

THE SILLS OF THE GRILLES OF THE PRONAOS AND OPISTHODOMUS OF THE PARTHENON

The writer has already published what he believes to be the essential facts concerning the sills of the grilles in the Pronaos and Opisthodomus of the Parthenon, although at the time he wrote his article no sill, or even fragment of one, was known to exist (Fig. 1).¹ The evidence for the sills was derived from various weather marks, cuttings, and scratches on the stylobate, columns, and antae. The results of that investigation may be summarized as follows:

1. The way the columns were dressed with a fifth-century anathyrosis against which the sills abutted, indicated that the sills were of stone, and, furthermore, that the sills formed part of the original design of the Parthenon.
2. The right section through the sills could be accurately recovered from the traces of contact between the sills and the columns and antae.
3. The sills were wedge-shaped in plan, so that they might be inserted from the rear, after the columns had been set up.
4. The sills supported wooden frames (consisting of jambs and lintels) most of the characteristics of which could be determined with certainty.

In August, 1940, the writer had the good fortune to identify two fairly large-sized fragments of the sills. Both blocks are now lying in the court west of the Parthenon, one at a point about five meters east of the Sanctuary of the Brauronian Artemis, the other at a point about seven meters east of the same Sanctuary. They corroborate the characteristics claimed above for the sills, and, moreover, furnish us with some additional information.

The better preserved fragment is illustrated in Figures 2 and 3. It is the left end of a sill. There is no doubt that the block comes from the Parthenon, for the fragment perfectly fits the traces of the sills on the stylobate, columns, and antae—that is, there is agreement in the width, height, wedge-shape, rabbet for the valves of the grilles, exterior base moulding, and other details of less importance. The block is of the best quality of Pentelic marble, like that of the rest of the Parthenon, and the workmanship is unmistakably of the time of Pericles. Figure 4 is a restoration, in isometric, of the end of the sill. The large sinkage is designed to receive the wooden jamb of the grille. It is to be noted that the weather line on the upper surface of the fragment (cf. Figs.

¹ *Hesperia*, Supplement III, 1940, pp. 69-73.

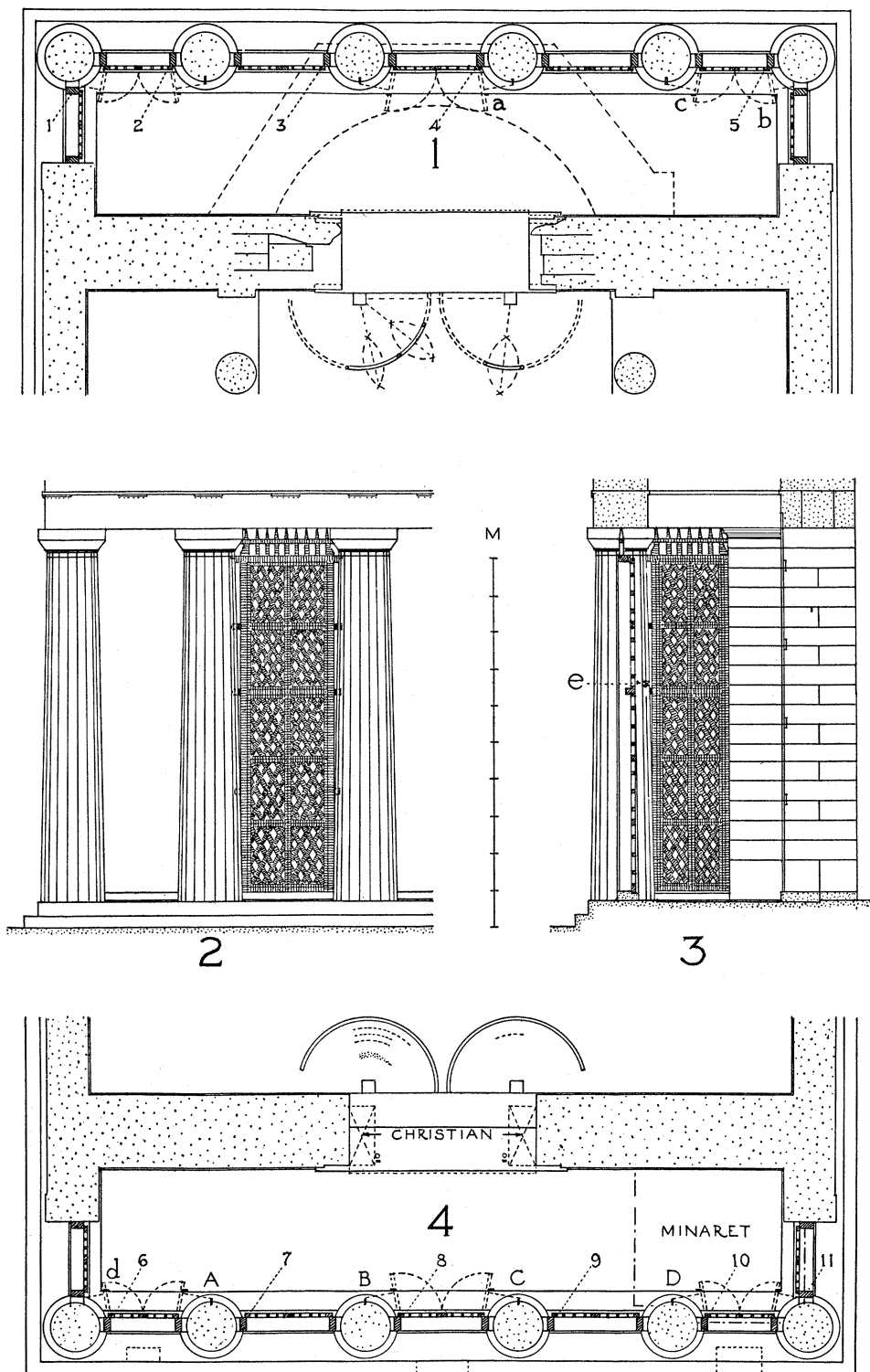


Fig. 1. The Grilles of the Pronaos and Opisthodomus of the Parthenon. Restoration

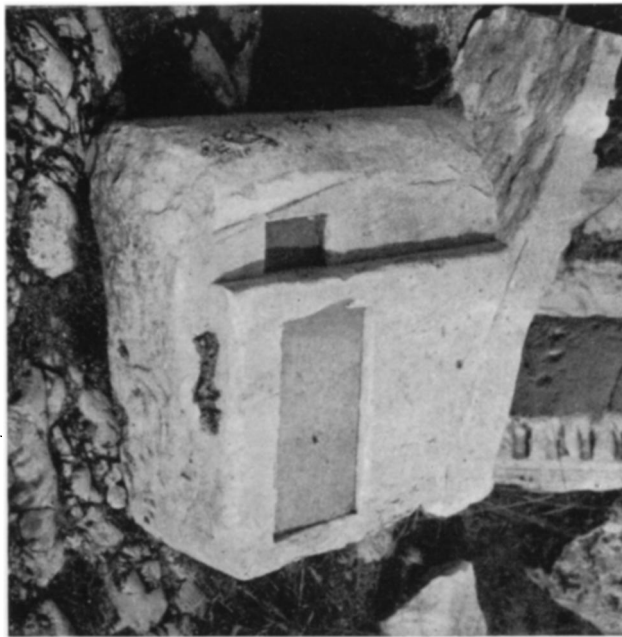


Fig. 2. Left End of a Sill: Fragment No. 1

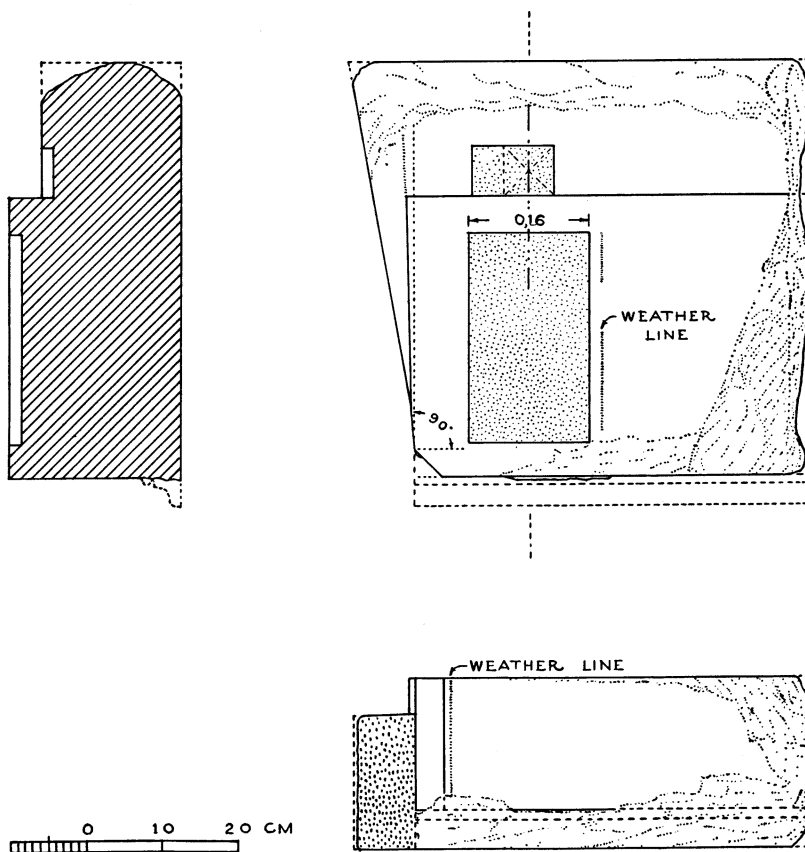


Fig. 3. Fragment No. 1. Plan, Elevation, and Section

3 and 4) indicates that a wooden core was sheathed with some material. A core of cypress covered with either bronze or a precious resisting wood such as ebony does not seem beyond the realm of possibility. As the core was of wood, we must think of the valves of the grilles as also being of wood, not bronze. And, if the valves were of wood, it is more probable that the sheathing of the cores was of the same kind of wood than of bronze. The smaller sinkage in the top of the fragment is for the socket of the pivot of one of the two wooden valves of the grille. It is also possible that one of the fixed grilles (cf. Fig. 1) was held in place by means of this small sinkage.

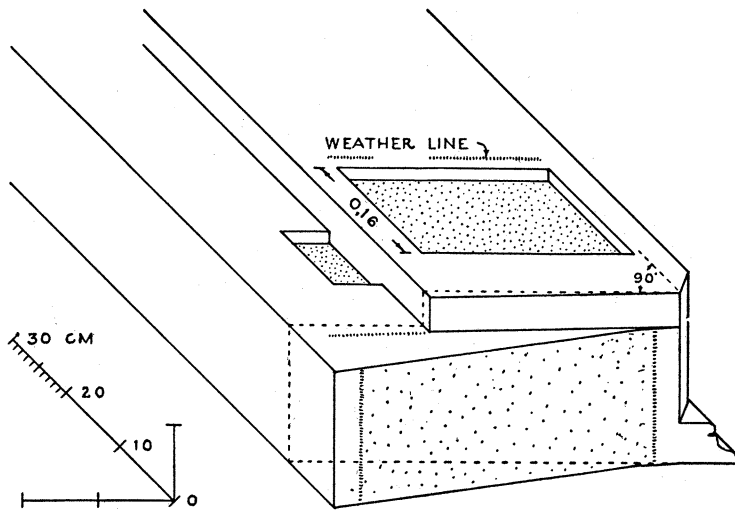


Fig. 4. Fragment No. 1. Isometric

The less well preserved fragment is shown in Fig. 5. Like the first fragment, it comes from the left end of a sill; that is, the two fragments cannot belong to the same sill, as both are left ends. The width of the sinkage for the jamb is 0.035 m. less than that of fragment No. 1: otherwise the two fragments are almost identical.

The general method of contact between sill and column is illustrated in Figs. 6, 7, 8, and 9. The way the columns were cut to receive the sills gives us the evidence that the sills were wedge-shaped—both ends of the sills made angles with the right section through the sill.

The four sills between the antae and the angle columns had only the ends in contact with the columns cut at an angle—that is, these sills were only half as much wedge-shaped as those between the columns.

In the Pronaos the traces of all the vertical mitered surfaces cut in the columns, against which the vertical mitered edge of the sills abutted, are visible today. In the Opisthodomus, on the other hand, the mitered surfaces of the columns were removed

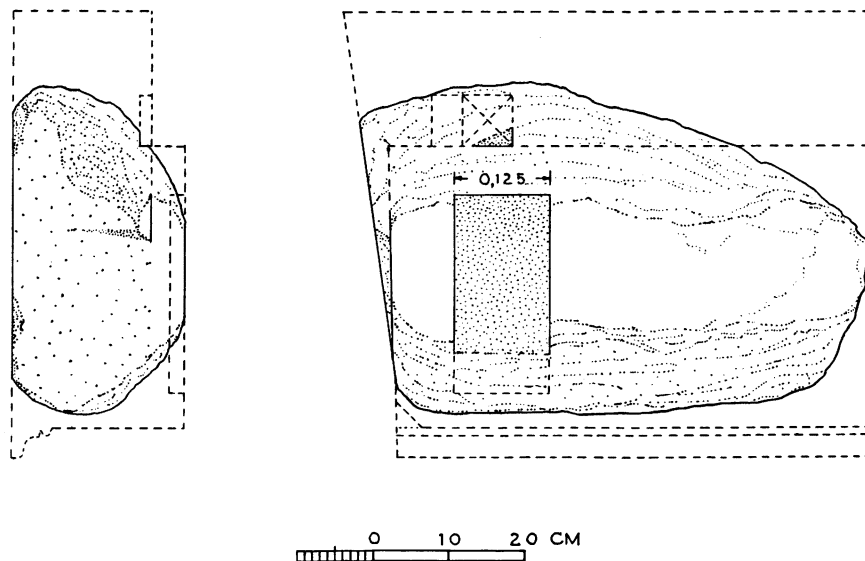


Fig. 5. Left End of a Sill: Fragment No. 2. Plan and End Elevation

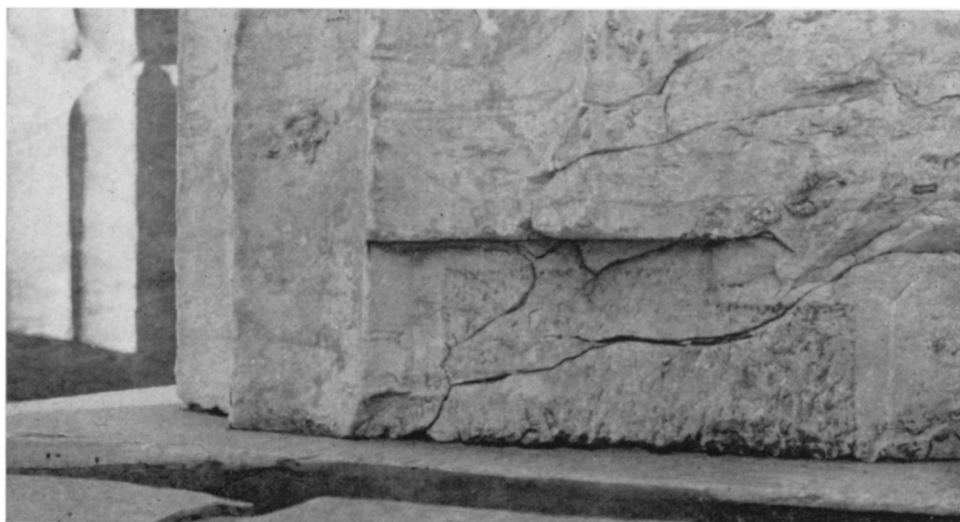


Fig. 6. General Dressing of Columns to Receive Sills: West Side of North Angle Column of Pronaos

at a comparatively late date, if one may judge by the poor workmanship displayed in cutting away the miters.² There is abundant evidence that in church times the intercolumniations were filled to a height of 4.25 m. with stone barriers. It seems probable, therefore, that the late cuttings referred to above are Christian.

There is but one exception to the general type of contact between the sills and the columns. The exception occurs in the intercolumniation immediately south of the central intercolumniation of the Pronaos (Figs. 1, 10, and 11). Here there are two pry holes³ and a difference of finish on the stylobate beneath the sill, which show that the sill was composed of two long pieces of approximately equal width (cf. Figs. 11 and 12), and that the east piece was set before the west piece. We may attempt to explain the exceptional sill in the following manner. Let us suppose that all the sills were originally planned to be like the exceptional sill. When Ictinus saw the first sill in its place, he realized that he could get rid of the long visible joint in the top of the sill and at the same time make a stronger sill by changing to a sill of one piece. But why should the sill in the intercolumniation immediately south of the central intercolumniation of the Pronaos be the first sill set? As the temple approached completion, materials of all kinds must have been carried into both the cella and the treasury through the central intercolumniation of the east and west ends of the temple. To facilitate such transport, there was, in all probability, a temporary ramp in the middle of either end of the temple, up which heavy materials, such as the column drums and architrave blocks of the interior, were moved. It is likely that the two sills immediately in front of the two doors of the temple were the last sills set on account of the desirability of keeping the passage ways between the central columns unencumbered until the last moment. We may imagine, then, that the two blocks of the first sill have been prepared in the ἐργαστήριον at the east of the Parthenon.⁴ They are brought to the east façade of the temple, worked up the incline, and find their resting place in the handiest intercolumniation, namely, in one of the two intercolumniations next the axis of the temple.

Is it possible to determine the original positions of the two fragments of sills (Figs. 3 and 5)? The following considerations will be of assistance in trying to answer the question:

1. The ends of both fragments—they are left ends of their respective sills—are cut correctly to fit any of the eleven positions indicated in Fig. 1.

² In the northern intercolumniation there is a partial exception—the northern contact follows the rule, but the original miter of the southern contact was reduced to a small miter.

³ Only one of the two pry holes is shown in Fig. 11. The two pry holes are symmetrically placed in the intercolumniation.

⁴ *Hesperia*, Supplement III, fig. 34.

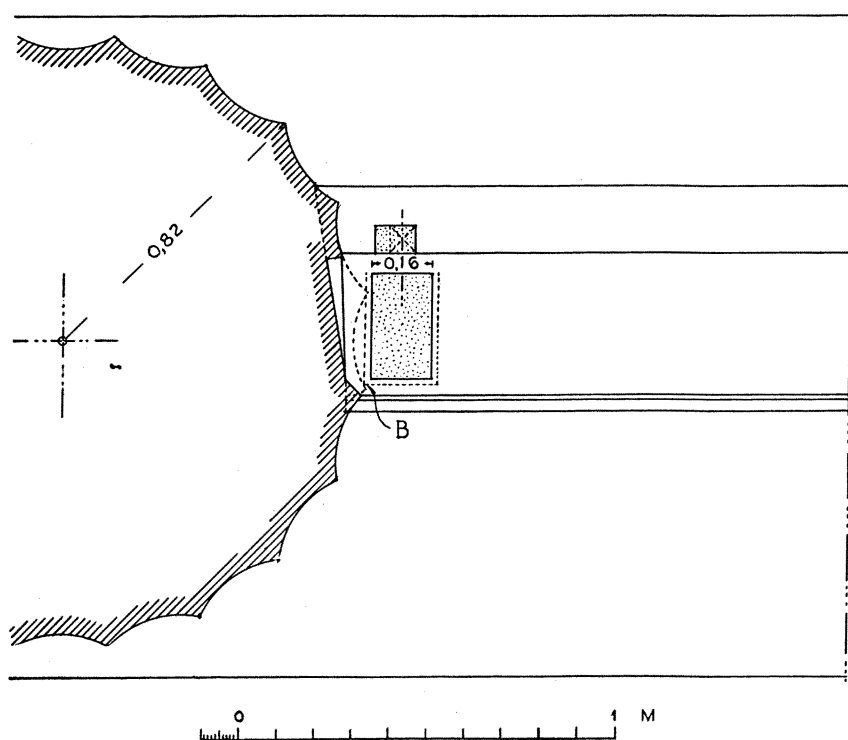


Fig. 7. General Relation Between Sills and Columns of the Pronaos

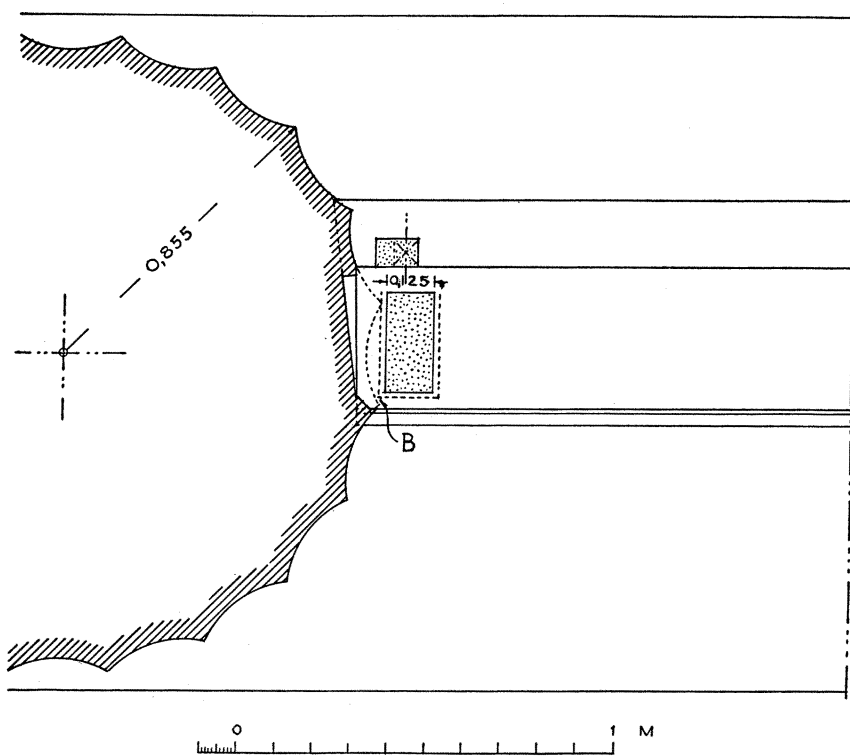


Fig. 8. Relation Between Sills and Columns of the Opisthodomus

2. The widths of the jamb cuttings in the two fragments of the sills are not alike. That of Figure 7 is 0.16 m., while that of Figure 8 is 0.125 m. There is a difference of 0.035 m. between the two measures. It happens that the radius of the columns of the Pronaos is 0.035 m. smaller than the radius of the columns of the Opisthodomus.⁵ If, therefore, the smaller jamb be associated with the column of bigger radius, and the bigger jamb with the column of smaller radius, the free opening between the jambs will be the same in Pronaos and Opisthodomus. Identical jamb openings for the Pronaos and Opisthodomus are confirmed by the following fact. The relation between the pivot cutting and that face of the jamb which is toward the center of the opening was the same at both ends of the temple (cf. Figs. 7 and 8). Thus the valves of the grilles at both ends of the temple had exactly the same width and consequently could have been, and undoubtedly were, identical in design. Fragment No. 1 (Fig. 3), with the wider jamb cutting, can then be assigned to the Pronaos. It may have occupied any one of positions 1, 2, 3, 4, and 5 of Figure 1. And fragment No. 2, with its narrower jamb cutting, can be assigned to the Opisthodomus, and may have occupied any one of positions 6, 7, 8, 9, 10, and 11 of Figure 1. The evidence does not permit of a more accurate allocation for the two fragments.⁶

In Figures 7 and 8 the sheathing is represented as covering the face and both sides of the jamb. By running the sheathing between the jamb and the column, the sheathing could be made to touch a flute of the column, while its front face could be set to the scratch in the flute at B, Figures 7 and 8.⁷ Objection may be raised that expensive sheathing was unnecessary between the jamb and the column as such sheathing would be hidden. This is true at the bottom of the column. But at the neck of the column there was an open space of 0.185 m. (one half of the diminution of the column) between the column and the

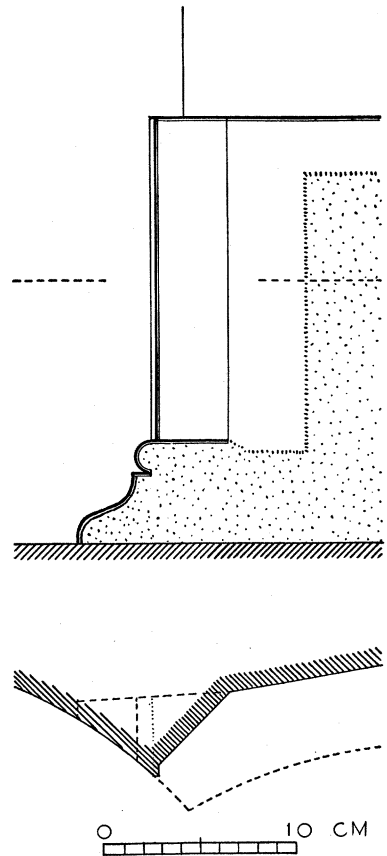


Fig. 9. General Method of Contact Between Silles and Columns. Detail

⁵ *Hesperia*, Supplement III, p. 67.

⁶ Pivot holes are generally square. As the pivot hole in Figure 3 is rectangular, it is just possible that the sill to which the fragment belonged supported a fixed grille. In that case, the fragment can be assigned to only one of two places, namely, 1 and 2 of Figure 1.

⁷ *Hesperia*, Supplement III, p. 71.

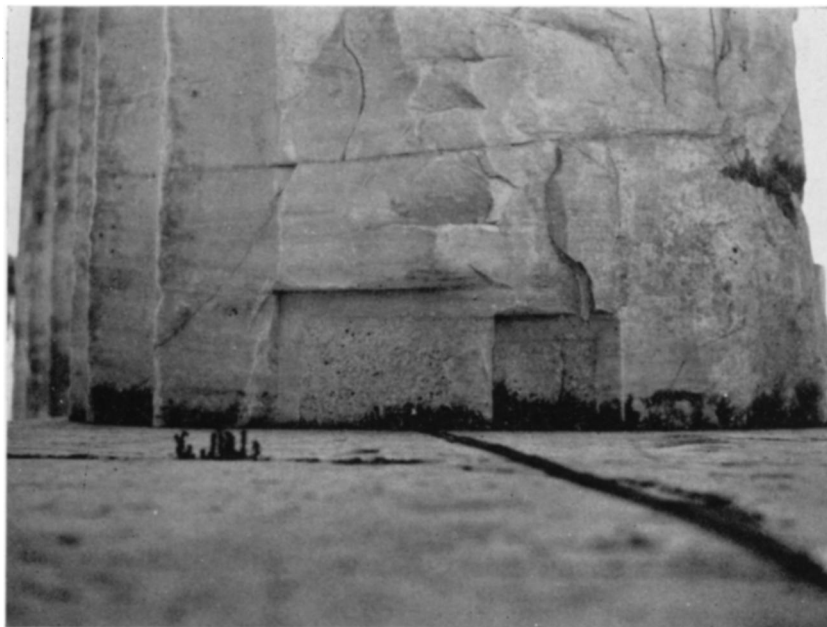


Fig. 10. Special Column Dressing to Receive the Sill South of the Central Intercolumniation of the Pronaos

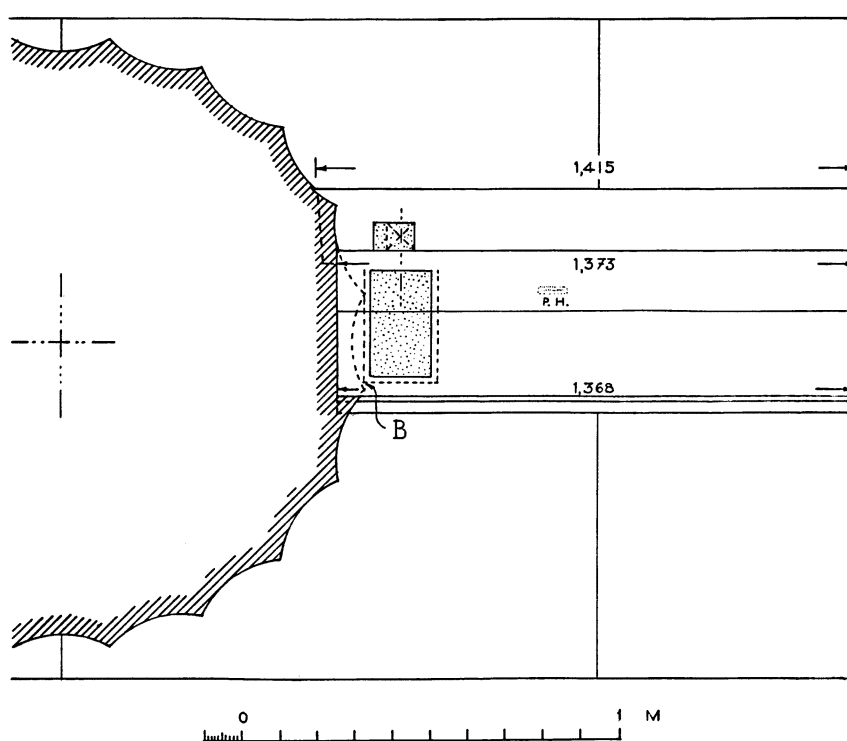


Fig. 11. Relation Between the Column and the Special Sill South of Central Intercolumniation of the Pronaos

jamb, provided the jamb were vertical. Certainly all the stiles (the upright members) of the valves of the grilles were vertical if the valves were to swing properly. A vertical jamb to go with the vertical lines of the valves therefore seems quite in keeping. There is another indication that the jamb was in contact with the column only at the bottom of the column, for the flutes of the column are as carefully cut from top to bottom back of the jamb as they are anywhere else on the column—these flutes were meant to be seen. If the jamb had been in continuous contact with the column from the bottom to the neck, the column would have been dressed to receive the jamb by the removal of the arris behind the jamb, just as was done in the case of the contact between the column and the end of the wooden lintel of the grille.⁸ Thus there can be little doubt that the jamb was vertical.

A glance at Figs. 4, 6, 9, 10, and 12 will give the reader an idea of the forethought and care needed to cut both the sills and the columns, so that the difficult junction between the two would be as nearly perfect as possible. Note that the exterior joints were concealed.⁹ The best stonecutters of today, in spite of their improved tools, cannot do better work.

That there were wooden grilles carried on marble sills in the Pronaos and Opisthodomus of the Parthenon—grilles which entirely filled the intercolumniations—may seem an unusual feature. Yet this was the general practice in Athens in the time of Pericles—the careful observer finds evidence today for precisely similar grilles in the Nike Temple and in the “Theseum.”

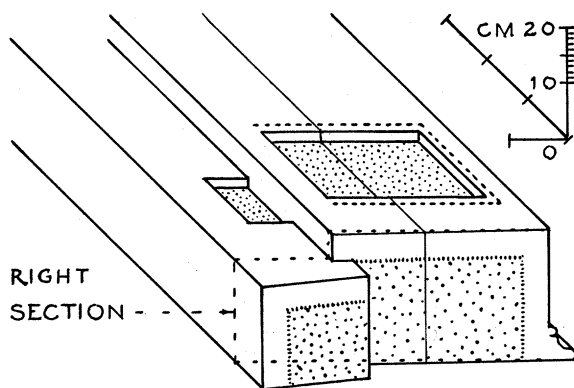


Fig. 12. South End of the Special Sill South of the Central Intercolumniation of the Pronaos.
Restoration in Isometric

APPENDIX

In *Setting of the Periclean Parthenon*, p. 73,¹⁰ the writer advanced the theory, that only the lower compartments of the valves of the doors in the grilles swung inward, and that the upper portions of the grilles had no swinging valves at all. From new data at his disposal he now believes that the upper portion of those grilles also opened (there being, of course, two valves to each opening). The height of the dowels

⁸ *Ibid.*, p. 71.

⁹ Only in the case of the abutment of sill against anta was an exterior joint of contact visible.

¹⁰ *Hesperia*, Supplement III.

at A, B, and C, Fig. I, 4, is given in the same figure at 3, *e*. The position of dowel *e* indicates that the dowel had something to do with the upper portion of the grille rather than with the lower portion of the grille; that is, it probably implies a bumper-fastener for the upper portion of the grille. If this is so, then the upper portion of the grille swung inward. It is not likely that the upper portions of the grilles would be opened except during festivals.

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