THE DEVELOPMENT OF MINOAN ORTHOSTATES*

(Pls. 31-32)

The development of ashlar masonry in Crete is thought to originate in the Early Minoan (EM) period when rubble socles were surmounted by rubble and/or mudbrick construction, as at Vasiliki.¹ Then, shortly after the beginning of the Middle Minoan (MM) period, the bases of exterior walls of important buildings started to be lined with cut stone blocks set rather like dadoes, as in the MM IB facade of the Early Palace at Phaistos where the base of the wall consists of a projecting krepidoma with large orthostate blocks on top.² A similar method of construction was employed at the early MM ossuary at Chrysolakkos, north of the Palace of Mallia, where the Minoans first experimented with the cutting of hard limestone blocks ("sideropetra") with saws of copper or, more likely, of bronze.³ At the MM II "Agora" at Mallia, thin slabs were set along the edge of the court.⁴

At both Chrysolakkos and the Phaistos palace, which contain the earliest examples of orthostates reported up to now from the Aegean, all wall structure above the orthostates was composed of rubble, usually strengthened by a framework of horizontal and vertical timbers. The positioning of horizontal timbers above the first ashlar course can be determined through a close examination of the round or square mortises cut in the tops of blocks into which wooden dowels would have been set. The

dowels would have projected far enough to fit into corresponding mortises cut in the wooden beams.⁵

That there was no ashlar masonry above these wooden beams is strongly suggested by the rubble construction actually found at this level at Phaistos and by the fact that at neither site were squared ashlar blocks found fallen or discarded near the facades themselves. In the case of the Phaistos facade, the rubble and timber construction was carried up uniformly at least one storey to a flat roof. At Chrysolakkos the top of the rubble wall may have been crowned by coping blocks. Part of the interior of the ossuary was, presumably, unroofed.

In structures built during MM III, or not long after, roughly isodomic ashlar courses, often set upon a projecting socle, continued up to roof level, although such walls in Crete would almost invariably be confined to exteriors exposed to the weather, as for instance along the west facade of the Central Court of the Palace of Kato Zakros,⁶ or to unroofed interiors, like the lightwell of the Hall of the Double Axes at Knossos.⁷ Even at this relatively late date, however, the exteriors of important civic buildings were not uniformly of ashlar construction. Evans did not realize, for instance, that even the facade of the Palace of Knossos along the West Court originally consisted of an ashlar base with rubble construction on top.⁸ This last wall, probably built in MM III, is a peculiar one, for orthostate blocks were set along both interior and exterior faces, and then were joined transversely by means of wooden struts with ends cut in the form of "swallow-tails" set into corresponding mortises of the same shape.⁹

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¹ Discussion of the construction at Vasiliki can be found, along with the earlier references to R. B. Seager's excavation as well as later consideration by others, in J.W. Shaw, *Minoan Architecture: Materials and Techniques* (ASAtene 49, n.s. 33 [1971], Rome 1973; hereafter abbreviated as *MAMAT*) 11. For recent excavations at Vasiliki, see A. Zoes, "Ανασκαφή εἰς Βασιλικὴν Ἱεραπέτρας," *Praktika* 1979, 323-30.

² *MAMAT* 83-88. See now also D. Levi, *Festòs e la Civiltà minoica* 1 (*Incunabula Graeca* 60, Rome 1976) 31-35.

³ J.W. Shaw, "The Chrysolakkos Facades," Vol. A,

Πεπραγμένα του Γ' Διεθνούς Κρητολογικού Συνεδρίου (Athens 1973) 319-31. See also now H. Van Effenterre, *Le Palais de Mallia et la cité minoenne* (*Incunabula Graeca* 76, Rome 1980) 241-47.

⁴ *MAMAT* 91, and Shaw (supra n. 3) 331; Van Effenterre (supra n. 3) 189-91.

⁵ *MAMAT* 161-85.

⁶ N. Platon, "Ανασκαφαὶ Ζακρού," *Praktika* 1964, pls. 149a, 150a.

⁷ *MAMAT* 102.

⁸ *MAMAT* 88-90.

⁹ *MAMAT* 88-90, 157-61.

Ill. 1. Kommos, elevation of the W part of the wall with orthostates. (Drawing Giuliana Bianco)

This type of masonry, with a single course of blocks set upon a socle of projecting slabs, seemed up until now to be the final stage in the development of construction with orthostates in Minoan Crete. I had thought of it as a "stylistic finish," in contrast to later Greek architecture where the high orthostate course, as a somewhat similar but independent development, was retained as functional and pleasing even when the remainder of the wall above it was continued with relatively short, coursed and squared blocks.¹⁰ New evidence from the Minoan site of Kommos, in southern Crete, now requires a revision of this view.

During the 1981 excavations at Kommos, an unusual wall came to light, one built of large limestone orthostate blocks set upon a projecting socle and surmounted by an ashlar course (ills. 1-2; pl. 31, figs. 1-2; pl. 32, figs. 3-4). The wall forms the northern border of a very large Minoan building, "T," still to be explored. Despite the long use and exposure of the wall (weathering and stratigraphy suggest a

period of at least 500 years), there seems little doubt that the two courses were built at the same time and that they provide an example of a late stage of this type of masonry, combining orthostate with coursed ashlar blocks in the same wall.

The wall at Kommos faces north upon a 2.85 m. wide east-west road of some importance, furnished with an open drain along its northern side during its primary phases. The drain slopes westward toward the seashore, which is now less than 30 m. away. The road, paved with large limestone slabs in the 9 m. stretch on the west, lies between a series of large buildings on the south and houses of the town on the north, thus separating, as it were, the "downtown" area from the "suburbs" on the hillside and the hilltop. Its size, paving and location suggest that it served as the chief east-west thoroughfare to and from a busy seashore area.¹¹

¹⁰ Shaw (supra n. 3) 330, n. 16.

¹¹ J.W. Shaw, 'Kommos: The Southern Entry into Central Crete,' *ROM Archaeological Newsletter* 196 (September 1981). See also J.W. Shaw, 'Excavations at Kommos (Crete) during 1981,' *Hesperia* 51 (1982) 164-95.

Ill. 2. Kommos, sections of the wall. (Drawing Giuliana Bianco)

Approaching the Minoan town from the sea, in 1500 B.C., one first saw to the right a large, two-storeyed building (now called "J"), with a single wide entrance (pl. 31, fig. 1 right) on the north; its massive wooden door opened into a large room that is provisionally associated with seaborne commerce. Next to Building J and also fronting on the road is the wall with orthostates. From here the wall continues eastward and disappears below a series of Greek temples (pl. 31, figs. 1-2, far left).¹² Its full length is not known, but it is at least 22 m. long, for during the summer of 1982 we exposed a continuation of the same wall east of the Greek temples (pl. 32, fig. 5).

There is little doubt that along the southern side of this road were set the more monumental structures of the site of Kommos, built to impress the visitor who came from another part of Crete, or the foreigner who ventured from elsewhere. Our wall of orthostates, facing this road, is 1.25-1.36 m. wide, with the top of the socle 0.42 m. above the road. The socle projects 0.14 m. (average) from the wall.

Upon the sole loiterers may have sat, for in this spot there was always shade during the day. The orthostates themselves average 0.93-0.94 m. in height,¹³ varying from 0.70 m. to 3.44 m. in length,¹⁴ and they follow the gentle slope of the road down to the west toward the sea, the slope on the west being about 0.014 m. per meter. The socle follows the same inclination, at least part of which may be attributable to the general subsidence of the entire Kommos/Matala area. At the point where our section is made (pl. 32, fig. 4, left; at AA in ill. 1), we investigated the interior side of the wall and revealed portions of the backs of two orthostate blocks which appear to be flat (pl. 32, fig. 4) and only about 0.40 m. thick. The blocks are more like slabs set on edge, and are not cut in the shape of a triangle at the back, as is common in later Minoan ashlar masonry.

Set above the orthostates, and projecting beyond them to the south, is another course of ashlar blocks, 0.44 m. high (average). Like some of the orthostates, these blocks are much worn by time, but, where best preserved, on the east, the joints are so tight that the contemporaneity of the two courses can scarcely be doubted.

¹² J.W. Shaw, 'Excavations at Kommos (Crete) during 1980, *Hesperia* 50 (1981) 211-51.

¹³ As can be seen in pl. 32, fig. 5, one orthostate slab on the east (1.40 m. high, 1.52 m. long, 0.34 m. thick) is as high as the two first stone courses together. Perhaps this anomaly in an otherwise consistent wall construction

can be explained when more of the wall of 'T' is exposed east of the temples.

¹⁴ The orthostate block (lower course) on the right in pl. 32, fig. 5 (0.94 m. high, 3.44 m. long, 0.35 m. [average] thick) is the longest block of which I know in Minoan architecture.

Thus, they may well have been set originally on the orthostates with the purpose of holding them in their position by their sheer weight. Whether there were more ashlar courses on top of this course is not certain. On the other hand, although similar ashlar blocks were not found fallen near the wall west of the temple, they may have been removed and reused. We know that much of the southern face of the wall was removed during the LM III reuse of the general area. Moreover, the rough slabs now visible on top of the wall may postdate an earlier LM III reuse of the same wall. Also, there are no mortises upon the present upper ashlar course to indicate a transition to wood and then, probably, to rubble construction (see *supra* n. 5).

The interior or southern face of the wall, mentioned above, is peculiar for, about 0.84 m. above the original dirt floor, there is a stepped feature in which the plastered wall of slabs narrows abruptly to a face that is only 0.65 m. wide (ill. 2 and pl. 32, fig. 4). The narrowing of the wall seems related to the fact that when, in LM III, the floor level south of the wall was raised, the slabs forming the original inner face of the wall were removed for use elsewhere. Thus the original wall was narrowed in its final phases of use.

As far as we can see now, the wall with orthostates was built shortly after Building J was completed. Since we already know that J is most likely of early LM I date,¹⁵ and that during LM III ashlar work of high quality was not done at Kommos, the wall with orthostates was probably built in LM I. This chronological assignment is reasonable from the stylistic point of view as well, for the wall should fall at the end of the progression already described, from the early MM orthostates at Mallia and Phaistos through the West Facade at Knossos. It would seem, then, that at Kommos, at a time when coursed ashlar was used uniformly for exterior walls (e.g., in the walls of Building J), the builders made a decision to construct a particularly

impressive wall using orthostates. This high first course provided a continuation of the massiveness of the walls of Building J, and was a fitting monumental border for a major entry by sea into southern Crete.

JOSEPH W. SHAW

DEPARTMENT OF FINE ART
UNIVERSITY OF TORONTO
TORONTO, ONTARIO M5S 1A1
CANADA

¹⁵ Shaw (*supra* n. 12) 219.

SHAW PLATE 3 I

FIG. 1. Kommos, entrance to Building J (right), wall with orthostates (left) continuing below later Greek temple foundations. Looking E

FIG. 2. Kommos, Minoan road (foreground) and facade topped by later LM III slabs. Looking SE

PLATE 32 SHAW

FIG. 3. Kommos, detail of easternmost part of facade. Section in ill. 2 taken through blocks on extreme left. Looking S

FIG. 5. Kommos, part of facade E of Greek temples, Looking SW

FIG. 4. Kommos, southern upper face of wall with orthostates, with slabs of later LM III facing removed to expose interior. Looking N