*, Cambridge 1984, pp. 133–169; for the merging of the cults of Julio-Claudians with traditional cults, see D. Geagan, "Imperial Visits to Athens: the Epigraphical Evidence," in Πρακτικά τοῦ Ἡ' Διεθνoῦς Συνεδρίου 'Ελληνικῆς καὶ Λατινικῆς Ἐπιγραφικῆς ('Αθήνα 3–9 Ὀκτώβριου 1982) Athens 1984 (pp. 69–78), pp. 76–77.

²⁰¹ *IG II²*, 1035; *SEG XXXIII*, 136; G. R. Culley ("The Restoration of Sanctuaries in Attica: *IG II²*, 1035," *Hesperia* 44, 1975, pp. 207–223; "The Restoration of Sanctuaries in Attica, II," *Hesperia* 46, 1977, pp. 282–298) dates the inscription to 10/9–3/2 B.C.; Shear proposes a date between A.D. 41 and 61 ("Provincial Town," pp. 366–367); J. von Freeden would move the date of the inscription back to 74/3–65/4 B.C. (*OIKIA KYPPHCTOY* [*Archaeologia* 29], Rome 1983, pp. 157–160, reviewed by R. R. R. Smith, *JHS* 105, 1985, pp. 230–231).

of the façade, was in place. It seems very likely that the occasion of the repairs and the occasion of the inscription are the same.²⁰²

The block is broken at one end, and the inscribed face has been cemented together from at least four fragments (E4 215J). The inscription was first published by Orlandos, then by Broneer, Kirchner, Pouilloux, Dinsmoor, and Petrakos.²⁰³ I give Petrakos' text here, with his new readings at the beginning of lines 3 and 4 but without his restoration of line 6:

ὁ δῆμος
 θεαῖ Λειβία. Στρατηγούντος
 ἐ[πὶ] τοὺς ὀπλε[ί]τας τοῦ καὶ ἱερέως θεᾶς
 ῥώ[μη]ς κ[α]ὶ Σεβασ[τ]οῦ Καίσαρος [Δημ]οστράτου
 [τοῦ Διονυ]σίου Παλληνέως, ἄρχοντος δὲ
 [-----] τοῦ Ἄν<τι>πάτρου Φλυέ[ως ν]εωτέρου

The people (honor) the goddess Livia.
 Demonstratos son of Dionysios of Pallene
 was hoplite general and priest of the
 goddess Roma and Augustus Caesar.

[-----], son of Antipatros the Younger of Phlya, was Archon.

or, [-----] the Younger, son of Antipatros of Phlya, was Archon.

The empress Livia died in A.D. 29 and was deified in A.D. 42, which gives a *terminus post quem* for the date of the inscription.²⁰⁴ The precise date of the inscription is difficult to determine, since the archon's name is missing and must be restored.

For evidence for the date of the inscription, we may look first to the name of the hoplite general. The man Demonstratos son of Dionysios of Pallene, named on the dedication as hoplite general and priest of Roma and Augustus Caesar, is probably related to officials with the same names who were active at least two generations earlier.²⁰⁵ A father and son,

²⁰² Iliakis seems to think that the blocks of the repair in the Roman period are of poor quality and that the inscription is so well cut that it should not be associated with the repairs; he then proposes to date the repairs to the reign of Julian, A.D. 361–363 (“East End,” pp. 221–223). I do not find his suggestion persuasive.

²⁰³ Orlandos, “Note,” p. 319; O. Broneer, “Some Greek Inscriptions of Roman Date in Attica,” *AJA* 36, 1932, pp. 397–400; Kirchner in *IG II²*, 3242 follows Broneer's text; Pouilloux (no. 46, p. 156) follows Kirchner. In footnotes, J. H. Oliver restores the archon as Antipatros without further comment (*The Athenian Expounders of the Sacred and Ancestral Law*, Baltimore 1950, p. 85, note 18; “Greek Inscriptions,” *Hesperia* 11, 1942, p. 83, note 23a). Dinsmoor republishes the inscription with Oliver's restoration and discusses the genealogy and dates of the restored archon's family members (“Fantasies,” pp. 186–194). Petrakos gives the text as 1st century after Christ, with new readings (“Inscriptions,” p. 329).

²⁰⁴ Livia was honored in the Agora as Artemis Boulaia, with a statue and perhaps a temple (the Southwest Temple), *SEG XXII*, 152 (Shear, Jr., “Provincial Town,” pp. 363–364; *Agora XIV*, p. 166; J. H. Oliver, “Livia as Artemis Boulaia at Athens,” *CP* 60, 1965, p. 179); she also received dedications as Sebaste Hygeia (*IG II²*, 3240) and Pronoia (*IG II²*, 3238), and her priests had designated theater seats (*IG II²*, 5096, 5161). For her cult, see G. Grether, “Livia and the Roman Imperial Cult,” *AJP* 67, 1946, pp. 222–252 and Price (footnote 200 above) *passim* and pp. 249, 255, and 258 for dedications of temples and statues on Lesbos, in Ephesos, and in Smyrna. For portraits found in Greece, A. Stavrides, «Συμβολὴ στὴν εἰκονογραφία τῆς αὐτοκράτειρας Λιβίας Δρουσίλλας στὸν ἐλληνικὸ χῶρο», in ΣΤΗΛΗ, pp. 300–302.

²⁰⁵ Dinsmoor, “Fantasies,” p. 194 and note 40, with references; T. Sarikakis (*The Hoplite General in*

Dionysios son of Demonstratos and Demonstratos son of Dionysios, of Pallene, both served as sacred officials at Eleusis, probably in 20/19 B.C.²⁰⁶ The hoplite general in the dedication to Livia is probably a descendant of these men, but the dates of the activities of the family and their precise relationships to one another are not certain. The careers of this family may be adjusted with equal historical probability to fit several dates. Hence the name of the hoplite general does not provide a fixed date for the rededication to Livia.

The restoration of the archon's name and the date of the archonship of the rededication are also problematic. Broneer restored the archon's name as Aiolion, since a man named Antipatros of Phlya (the patronymic in line 6), known to have been archon in A.D. 45/6, had a son named Aiolion who himself served as archon.²⁰⁷ The date of Aiolion's archonship is not known. Broneer dated it, and hence the rededication to Livia, to the reign of Galba, 68/9, since Galba assumed the name Livius and was known to have honored the empress. A dedication of the Temple of Nemesis to her would have indirectly expressed appreciation of Galba. But this date would require a delay of 26 years after her deification; there is no mention of Galba in the inscription or of a specific dedicator other than the Demos.

Dinsmoor, in a discussion peripheral to his own restoration of the archon's name, re-dates Aiolion's archonship to the reign of Nerva, in 97/8.²⁰⁸ Nerva is known to have been of great help to Tiberius Claudius Atticus Herodes of Marathon, father of Herodes Atticus and patriarch of the prominent family living near Rhamnous.²⁰⁹ If Dinsmoor's redating is correct, then this important local family might have been involved in the restoration of the temple of Nemesis. It would be tempting to suppose that the special relationship between Tiberius Atticus and Nerva inspired the repairs, rebuilding, and honorary dedication of the Temple of Nemesis, so close to Atticus' home. Tiberius Atticus' son, Herodes Atticus, made dedications in the sanctuary of Nemesis, and his wife Regilla built a temple to Nemesis and Athena on the Via Appia outside Rome.²¹⁰ This connection would help explain the discrepancy of 55 years between Livia's deification and the dedication. The inscription on the architrave, however, mentions only the Demos as responsible for the dedication.

Athens, Athens 1951, pp. 28, 48–49) dates this hoplite general to 45/6 after accepting an alternative restoration of the archon's name, which will be discussed below.

²⁰⁶ K. Clinton, *The Sacred Officials of the Eleusinian Mysteries* (*Transactions of the American Philosophical Society* 64, part 3, 1974), p. 77 and note 8.

²⁰⁷ Broneer (footnote 203 above), pp. 397–400; Antipatros of Phlya is given as archon in *IG II²*, 1945, 1969, and 1970, and by Phlegon of Tralles, *Περὶ Θανμασιῶν*, *FGrHist*, no. 257, F 36, VI; the son Aiolion is named as ephebe in *IG II²*, 1973 and as archon, but without patronymic, in *IG II²*, 1998. The epithet “neoterōs” refers to the father in Broneer's restoration; cf. the use of “neoterōs” for distinguishing homonymous archons, discussed by P. Graindor, *Chronologie des archontes athéniens sous l'empire* (*Lettres et Sciences Morales et Politiques* 8), [Brussels 1921], p. 69, note 3.

²⁰⁸ “Fantasies,” pp. 193–217.

²⁰⁹ Tiberius Atticus was said to have found a great treasure in his house near the theater [of Dionysos] (Philostratos, II.1.3), which Nerva allowed him to keep. Domitian had confiscated the property of Atticus' father Hipparchos and may have condemned him to death (P. Graindor, *Hérode Atticus et sa famille*, Cairo 1930, pp. 11–17, 20–23; W. Ameling, *Herodes Atticus I*, Hildesheim 1983, pp. 3–20).

²¹⁰ *IG II²*, 3969, 13208; Graindor, *op. cit.*, pp. 94–98, 117–118; Pouilloux, no. 50, p. 159; no. 51, p. 160; Ameling, *loc. cit.*

Dinsmoor proposed a different restoration of the archon's name: Antipatros the Younger of Phlya, whose archonship was in 45/6, according to Phlegon of Tralles.²¹¹ The epithet "neoteros" in the inscription would then apply to the son, serving as archon, rather than to his father, and the inscription would read, "Antipatros the Younger, son of Antipatros of Phlya, was Archon." This date is much closer to Livia's deification, when the Demos would have been likely to grant this honor; no speculative associations are required to explain the date. In support of this restoration, Dinsmoor also gave a new reading of the stone, which added part of the final letter, upsilon, of the archon's name. If Dinsmoor's reading is correct, it would add to the plausibility of his suggested date.²¹²

The rededication of the Temple of Nemesis to Livia, then, should be dated to 45/6, just three years after her deification in A.D. 42. A pedestal of a statue honoring Claudius was found in the sanctuary of Nemesis, and it too could be associated with the occasion of the repairs.²¹³ Both this statue and the inscription honoring Livia show the integration of the Imperial cults to the traditional one of Nemesis, just at the time when other sanctuaries were being restored in Athens and Attica.

The project of rebuilding the Temple of Nemesis at Rhamnous must have been a costly one, since it involved replacing the east end, which required making duplicate blocks for the frieze, geison, perhaps the tympanon, the raking geison, the akroteria, and perhaps part of the sima, roof tiles, and ceiling coffers. Although the replacement blocks are easily distinguished, some care nevertheless was taken to duplicate the forms of the original blocks. Unlike other temples in Attica which had fallen into disrepair, the Temple of Nemesis was not stripped of useful parts or removed whole to Athens. Instead, it was restored with pride as an important local monument.

THE ARCHITECT OF THE TEMPLE OF NEMESIS

The celebrated buildings of the 5th century B.C. have been particularly subject to scholarly attributions to individual architects (named or nameless), and the Temple of Nemesis is no exception. From the art-historical traditions of the Renaissance and the Graeco-Roman world itself, modern scholars have inherited a keen appreciation of the individual artist's skill, inspiration, and expression in the visual arts. Although the evidence for the architect's contribution is far scantier for Classical Greece than for later periods, nonetheless the extraordinary qualities of Classical temples have encouraged efforts to reconstruct careers and personalities.²¹⁴

²¹¹ *FGrHist*, no. 257, F 36, VI.

²¹² I have not examined the inscription to check this reading. The most recent text, that of Petrakos, does not include the dotted upsilon given by Dinsmoor.

²¹³ *IG II²*, 3275; *SEG XXXI*, 165; Pouilloux, no. 47, pp. 157–158; Petrakos, "Inscriptions," p. 330, fig. 7.

²¹⁴ What an ancient Greek architect actually did in the course of his job and how he went about it have been subjects of much discussion in recent years. These questions are closely connected to the issue of architectural "hands" or assessment of individual artistic personality in the design of buildings. For recent views and earlier bibliography, see the papers in *Le dessin d'architecture* (footnote 26 above), and in *Architecture et Société de l'archaïsme grec à la fin de la république romaine* (Actes du Colloque, 1980), Paris/Rome 1983 and Coulton, *Architects*.

So accustomed are we in the modern world to the link of “personality” to artistic endeavor that the general anonymity of ancient architects seemingly reflects a great limitation in the evidence. Only a small number of architects’ names are known to us through literary and epigraphical evidence, while names of sculptors in these same sources are far more abundant.²¹⁵ Yet in the 6th and 5th centuries B.C., the very nature of the commissions available to even the best architects would have discouraged assertions of individuality. Because the architect was usually hired at public expense by a city or community for a communal dedication of a new or rebuilt temple, he was constantly under public scrutiny and his work subject to the wishes of the community.²¹⁶ Only with the emergence of the private patron in the Hellenistic period could the architect perhaps have had greater scope for personal expression; even then, the patron more so than the architect was remembered and associated with the building.

What constitutes “originality” in Greek architecture? We might cite experiments in modular systems and proportional designs; there were technical triumphs, involving extraordinary scale or feats of engineering and “new” combinations of moldings or of parts of the Doric and Ionic orders; highly precise workmanship allowed the introduction of “refinements”, such as delicate curvature; the relationship of the peristyle to the cella was shifted; there came to be new emphasis on interiors, extensions of the orders to non-weight-bearing surfaces, and proliferation and elaboration of the orders. In the 5th century B.C., the design of a small number of buildings stepped beyond the peristylar temple or simple stoa: the Propylaia, the Erechtheion, the Telesterion at Eleusis, all unusual buildings to meet unusual requirements. What is clear is that there was originality in design but only within a tight range of modes, just as there were only two or three orders and six basic profiles of moldings. Like the restricted programme of the Olympic games, refinement and competition took place within a set, narrow framework of possibilities. Innovation for its own sake was not the goal.²¹⁷

Given these circumstances, what should be the criteria for “hands” in architectural design? Greek temples are far more complex than two-dimensional paintings or freestanding sculpture, and they are not the handiwork of one or even a few individuals. Although usually only one individual was responsible for the design, and he supervised its execution, the actual construction was a group project. Analogies from the attributions of “hands” in the study of Greek vase-painting cannot be helpful here.

²¹⁵ Of course, the construction of temples was a far less frequent undertaking than the carving of sculpture; but even so the architects’ names were less memorable: for example, Pausanias remarks that at Olympia they did not remember the name of the architect of the Temple of Hera (v.16.1). Only one architect’s signature on a building is known, that of Kleomenes on the steps of the Temple of Apollo at Syracuse (*IG XIV*, 1).

²¹⁶ We do hear of exceptions to public sponsorship: Themistokles dedicated his own temple to Artemis Aristoboule (which “gave offense”, according to Plutarch, *Them.* 22.1) and to Aphrodite. Individuals occasionally offered (for various motives) to underwrite the expenses of public projects: e.g., the Alkmaionidai paid for a marble front for the Temple of Apollo at Delphi (Herodotos v.62), and Perikles offered to pay for public works his critics had deemed too costly (*IG I³*, 49; *SEG XXIX*, 10).

²¹⁷ For discussion of this and related points, see J. J. Pollitt, *The Ancient View of Greek Art*, New Haven/London 1974, esp. pp. 12–26, 32–37.

The basic ground plan of a temple was usually designed to fit specific requirements. Most Classical Greek temples were built on earlier foundations and often incorporated re-used material from their predecessors in the foundations or even in the superstructure. Successive temples frequently have features “inherited” from their predecessors, such as the division of the cella of the Parthenon, the plan and orientation of the Temple of Apollo at Bassai, and the plan of the 4th-century Temple of Apollo at Delphi. This careful attention to precedent, for reasons of cult or continuity, reinforced a tendency toward conservatism in design. Furthermore, the architect had to address the desiderata of the civic committee to which he reported. The evidence from excavated temples suggests that the overseers expected a replacement of what had been there, but with some modification to make the temple larger, or more impressive in decoration or material, or expanded in other appropriate ways to honor the god.

The systems of proportion might be evidence for “hands”, but they could be conveyed easily through books or instruction (or through autopsy by a visiting architect), as in the temple at Segesta and the Temple of the Athenians on Delos, whose proportions were inspired by the Parthenon.²¹⁸ Details such as the choice of moldings and their profiles are helpful to modern students as chronological and regional indicators, but they are dubious evidence for architectural “hands”, especially on contemporary buildings within one city.

Interest in a particular aspect of design, such as Iktinos’ innovative interiors, could be a more convincing indicator of “personality”.²¹⁹ But this kind of assessment is dependent on the literary sources which tell us that Iktinos was the architect of the Parthenon, the Telesterion at Eleusis, and the Temple of Apollo at Bassai; if we did not have these references, would a single authorship of these buildings have been obvious? In the case of the Propylaia and the Parthenon, the details and innovative features of both and their physical and chronological proximity would have made these a likely pair for attribution to one exceptional architect, simply on the basis of the buildings themselves, yet our sources give Mnesikles separate credit for the Propylaia.

It would appear that architectural “hands”, as evidenced by the design in a building, should be assigned with great caution, and that the few instances of attribution which remain plausible after careful scrutiny of the evidence rest ultimately on literary or epigraphical testimonia.

Since the buildings themselves are often the only evidence for an architect’s personal stamp, the technical details of construction must be a primary concern of the architectural historian. The details of construction in Greek temples provide important criteria for comparisons between buildings: they are helpful for dating and for the analysis of regional styles and international influence. Because the duties of the Greek architect included numerous technical decisions about construction, the hidden parts of a building, the seams and joints

²¹⁸ Mertens (footnote 163 above), pp. 179–186, 220–228.

²¹⁹ J. R. McCredie, “The Architects of the Parthenon,” in *Studies in Classical Art and Archaeology: A Tribute to Peter Heinrich von Blanckenhagen*, Locust Valley, N.Y. 1979, pp. 69–73. McCredie emphasizes the importance of the literary sources for the attribution of buildings to Iktinos.

that were intended to be as inconspicuous as possible, can reveal evidence for or against authorship. The inner details provide evidence of the architect's "hand" which should correspond to that given by their external appearance.

As this study shows, both the techniques of construction and the stylistic details of the Temple of Nemesis indicate that its architect was not the so-called "Theseum Architect" who had started the Hephaisteion in Athens some thirty years earlier. Perhaps a local man was engaged for this project in honor of the local goddess.

The architect was certainly familiar with the Attic "Ionicizing" style which had been developing in Athens and Attica, but he chose to use pure Doric forms for the temple at Rhamnous. Just as the Temple of Athena Nike and the Erechtheion give us the finest expression of the Ionic order in Athens near the end of the 5th century B.C., their contemporary, the Temple of Nemesis, is a striking and elegant expression of the Doric. The temple provided a complementary setting for Agorakritos' graceful statue of Nemesis.

APPENDIX I: BLOCK LIST

The blocks listed below were located in areas accessible to the public in 1977–1979. A catalogue with measurements taken by the author at that time, state of preservation, and significant features for each block is on file in the archives of the American School of Classical Studies at Athens. Letters followed by numbers are those of the author’s catalogue; numbers followed by letters refer to the author’s inventory of blocks by location on the site in 1977–1979 (see Fig. 31).

CAPITALS

C1 2A	D9 194I	D40 200J
C2 19A	D10 224E	D41 201J
C3 47B	D11 225E	D42 202J
C4 72C	D12 227M	D43 203J
C5 78C	D13 228M	D44 204J
C6 111J	D14 229M	D45 205K
C7 211D/E	D15 230M	D46 206J
C8 216J	D16 231M	D47 222D
	D17 232M	D48 223E
	D18 233M	D49 226E
		D50 212E

CEILING BLOCKS

Flank

CB1 32A
CB2 53B
CB3 169B/C

Porch

CB4 92K
CB5 112K
CB6 180D/E
CB7 179K

Interbeam panel

CB8 181B

Intermediate

D19 7A
D20 8A
D21 16A
D22 34A
D23 35A
D24 45B
D25 46B
D26 50C
D27 51C
D28 76C
D29 79C
D30 80C
D31 190J
D32 191J
D33 192I
D34 193I
D35 195H
D36 196H
D37 197H
D38 198J
D39 199J

EPISTYLE BLOCKS

Corner

E1 110J (NE)
E2 178J (SE)
E3 170D (NW)

Intermediate

E4 215J
E5 115C
E6 182J
E7 1A
E8 217B
E9 20A
E10 17A
E11 172A

COLUMN DRUMS

Bottom

D1 3A
D2 4A
D3 5A
D4 6A
D5 48C
D6 49C
D7 67C
D8 77C

EPISTYLE BACKERS

Intermediate

EB1 22A

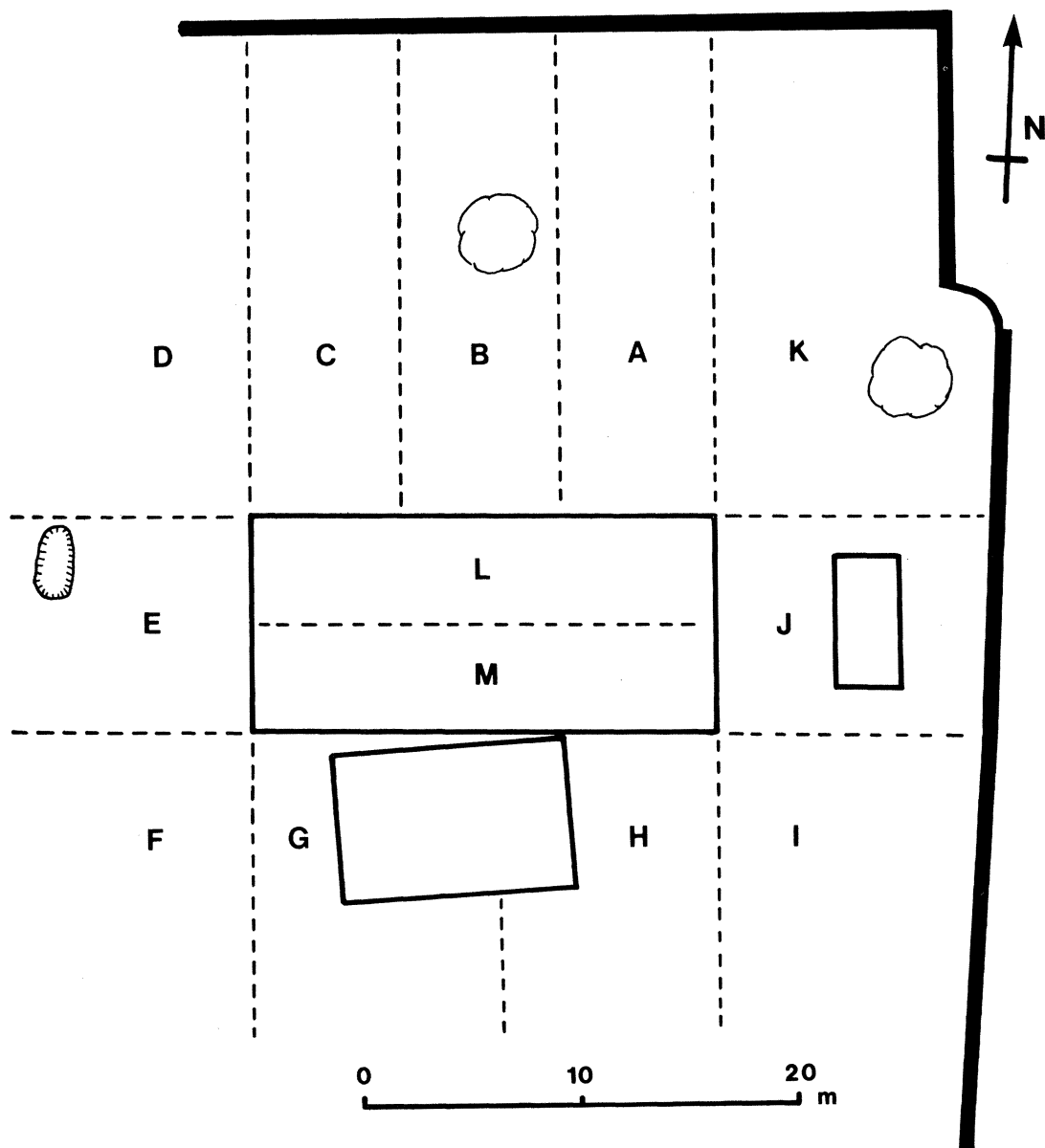


FIG. 31. Plan of the sanctuary showing locations designated by letters in the Block List

EPIKRANITIS BLOCKS	<i>Roman replacements</i>	G12 58D
<i>Interior</i>	F24 174J	G13 129D + 36A
Ep1 33A	F25 175J	G14 105I
Ep2 39A	F26 173J	G15 104I
Ep3 91K	F27 207K	G16 101I
<i>Archaic (?)</i>	F28 208K	G17 38A
Ep4 75D		G18 29A
Ep5 220E	FRIEZE BACKERS	G19 28A
Ep6 230E	<i>Corner</i>	G20 30A
Ep7 231E	FB1 21A (NE?)	G21 128D + 114D
<i>Epikranitis (?) , Archaic</i>	<i>Intermediate</i>	G22 31A
Ep8 234A	FB2 25A/K	G23 96H + 125E
FRIEZE BLOCKS	FB3 109J	G24 98H + 27A
<i>Corner</i>	FB4 117D	G25 158E
F1 165G + 74C (SW)	FB5 184I	G26 40A
F2 107I (SE)	FB6 185I	G27 97H
F3 209K (NW)	FB7 187J	G28 95H
<i>Intermediate</i>	FB8 189J	G29 155I
F4 171B	FB9 206J	G30 99I
F5 12A	FB10 213E	G31 103I
F6 14A	FLOOR BLOCKS	G32 37A
F7 15A	F11 70B	G33 55C
F8 10A		G34 57D
F9 73C	GEISON BLOCKS	G35 66C
F10 18A	<i>Corner</i>	G36 81K
F11 71B	G1 100I + 120D (SE)	G37 82K
F12 13A	G2 141J (NE)	G38 83K
F13 168D	G3 132D (SW)	G39 84K
F14 214E	G4 130E (NW)	G40 126D
F15 167D	<i>Flank, center</i>	G41 154K
F16 116D	G5 26A	<i>Front, center</i>
F17 118D	G6 63D	G42 59C
F18 121E	G7 52B	G43 122E
F19 11A	G8 157E + 151E	G44 106J + 89K
F20 24A/K	<i>Flank, intermediate</i>	<i>Front, intermediate</i>
F21 176J	G9 94K	G45 56C
F22 108I	G10 137A + 42A	G46 133D + 123E
F23 177J	G11 136D	G47 60C
		G48 127D + 156D

G49 62D	G67 87K	RG6 146C
G50 64D	G68 90K	RG7 147C
G51 93K		RG8 148C
G52 150D	TYMPANON BLOCKS	
G53 54B	P1 113D	SIMA
G54 152D	P2 119D	RT1 68B
G55 153D	P3 124E	RT2 69B
G56 159C	P4 131E	RT3 102F
G57 65C	P5 161E (center)	RT4 134D (corner)
G58 61D	P6 218D + 221E	<i>Akroterion support</i>
G59 88K	P7 219D	RT5 140D
<i>Roman replacements, front</i>		
G60 41A	RAKING GEISON	WALL BLOCKS
G61 43A/K	RG1 142C	T1 9A
G62 138K	RG2 149C	T2 44B
G63 139K	RG3 143C	T3 162L
G64 160K	<i>Roman replacements</i>	
G65 85K	RG4 144C	
G66 86K	RG5 145C	

APPENDIX II: TEMPLE OF POSEIDON AT SOUNION

RECONSTRUCTION OF THE FRIEZE

The blocks of the frieze have the following cuttings: 1) a small T-clamp cutting on each end, for attachment to adjacent frieze blocks; 2) a dowel hole parallel to the face of the block, with pry holes, for attaching the geison; 3) square holes, rectangular in section, on each end of the block, for lifting it into position; 4) dowel holes on the bottom for attachment to the epistyle. As in the Temple of Nemesis, the location of the dowel holes for the superposed geison block indicates its configuration, that is, whether it ended in a mutule or a via on the doweled end. This in turn indicates whether the geison blocks and the frieze block itself belong left or right of center.

The fifteen surviving frieze blocks preserve the following units: one corner T-TM, six TM, six MT, one TMT, and one TM[T] restored here as a three-unit block. These blocks are now located on the north, west, and south sides of the temple. The reconstruction presented here assumes that their current location indicates the side of the temple to which they belong. The cuttings on the blocks justify this assumption, since in most cases the only alternative position for the blocks is diagonally opposite. The present location of the geison blocks also proved to be useful in the reconstruction.

The reconstruction of the frieze course is presented in Figure 32. The corner blocks are one triglyph and one metope long (1.338 m.) on the flanks, with one triglyph on the return.²²⁰ Only one of the four, S-1, remains; it was found lying west of the temple, and its configuration shows that it belongs to the southwest corner. Its top is completely broken off, but its full length is preserved.

The cuttings on S-4 show that the southeast corner block must also have been similarly designed, with one metope and one triglyph on the south side and one triglyph on the eastern return. S-4 has three units (TMT). The dowel hole for the superposed geison block shows that it ended in a via on the right, and thus belongs right of center, as does the frieze block. The only position right of center for a frieze block that ends on the right in a triglyph is adjacent to the corner. Any other position would require that the block(s) to the right of the three-unit block end in a metope on the left, and the blocks on the site today which belong right of the center on all four sides end in a triglyph on the left. That the corner block was two units long is shown by the placement of the dowel hole for the geison on S-4, which allows just enough space for a block with two mutules and two viae before the final two mutules of the corner geison block. It is assumed here that the northeast and northwest corner blocks were cut in the same configuration as the southeast and southwest corners.

A preserved block which belongs left of center on the south side is S-2, a block of two units. A third block on the south side, S-3, of two units, also belongs left of center, somewhere between the three-unit blocks adjacent to the southwest corner and the three-unit block in the center. The exact positions of S-2 and S-3 cannot be determined.

²²⁰ Plommer (pp. 84–85) supposed that the corner blocks had three units (TMT) in order to accommodate a rectangular corner geison block (an assumption shown to be incorrect by Dinsmoor, Jr. ["Poseidon"]).

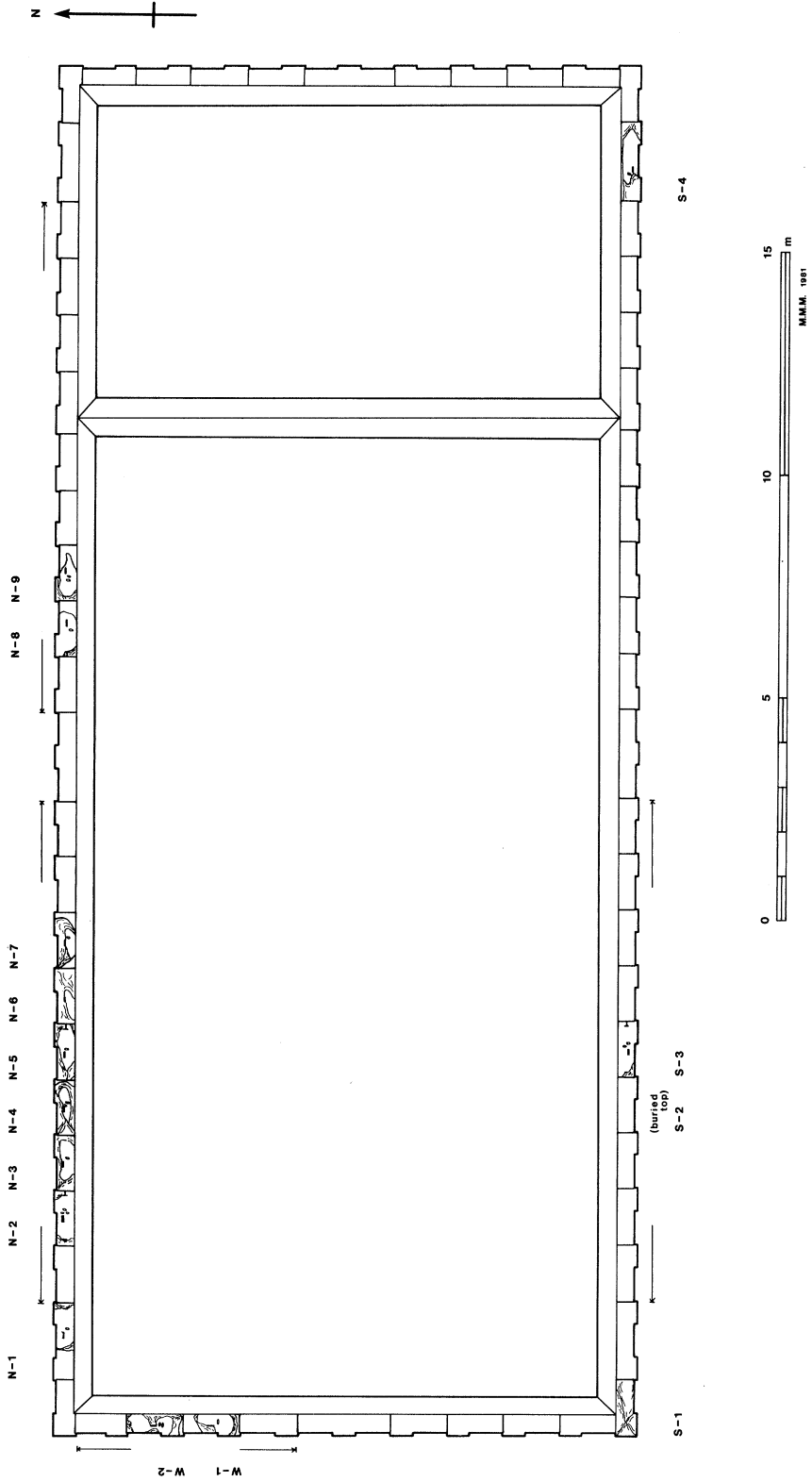


FIG. 32. Reconstructed plan of the frieze of the Temple of Poseidon at Sounion

On the west end there are two blocks preserved, W-1 and W-2. The dowel holes for the geison blocks indicate that they belong left of center. There are four possible positions for these two blocks.

On the north side, nine blocks of the frieze are preserved. One block, N-1, should be restored as a block of three units, TM[T]. Its right side is broken off at a point *ca.* 0.30 m. from the missing triglyph. It belongs adjacent to the northwest corner. Six other blocks, N-2 through N-7 (TM), belong right of center, on the evidence of the dowels for the geison. They fit any of the nine positions available between the missing center block (MTM) and N-1.

Two other blocks of two units each, N-8 and N-9 (MT), belong left of center, again on the evidence of the dowel holes for the geison blocks. Since the right edge of the last laid, presumably undoweled geison block "K" lay over the missing center frieze block (MTM), all other frieze blocks left of center should have dowel holes for the geison. Blocks N-8 and N-9, with dowel holes, could belong to any of the nine positions between the center block and the three-unit block (TMT) adjacent to the northeast corner.

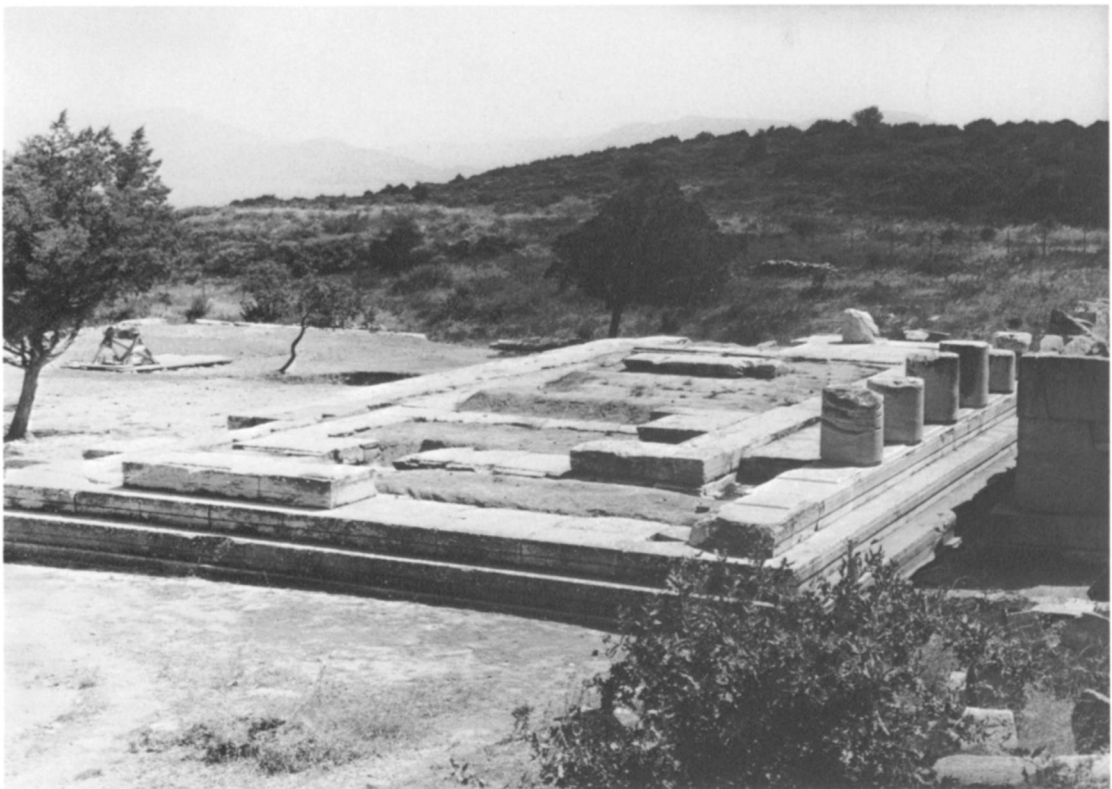
Unlike the frieze course of the Temple of Nemesis, the frieze course of the Temple of Poseidon was doweled into the epistyle course. Hence this reconstruction must be regarded as provisional until the evidence of the cuttings in the top surface of the remaining blocks of the epistyle is available (a large portion of the epistyle remains in place on the temple).

MARGARET M. MILES

AMERICAN ACADEMY IN ROME
Via Angelo Masina, 5
00153 Rome, Italy

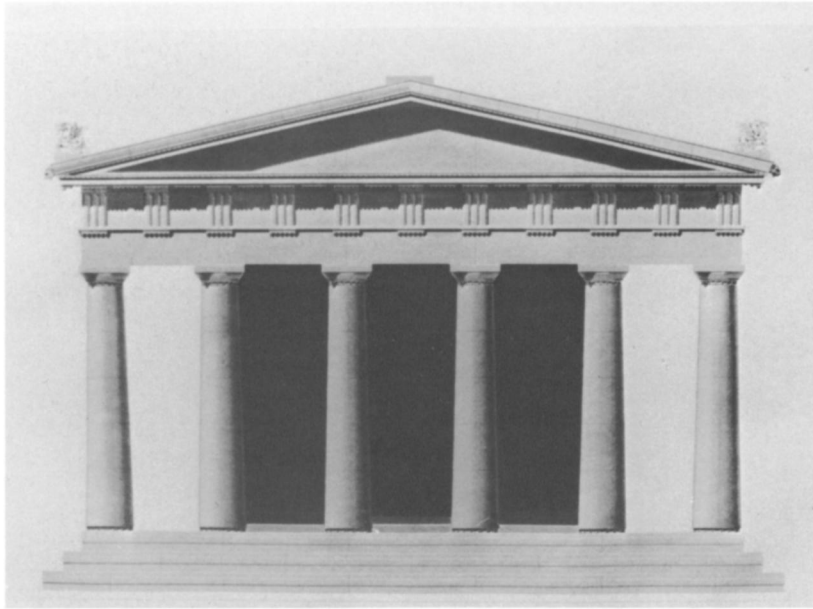


a. Temple of Nemesis from the east



b. Temple of Nemesis from the west

PLATE 30



a. Reconstruction of the east façade of the Temple of Nemesis by John Peter Gandy (*The Unedited Antiquities of Attica*, London 1817)



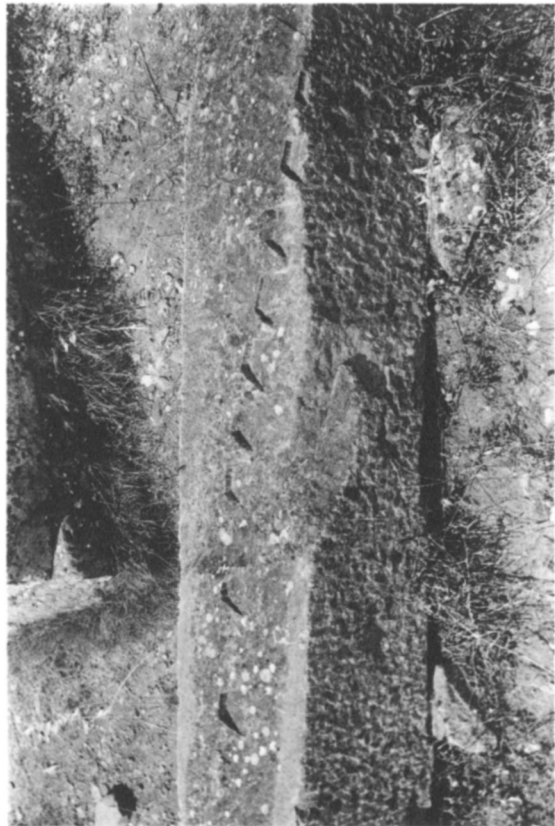
b. Temple of Themis from the east



a. Conglomerate packing in the southeast corner of the cella



b. Block of gray poros re-used as packing beneath the peristyle pavement near the southwest corner



c. Foundation packing block with wedge-shaped quarry cuttings



d. Cuttings for lifting tongs in the top of a fragmentary backer block

PLATE 32



a. Temples of Themis and Nemesis from the east



b. Temple of Poseidon at Sounion: krepidoma

a. Fragment of a geison block with incised guide lines for guttae



c. Euthyneria of the Temple of Nemesis at the northeast corner of the Temple of Themis



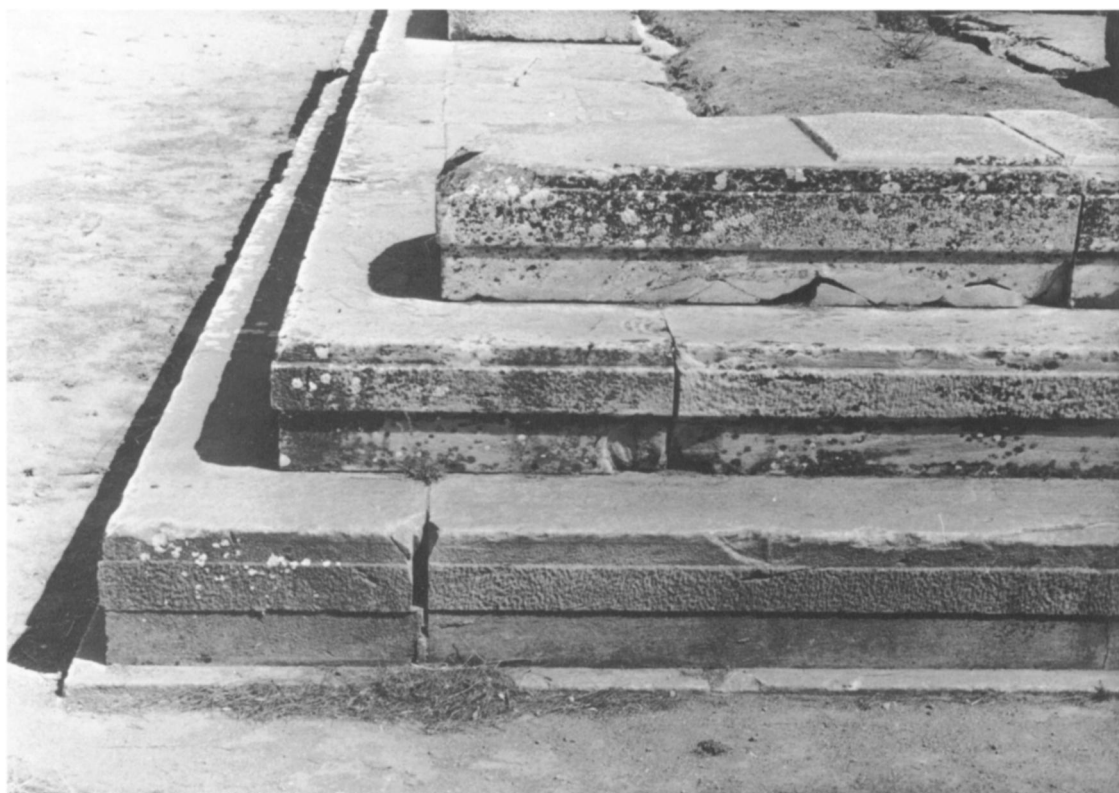
b. Bottom of drum D10 224J with incised guide lines for the placement of an empolion

MARGARET M. MILES: A RECONSTRUCTION OF THE TEMPLE OF NEMESIS AT RHAMNOUS

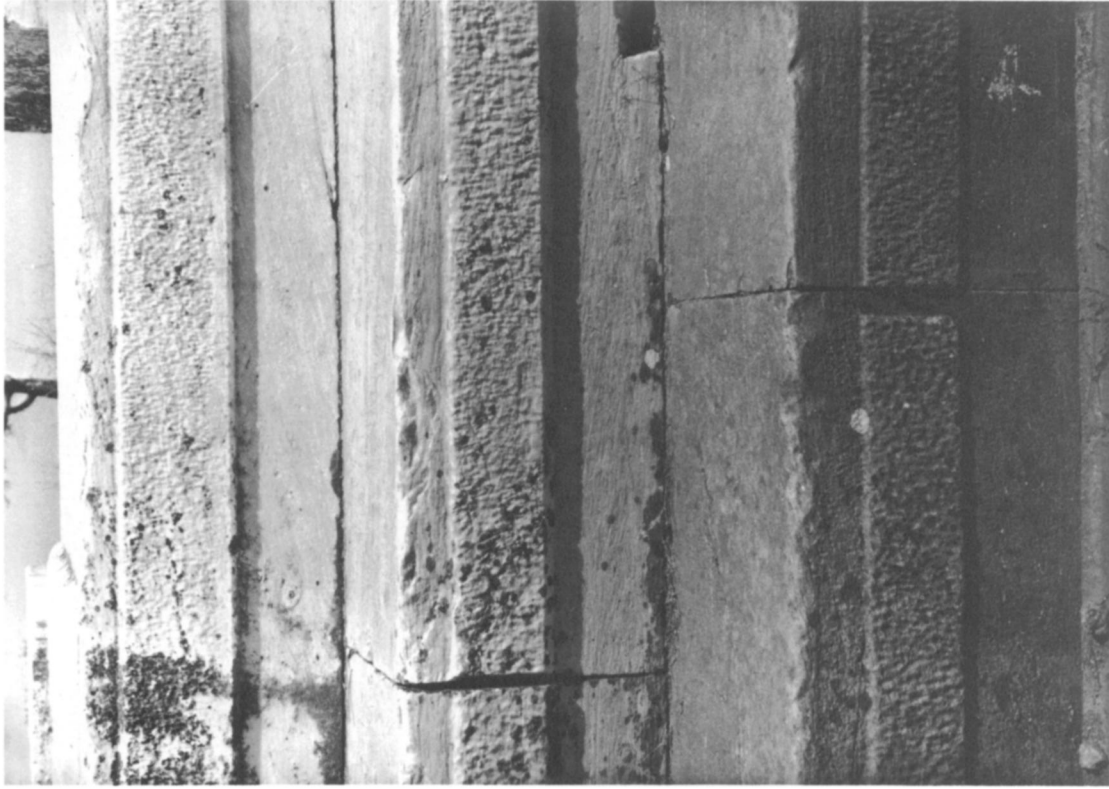
PLATE 34



a. Raised ledge on the top of the euthyteria, east side



b. Euthyteria and steps on the south side at the west end



b. Euthyneria, south side



a. Steps, north side, with horizontal stippled bands



a. Top of the middle step, north side, showing polygonal joints, chisel marks, and pry holes



b. Middle step, north side, from the west, showing polygonal joints



c. Stippled panel left on the stylobate, south side; raised lip on outer edge



d. Southwest corner block of the stylobate



b. Bottom drum D4 6A
(upside down)



a. Intermediate column drum D24 45B, split and weathered



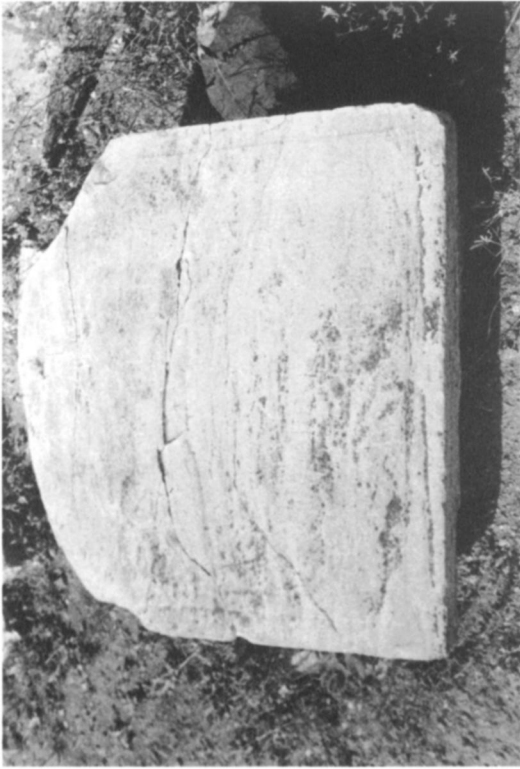
c. Bottom drum *in situ* on the stylobate, south side



d. Bottom drum D18 233M, south pronaos column, partly fluted



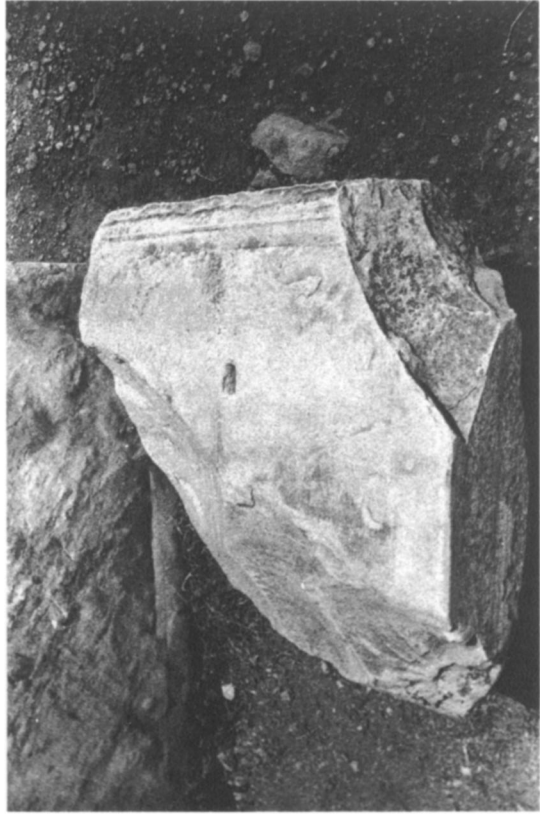
a. Capital C3 47B



b. Capital C7 211D/E



c. Larger capital C8 216J



d. Temple of Poseidon, Sounion: top of a capital showing the dowel hole for the epistyle



a. Frieze block of four units F19 11A (MTMT)



b. Replacement frieze block of the Roman period F26 173J (MT)



c. Top of frieze backer FB4 117D with cuttings from two periods of use



d. Temple of Poseidon, Souinion: frieze block N-5

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a. Left side of geison block G31 103I, from position P on the south flank



b. Top of corner geison block G2 141J



c. Detail of the re-entrant corner of b (G2 141J)



d. Top of corner geison block G4 130E



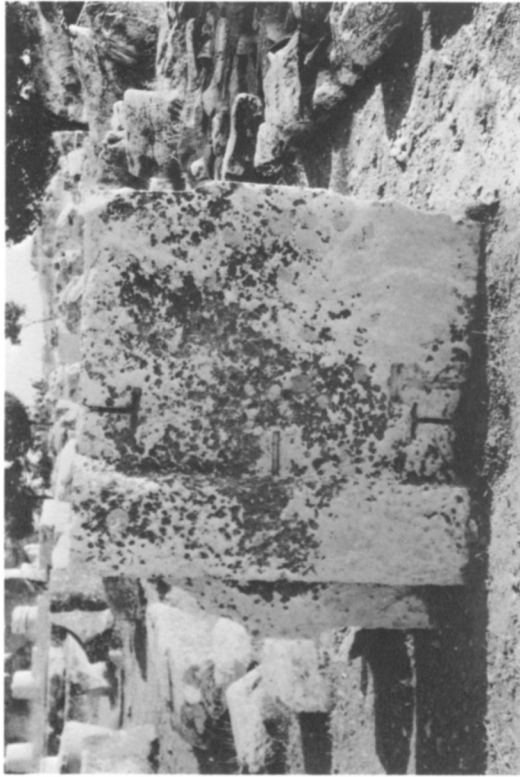
a. Top of corner geison block G3 132D



b. Top of corner geison block G1 100I



a. Top of flank geison block G25 158E, showing the configuration of typical blocks



b. Top of flank geison block G12 58D



c. Top of front horizontal geison block G45 56C



d. Top of front horizontal geison block G60 41A (Roman replacement)



a. Top of central tympanon block P5 161E (face uppermost)



b. Top of tympanon backer P4 131E



c. Tympanon backer P6 218D



d. Tympanon backer P6 218Dbis with cutting for purlin

PLATE 44



a. Raking geison block RG1 142C (original). At left, fragment of Roman replacement RG3 143C



b. Sima block fragment RT1 68B: inner end with an integral stop for the second-row cover tile; first-row cover tile in place



c. Temple of Apollo, Bassai: trapezoidal backer block to support the sima above the flank geison

d. Temple of Apollo, Bassai: front of a flank geison block showing the inclined ledge to support the sima

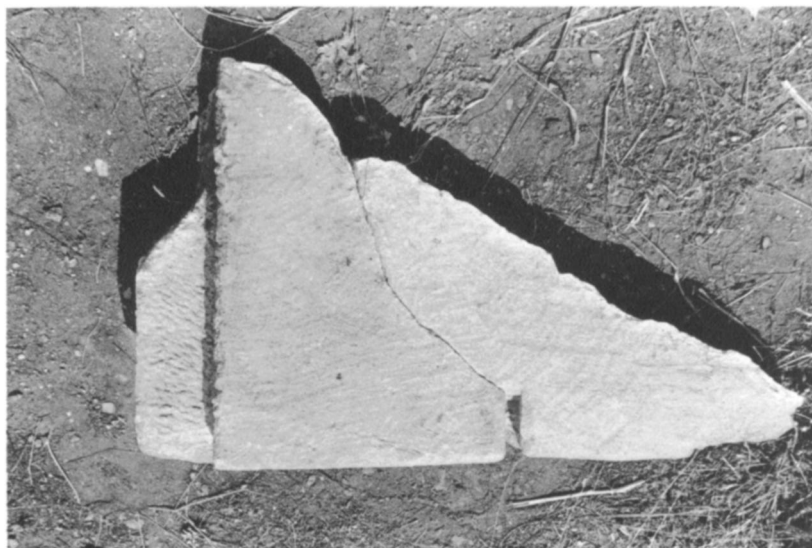




a. Bottom of the southwest corner sima block RT4 134D with a cutting for a blind dowel



b. Fragment of central akroterion base RT5 140D, from the side



c. Bottom of b (RT5 140D)



a. Pavement of the southwest corner of the pronaos



b. Cella paving block with cuttings for temple furnishings

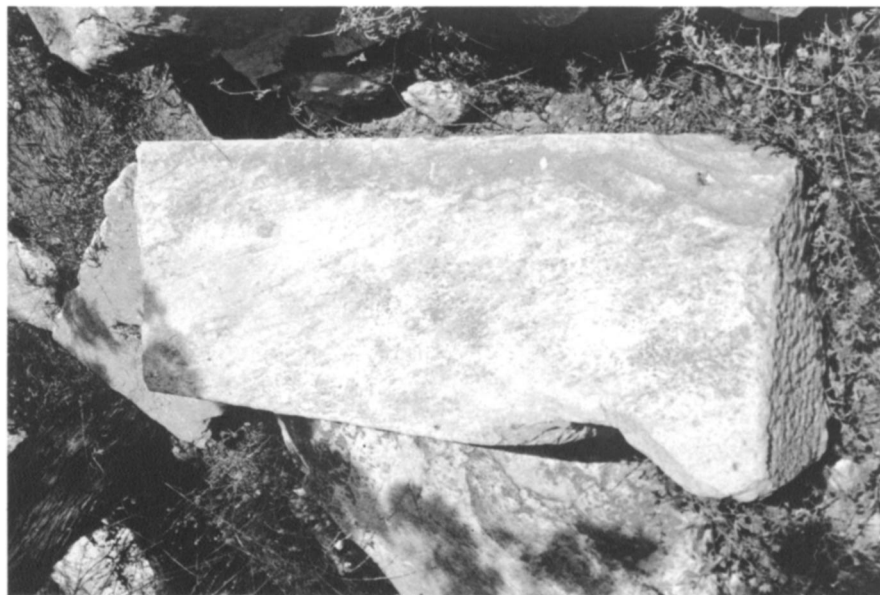


c. Toichobate on the south side of the cella, from the east



d. Exterior orthostate block T2 44B

a. Top of flank ceiling beam CB3 169B/C



c. Soffit of porch end beam CB6 180D/E

b. Fragment of a filler panel set into a beam slot (upside down)



a. Top of epikranitis block Ep1 33A



c. Soffit of a coffer grid incised with a letter B



b. Top of a coffer grid with a beveled end