

NOTES ON THE INTERIOR OF THE HEPHAISTEION

THE problem of the interior of the Hephaisteion, though it was not then so identified, aroused some of the bitterest controversy of the mid-nineteenth century, a series of polemics which it seems needless to imitate in the twentieth. Yet the author of *Observations on the Hephaisteion*¹ feels that the arguments presented in the published version of Broneer's "Notes" on the same,² while less misleading than the manuscript originally submitted, should not be passed over in silence. On the former occasion, by correspondence, it was possible to eliminate some of Broneer's erroneous conclusions;³ others, supported more by logistic than by archaeological reasoning, remain to be controverted in print.

Broneer's basic claim that "the restoration of the interior colonnade is structurally unacceptable" because, apart from the housing into the east cella wall, it "is completely free-standing" and "a slight earthquake . . . would be sufficient to set the whole interior colonnade in motion," seems to have bothered Greek architects far less than it does him. For elementary acquaintance with Greek construction shows that its basic principle was one of concentric disconnected rectangles; the few instances of cross-bracing, whether at foundation or at ceiling level, are so rare as to demand special comment. Instead, however, of exhausting the reader's patience with a discussion of the improbability of marble crossbeams such as Broneer restores within the cella, we may turn at once to the concrete evidence of the Hephaisteion.

The crucial feature is the single surviving block of the interior architecture, an end block of the upper epistyle, of which Broneer accepts the identification if not the interpretation. He admits (p. 246) that the upper cutting on the square end is a shifting-notch, and accepts my statement that at the bottom is another shifting-notch, and also that at the opposite end, a little below the top, is a third shifting-notch. All three notches differ in kind according to a well-recognized rule, and their peculiarities are fully illustrated in my Figs. 30 and 33. On p. 249, however, Broneer suddenly decides that "the shallow notch at the top of the square end appears to have originated from the dismantling of the colonnade. It is roughcut in a manner wholly at variance with fifth-century practices." He fails to note that this is a normal fifth-century fulcrum notch, or to explain the accompanying cuttings below and at the opposite end. What is the explanation of this reticence? Undoubtedly it lies in the fact that

¹ Dinsmoor, *Hesperia*, Suppl. V, 1941.

² Broneer, *Hesperia*, XIV, 1945, pp. 246-258.

³ *Ibid.*, p. 246, note 1; compare also Broneer, *A.J.A.*, XLVI, 1942, pp. 577-581.

these cuttings are fatal to his theory. All three cuttings are characteristically fifth-century in forms and uses; and the only possible uses of the two cuttings at the bottom and top of the square end are in connection with a continuation of the *same narrow epistyle along the same line*,⁴ not with an abutment against a solid wall at right angles. The arrangement illustrated in Broneer's Fig. 1 (p. 249) is contrary to the reading of the evidence. Even if one could accept the improbable assumption that the interior epistyle was erected first and the corresponding wall course subsequently laid against it, as the disposition of the dowel and shifting-notches shown in his illustration would demand, it would still have been impossible to employ the fulcrum notch, in particular, for the adjustment of a wall block at right angles; the fulcrum in such a case must have been on the wall and not on the epistyle, and neither dowel nor notch would then have appeared at the bottom of the epistyle. Broneer apparently perceived that this would be an objection to his restoration and therefore argued that the fulcrum notch is mediaeval. Since it is unquestionably fifth-century, however, and has all the complementary cuttings (below and opposite) used in the fifth century, his restoration must be abandoned. His simple explanation that to overcome all difficulties "it is sufficient to turn the block around in the same position, so as to place the square end toward the wall," is absolutely contrary to the evidence.

The other details of Broneer's alternative restoration are subordinate to this main fallacy and do not require comment. A more puzzling item, and one concerning which more light would be welcomed, is that of the stippled and waterproofed walls. I do not feel that Broneer's arguments have assisted us in our effort to obtain a solution. To be sure, each is entitled to his personal opinion as to the decorative character of the stippled walls; but in merely restating Thompson's opinion on this subject,⁵ without explaining the concomitant peculiarities of the unique relieving margins and the almost unique waterproofing, Broneer leaves us in a purely negative position. His so-called proofs that the stippling was not done on the ground before erection, because of the absence of stippling inside the joint surfaces against which the east cross-wall abutted, or because five blocks in the lowest course of the west cross-wall are not stippled on the exterior, are not cogent in any degree. Broneer is to be commended for the reserve with which he offers his own explanation of the lead waterproofing, either the Greek architect's "ignorance of structural principles" or a racket of "those interested in lead production . . . selling a useless idea to the unsuspecting Demos." It would have been more to the point if, instead of implying that my only analogy for the "waterproofing" in the Hephaisteion is that in the Stoa of Zeus (which he regards as equally dubious), he had not totally ignored my reference to the spring-house in

⁴ See Fowler and Wheeler, *Handbook of Greek Archaeology*, p. 104, fig. 59 = Paton and Stevens, *The Erechtheum*, p. 191, fig. 117; also Dinsmoor, *A.J.A.*, XXX, 1926, p. 10, fig. 5.

⁵ Dinsmoor, *op. cit.*, p. 100, note 217; Thompson, *A.J.P.*, LXX, 1944, p. 190.

the Amphiareion at Oropos where the same system was adopted, obviously for waterproofing, though with cement rather than lead.⁶

WILLIAM B. DINSMOOR

COLUMBIA UNIVERSITY

⁶ Dinsmoor, *op. cit.*, p. 103, note 230 (with the waterproofing only in the vertical joints as in the Hephaisteion and the Stoa of Zeus). It is unnecessary to waste time in discussion of the innumerable minutiae appearing in Broneer's article, such as his contention that waterproofing, if intended as such, should appear also in horizontal joints (the fact of the case being that for keeping horizontal joints tight the Greeks relied upon pressure and perfect jointing, while vertical joints presented a different problem, as may be seen today where vertical joints have opened and afforded lodgment for vegetation), etc.