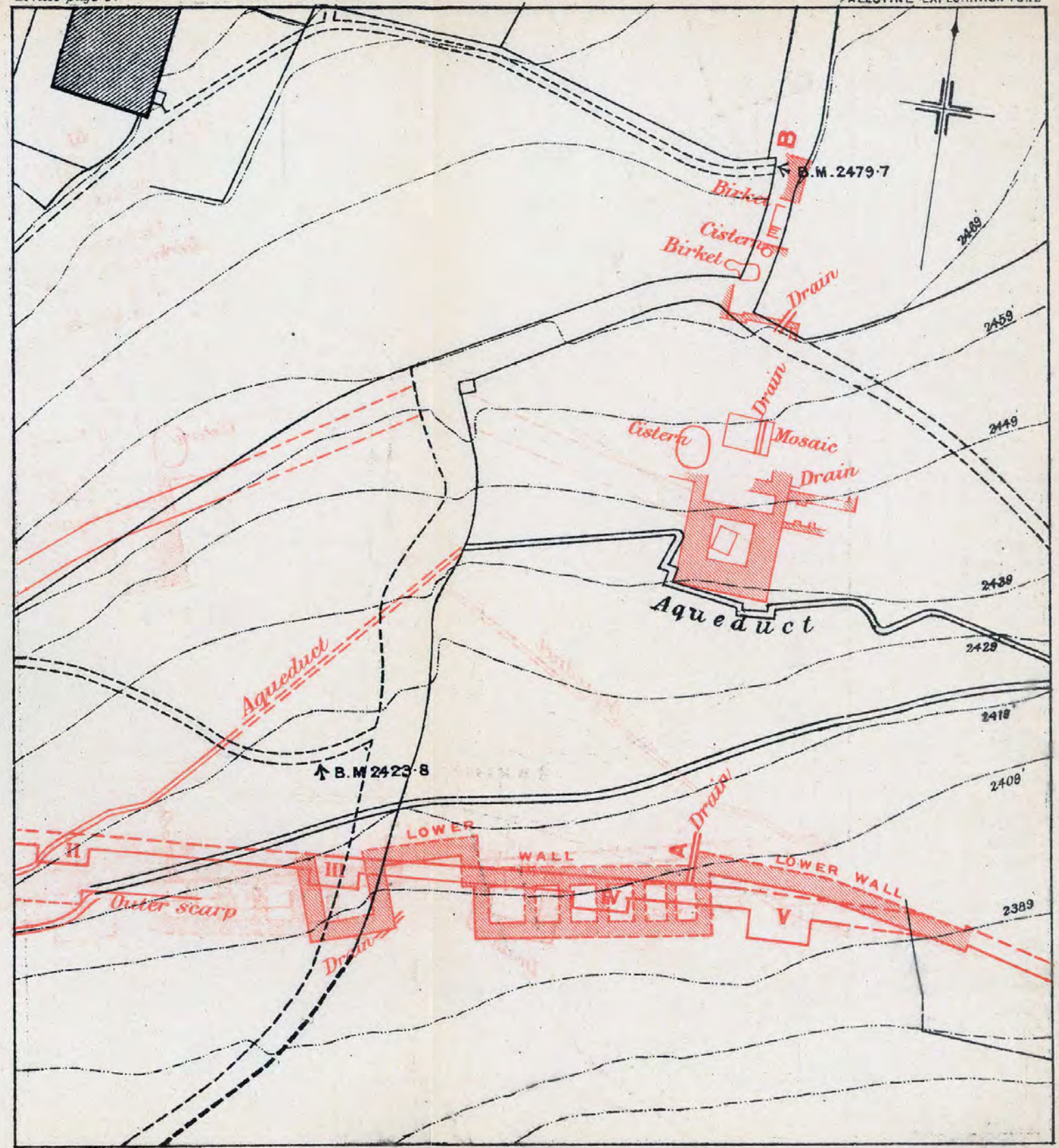
To face page 9.

GENERAL PLAN TO ILLUSTRATE THE EXCAVATIONS AT JERUSALEM

PALESTINE EXPLORATION FUND



SCALE

SEVENTH REPORT ON THE EXCAVATIONS AT JERUSALEM.

By F. J. Bliss, Ph.D.

At the close of my last report I mentioned that we had already begun the north and south section of the western hill, which the Committee desired to be made from a point somewhat east of what is marked as "Inferred Tower" on the January plan to B.M. 2479.7, on the road coming from Bâb Neby Daûd. I shall call this Section AB. It will be remembered that our systematic following of the wall from the Protestant Cemetery to the east was interrupted by a field, 14 feet beyond Tower III, with whose proprietor we failed to come to terms, though in a single day of work the wall was seen at two points along the same line respectively 54 and 112 feet distant from Tower III. We resumed the systematic tracing of the wall in the "cauliflower patch" at a point 320 feet distant from Tower III (along the inferred line), and thus 208 feet beyond the last point seen in the forbidden field. The masonry in the "cauliflower patch" consisted of strong foundation rubble of large and small stones, in some parts set in courses, resting on the rock. No dressed masonry was found till we got to the tower near the Jewish Cemetery. The drafted stones seen there were again observed when we picked up the wall where it emerges from the other end of the cemetery, and also at every place where it was seen between this point and the Pool of Siloam. This drafted work was in contrast to the smooth masonry seen all along the line from the fosse near tower at Protestant Cemetery, to the point in the "forbidden field," 112 feet from Tower III. There was one important exception, however, at Tower I (at the south-west angle of the old city), where the later work is built on a somewhat different line from that of its substructure of rough, drafted masonry. The rough foundations seen after the interruption evidently belonged to the line of what I may call the drafted wall traced to the east. As to the smooth wall, I thought that it followed the line of the earlier wall (which it was seen to touch at Tower I) as far as where it was last seen, 112 feet east of Tower III, and then it might have swung to the north-east to enclose the upper city, or it might have continued to follow the old line to the south-east, where the latter was only repaired.

The "forbidden field" was thus recognised as a critical point, and I was very glad when at last we came to satisfactory terms with the proprietor, and our tents were pitched under his olive trees. The object of the Section AB was to lay bare the rock, studying all walls and scarps that might cross the line. At the same time, I wished to determine the course of the "smooth wall." As mentioned in my last report, a tower was found just where it had been inferred, which becomes Tower IV;

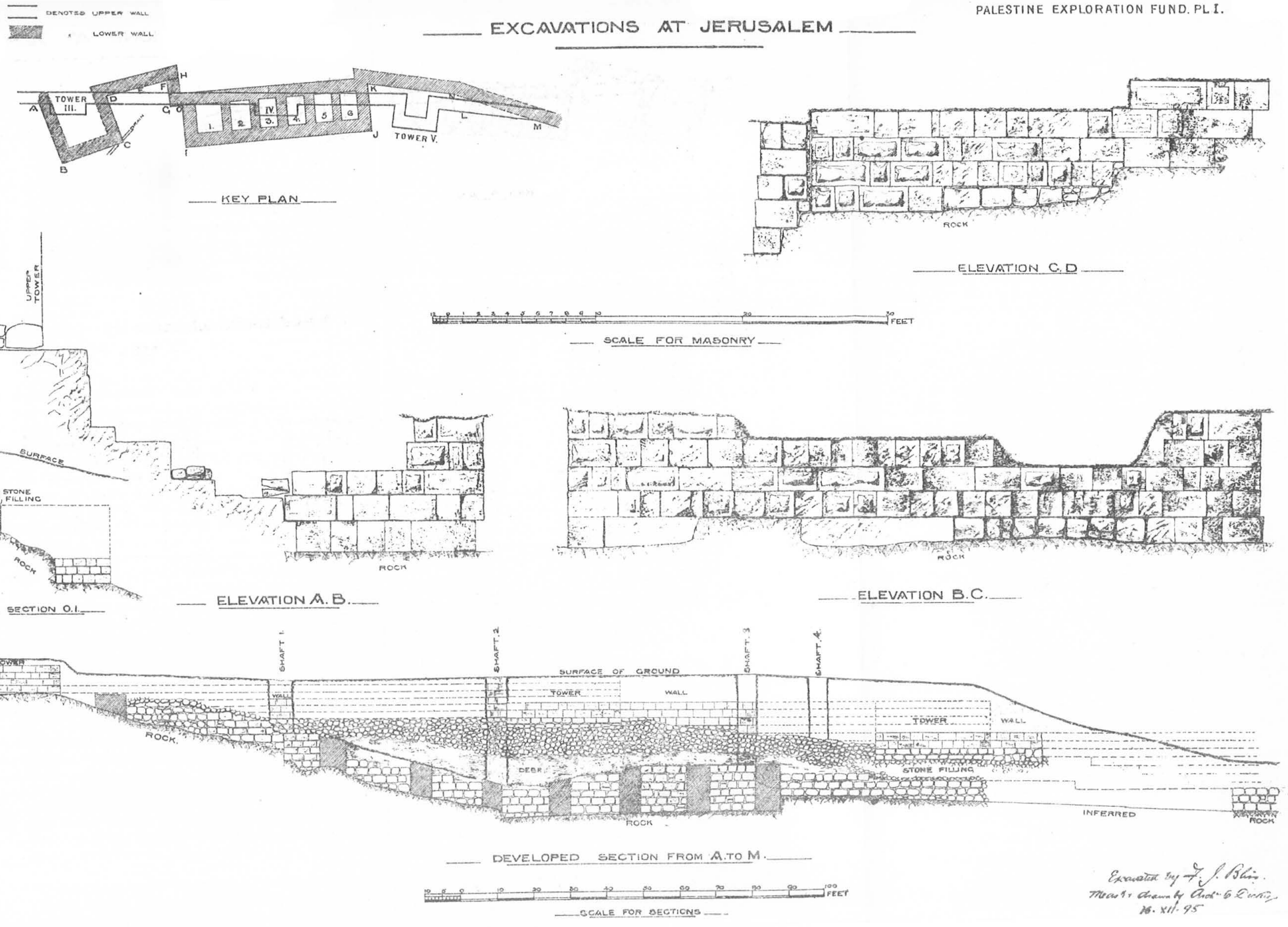
70 feet to the east was found Tower V, which projects 16 feet from the wall, whereas Towers II, III, and IV project only 9½ feet. As all the other towers are 120 feet apart, the short distance of 70 feet between Towers IV and V led me to hope for a gate, especially as the point midway between them is in a continuation of the line of the road from the Damascus Gate. Unfortunately, exactly at this point the good masonry coming from the west, and seen along the *inside* line, is broken off, only the foundation rubble remaining. A drain coming from the north, 3 feet 9 inches high, 2 feet 3 inches broad at its cemented bottom and 1 foot 8 inches broad at the top, is here ruined at the junction with the wall. This was an encouraging clue, as we hoped the drain might run under a paved road, but the search for this was vain. Hence the question of a gate here must remain a moot point: in favour of it are the nearness of the towers and the position of the drain, together with the smooth *inside* face seen here, a point also noted for a few feet north of the gate on this same line to the north-west, but not beyond. Against it is the fact of another gate only 180 yards distant from this point, measured along the line of wall. As the rubble foundations, which consist of large and small stones roughly laid in strong mortar, here rest on *débris*, it is 14 feet thick for strength, the main wall being only 9 feet. The rubble was traced to the west outer angle of Tower V, when the smooth masonry again appeared, and was traced with more or less interruption, where the wall had been robbed of stones, around the rest of the tower and 16 feet beyond on the line of wall to the point L,[1] 50 feet from the foundation wall in the cauliflower patch (M)[1] to which it was directly pointing. The identity of the two thus seemed clear, but to exhaust all possibilities I trenched the ground from the point M for some 70 feet to the north-west, finding no sign that the smooth wall had altered its course. This may seem a roundabout way of arriving at a conclusion which could have been reached by connecting the two points, but those 50 intermediate feet of land belong to an unpleasantly small proprietor, whom it would not have been economical to tackle.

I remarked at the end of my last report that in this field the smooth wall did not rest on the rock but on rough rubble built on several feet of *débris*, which covered the ruined top of a massive older wall resting on the rock, running in a somewhat different line. This latter was first struck in Shaft 3, sunk along the inner face of the smooth wall, as a commencement of the Section AB. It was then followed to the east and west with the following results.

To the east it was pushed to N, where only rude foundation work occurred similar to that seen last year at M, to which it was generally pointing. As to the identity of the two there can be no doubt. To the west the masonry was followed to the corner, B, and then 12½ feet towards A, where it butts up against the rock, which has been stepped up to carry on the now-destroyed masonry to A, where Tower III of the

[1] These letters refer to the key plan, Pl. I.

EXCAVATIONS AT JERUSALEM



Excavated by F. J. Bliss.
Measured & drawn by Archt. C. Dickie
16. XII. 95

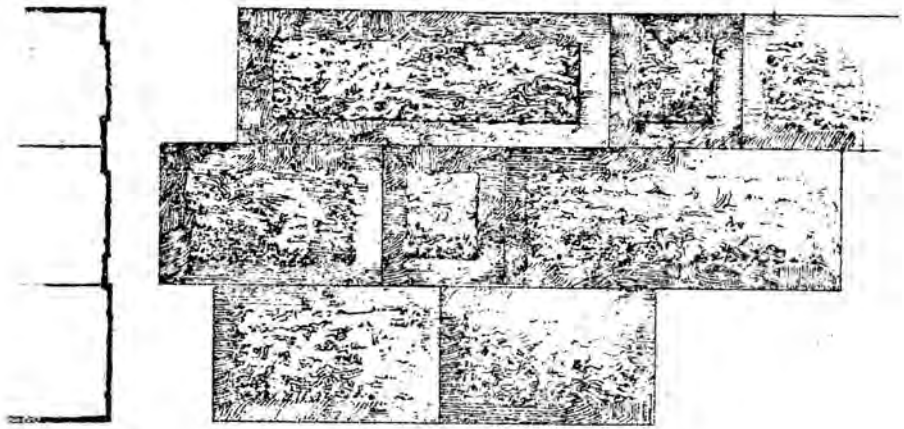
upper line rests upon the rock. Here, plainly, the two lines coincide. They have also been seen to coincide at Tower I. Between Towers I and III the rock is not far from the surface. The inference thus is that between Towers I and III the older wall was ruined to the rock, or perhaps to the lowest course of stones noticed in my third report, and that the later line followed the earlier between these two points. At A the earlier line runs out to form the Tower ABCD, but the later builders carried their wall on straight, and finding the rock deeper as they went east disregarded the old line of wall, sometimes resting their rubble foundations upon it, as seen in Shaft 1 on the developed section from A to M, Pl. I, and sometimes merely on the *débris* with which the old wall was buried, as seen at Shafts 2 and 4. At the point M the rock is nearer the surface, and here the later builders again ran on to the old line, as we have proved above. The absence at tower near Jewish Cemetery and on to Siloam of the smooth masonry, characteristic of this upper line, may be explained in two ways: either the old wall was in such good preservation that it needed only to be repaired, the smooth stones of the reparation having since disappeared, or else the later line again diverged from the older in a north-easterly direction, somewhere east of the point M. This point could only be settled by an examination of the old wall, beyond the point M, along its inside face, which would be impossible did the divergence take place in the Jewish Cemetery. The absence, beyond Tower V, of towers at short intervals, characteristic of the later line, is certainly curious.

We may now study the lower or older wall from A to M, the points between which the upper or smooth wall runs on another line. (*See* key plan, sections, and elevations, Pl. I.) After forming the Tower ABCD the line runs north-north-east to F, then breaks out to G, and resumes the former direction to K. Projecting from the wall, GK, is a series of six chambers. Their length is 21 feet, with the exception of No. 2, which is 2 feet longer, owing to a recessing of the back wall. Chambers 2 to 6 vary in breadth from 12 feet 2 inches to 13 feet 6 inches, while No. 1 is 17 feet broad. The division walls are not bonded into the back wall, but run back into it. In place six courses of the back still remain, the masonry of which (*see* specimen at OK) is similar to that of the divisions, and consists of hammer-dressed stones, roughly squared and badly set, with a few bossed stones interspersed. A vain but thorough search was made along this back wall for doors to the chambers. As the rock bottom is rough and slopes rapidly to the south (*see* Section OI), the inference is that the chambers are ruined to their cellarage. Of the front wall, IJ, only one to three courses remain, varying from 24 inches to 29 inches in height. The stones, which are set in mortar, are roughly squared with quarry-picked faces, comb-picked at the edges, but this wall presents a decidedly smoother face than the back wall, as may be seen by comparing specimens at IJ and OK. The corner stone at I is drafted and better worked. The lowest corner is set on 18 inches of rubble bedded on lime and ashes. It is 8 feet 6 inches thick, the back wall being somewhat more. It does not

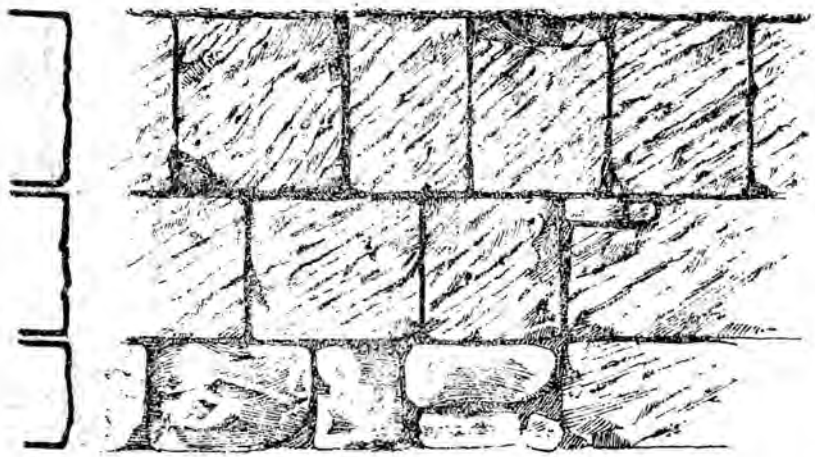
stand on a scarp, and a tunnel driven on the sloping rock for 30 feet south showed no sign of scarp or rock-hewn ditch.

This system of projecting chambers, clear now as it appears on the plan, puzzled us for a long time. We first struck the back wall behind Chamber 6 and then found its east wall. It looked as if we had found a tower, but whether we were inside or outside of it was not clear, as the inside face of the front wall of the chamber-system was here ruined. In the meantime, in Shaft 2 we had again struck the back wall and the west wall of Chamber 3, and worked our way to the west wall of Chamber 2. We then pushed westwards along the back wall from Chamber 6. I have explained how the division walls were let into the back wall; that between Chambers 5 and 6 was so ruined that we took the straight joints in the back wall to represent a filled-in gateway, and pushed on till we came to the division between Chambers 3 and 4. The idea of the series of projecting chambers occurred first to Abu Selim, who proposed to establish this hypothesis for that of the towers. Accordingly we re-examined the supposed gateway, which turned out to be the letting in of a division wall, broken off at the junction but running south in one foundation course. In the same way we traced the much-ruined division between Chambers 4 and 5. The wall IJ was then looked for, and found in front of the Chambers 1, 2, 3, and 6. At J the ruin was complete, though the wall KJ was traced for some distance south. But that the point J is the true outer angle of the chamber-system is proved—(1) by the altered direction of the main wall from K on; (2) by the fact that in tracing it 50 feet to N no more division walls were found; and (3) by the fact that the wall KJ is more massive than the division walls, being 7 feet thick, similar to OI.

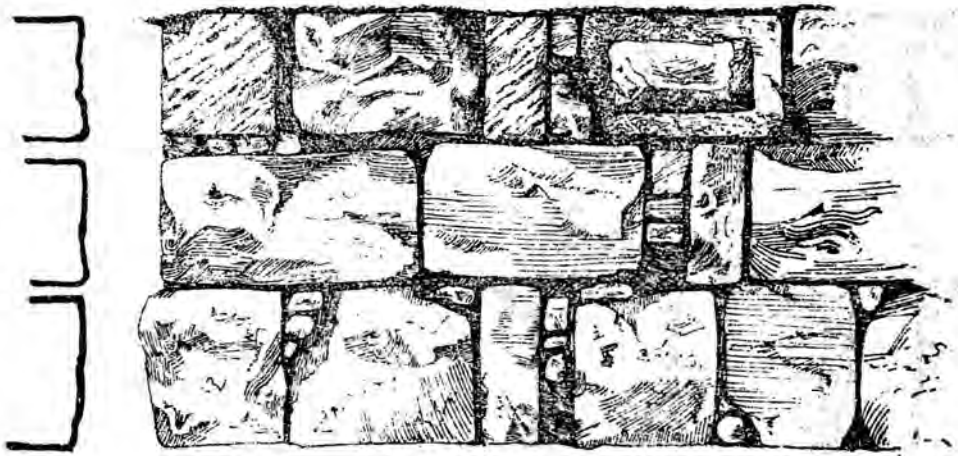
There was some difficulty in finding the corresponding west wall, OI. We were led astray by a later wall which seemed to belong to Chamber 1, as it ran south from the back wall, appearing to give 13 feet as the breadth of that chamber. But from the very first it looked suspicious, as it was only 4 feet 6 inches thick (the other divisions averaging 6 feet), and instead of showing the massive rough masonry of the divisions, it consisted of small rubble, bedded in mortar, standing to a great height and having a distinct batter. The men nicknamed it the "sheep-fold wall." Moreover, the wall against which it butted up could not be the expected wall IJ, as it was only 4 feet wide, and its outer face occurred 3 feet inside the point which IJ should cut. Again, these walls were 3 degrees off the axis of the building. This "sheep-fold wall" started on the rock, but the caving in of the very loose *débris* banked against its battered face prevented our following it on the rock along its length. Sinking to the rock at the end of our tunnel, we found the true wall IJ, in the expected position and direction. Pushing a few feet further west we found a straight joint between the wall IJ and the south wall of the "sheep-fold" system, which, no longer having the wall IJ for its foundation, had sunk to the rock and continued west. Breaking through this wall at the corner I of older wall OIJ, we followed the latter north for 15 feet, where it butts up



SPECIMEN AT D.



SPECIMEN AT I. J.



SPECIMEN AT O.K.

Excavated by F. J. Bliss.
Measured drawn by Arch. G. Dickie.

against the rock and runs out (as shown in Section OI). This accounts for our not having seen it when tracing the main wall west from G, but the points of former junction are clearly marked. What I have called the "sheep-fold" system of later walls is omitted from the plan to avoid confusion, as it has no organic connection with the city wall.

The part of the wall OGF presents a decided patchwork; a large stone similar to the great stones at the Jewish Wailing Place has been cut down and inserted, together with Roman column bases. As DF runs to the back of FG, the true line, from the outer corner I, may once have run back to H, which thus would have been the original inner angle, OGF being an alteration of the line. The masonry along the length EF is similar to the work at IJ, which helps the theory. But at E a straight joint occurs with rough rubble on to D, which is not bonded into the wall CD. The position of DF naturally suggests the ingoing of a gateway, and careful search for this was made. The rock along the base of DF is sloping and irregular; breaking in at E we followed the wall to east and west, finding it in places in its natural rough condition, in others cut as for quarrying stones, with a scarp 6 feet high, no sign of gate or roadway being visible. The inference was that there never was a gate-opening here at the level of the rock at the base of DF, and, if an opening had ever occurred at a higher level, all traces had been destroyed by the upper wall, which here ran over the lower.

The three sides of the Tower ABCD are drawn in elevation. Three periods are distinctly recognisable on the east side. From D for 10 feet we have the most beautifully set work we have observed in our excavations (*see* Specimen at D). The fine rubbed jointing can be compared only to the work at the Jewish Wailing Place. No mortar is used. The stones are perfectly squared, the broad margins are worked fine and smooth, while the centres are chisel-picked. The courses are 23½ inches high.

Where this fine work is ruined there is bonded into it rougher set masonry of an entirely different character; three styles of dressing are observed—(1) rough quarry-picked stones as at IJ, Pl. II; (2) stones with rustic bosses like the work figured on p. 245 of the July *Quarterly;* and (3) fine-picked stones with comb-margins, evidently re-used from the original wall which still remains at D. After continuing 21 feet this masonry ends in a straight joint beyond which there is a later extension of the face. The drain, which is cut in two by this new face, belongs to the earlier period. The masonry of this fresh face does not differ in character from the work just described and continues to the corner B, where it is set forward 6½ inches from one course of stones, whose dressing and fine setting are exactly similar to the work at D. As at the other end we saw the corners of the second and third periods, so here we see the corners of the first and third periods. Whatever the line of the earliest face may have been, this projection of the latest work is evidently due to the desire to make the face square with the sides of the tower.

On the west side the masonry continues a distance of 12½ feet, beyond which it is ruined, but the carefully stepped-up rock shows how the wall had been carried up to the point where the upper line diverged from it.

This lower wall, which we have been describing in detail from A to N, while evidently a continuous line, has shown us several styles of masonry, and we may now recapitulate these with a view to asking: Which style should be taken as characteristic?

The work at KN is only rough foundation, similar to that at M, without indication of the style of superstructure. The back wall, OK, is also rough foundation. FGO is patchwork. DE is filling in. Hence for the original work we must look to the outer wall, OIJK, of the chamber-system which presents one style, similar to EF and to the Tower ABCD. The stones of the wall, OIJK, present a comparatively smooth face, being well set, but are quarry dressed and roughly squared. Though certainly *in situ*, as the wall here must have been extremely lofty, the three courses left may not represent the character of the upper part of the wall. The original masonry of the Tower ABCD is indicated by bits at D and B. In the two periods of reparation there have been used (1) stones from the original masonry of the tower, (2) quarry-picked stones such as appear at IJ, and (3) bossed stones which characterise this same wall from the Jewish Cemetery south-east to the gate near Siloam and on as far as traced. Hence, if any conclusion can be drawn from these *data* it would seem that the earliest work we have seen on the continuous line of wall between the Protestant Cemetery and Siloam is at D and B, and at OIJK. How the fine jointing of the former corresponds to that of the Jewish work at the Haram area I have pointed out before.

A word as to the relation of this lower line to the upper line. The layer of accumulated *débris* between the ruined top of the lower wall and the rubble foundations of the upper wall, as seen in the Section AM, between Shafts 1 and 4, shows that between the periods of the two walls there intervened a time when no city wall existed at this point. This indicates such an extended interruption in the life of the city as history shows no example of, except after the destruction by Titus. Hence it seems a natural hypothesis to refer the lower wall to Jewish times and the upper wall to the Roman or Christian periods. The former certainly ran down to Siloam, while the course of the latter is not certain beyond the point M.

These few pages may not have given, at first reading, an idea of the magnitude of the labour expended in attaining the above results. The reader must look between the lines. He must note that the brief sentence, "a vain but thorough search was made for doors along the back wall," indicates a tunnel 25 feet long. The length of shafts and galleries worked in this excavation amounts to about a quarter of a mile. Using only part of the stones which were exhumed, the proprietor was able to construct a wall to his premises 150 feet long, 4 feet high, and 4½ feet wide. Many of the stones had to be broken up in the tunnel so that they might be hauled up a shaft 40 feet to the surface. Hence the work progressed slowly along the line GK, where the *débris* consisted mainly

of large stones, which were dislodged with great skill by Abdallah, our best quarryman, who managed to keep his tunnel perfectly safe. Again the work was very difficult along the front wall IJ, for this had been quarried for stone and the loose shingle sometimes ran like water. The stones of the upper line west of Tower V seemed to have been recently stolen, as the old pit was filled with a light soft soil most dangerous for tunneling, but 'Isa, one of Warren's excavators, boxed his tunnel beautifully, stepping it down, box by box, as the base of the wall fell, and cleverly turning the corner at the inner angle of the tower. The work went rapidly around the Tower ABCD, as it is buried in firm brown soil, easy to excavate, where it pays to make your tunnel high and narrow, both for ventilation and ease in removing the stuff. Twelve feet north of B the rock rises rapidly and Ahmed neatly accomplished his task of driving a tunnel up-hill, stepping nimbly out of the way of the rolling stones.

It was extremely interesting, as well as a tax on the mind, to trace these two walls running about in the same line, the one above the other. One inconvenience in excavating is that you can never see your whole work at one time. For example, after clearing out and measuring one partition in the chamber-system we filled up the tunnel with earth from another gallery. Indeed during a few days most of our workmen were underground. On rainy days this was most convenient. But though many people penetrated our tunnels no one but ourselves saw the entire work. Still those who looked down Shaft 1 could form a clear idea of what we were following, for at one glance they could see the surface soil, the smooth upper wall, its rough rubble foundation[1] resting on the corner G of the drafted old wall, and finally the rock below all. At Shaft 2 they could see the same archæological stratification with the addition of the *débris* separating the two wall-systems. This *débris* was mainly brown mould containing potsherds.

The reader may now begin to understand how this excavation took nine weeks, though other shafts were worked at the same time both at Siloam and along the Section AB. The filling up of shafts and tunnels occupied some days longer, and now the field has resumed its ordinary appearance. It will, however, bear a better barley crop next year owing to the turning up of the soil.

We now come to the second division of the season's work, namely, the study of the rock along the Section AB. This extended from a point behind the back wall of No. 6 of the chamber-system to B.M. 2479.7 on the road coming from Bâb Neby Daûd. The direct distance is about 400 feet, but the shafts employed in reaching the rock and the following of clues to right and left bring up the length of shafts and galleries to much more than twice that amount. Ground was broken at a point

[1] In one of his letters, Dr. Bliss remarks: "The rubble of the later wall is of rough stones, large and small, not built in courses, held together by mud with a slight admixture of lime. Where this rubble rests in the earth it is 14 feet thick" (*see* above, p. 10).

50 feet north of the back wall, the rock was reached at a depth of 31 feet 6 inches, and a gallery driven south.

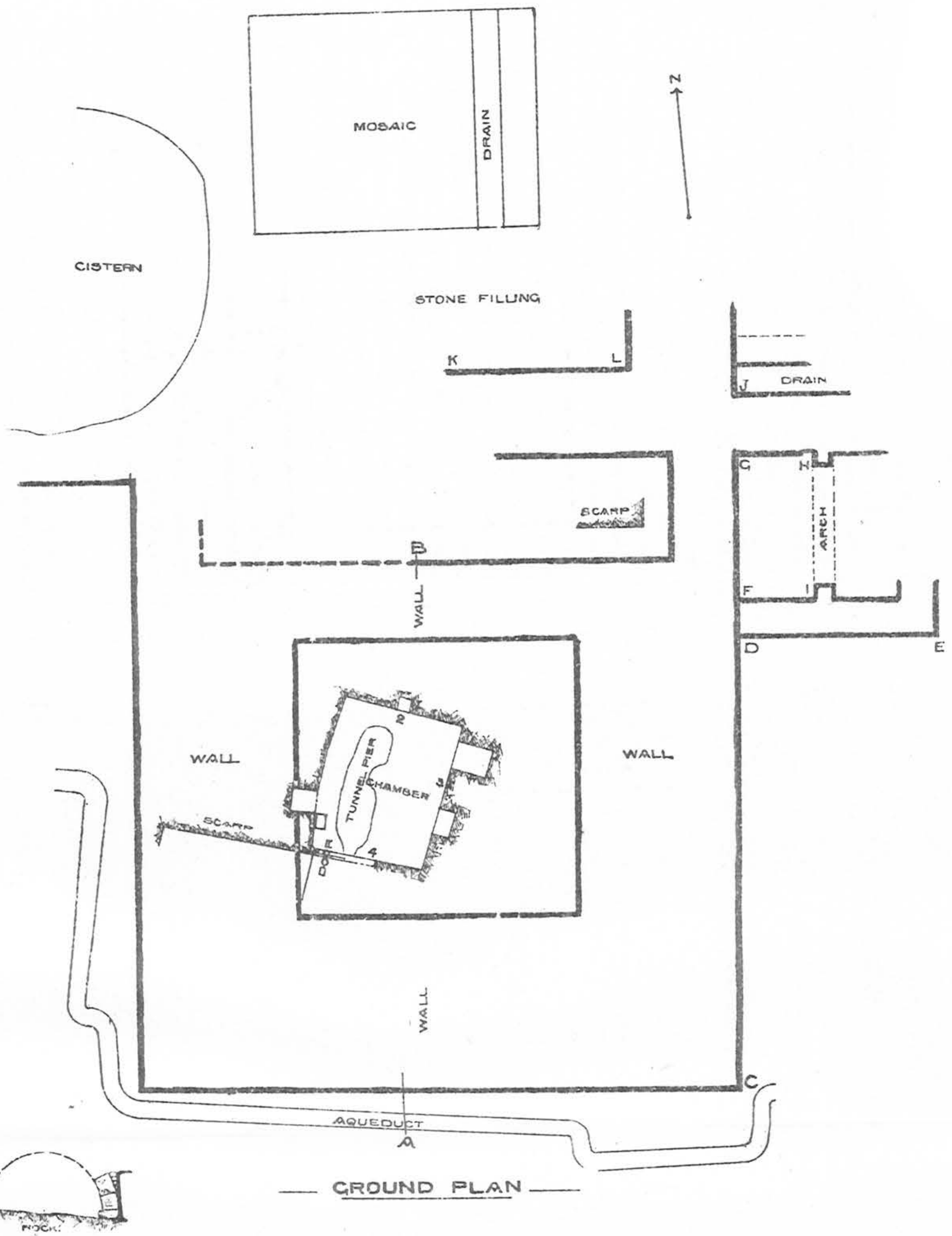
The rock slopes down naturally, and nothing was found but a few rude, thin house walls. The red virgin soil still covers the rock and the back wall of the chamber-system which we saw standing to a height of 11 feet, is built down for 7 feet in a trench cut in this virgin soil. Returning to the shaft and driving a gallery north, we found nothing but insignificant scarps, probably due to quarrying, till we reached the aqueduct discovered by Sir Charles Warren. In my report for January, 1895, I described the aqueduct entering the ancient city at Tower II, and gave reasons for supposing it to be identical with Warren's. On striking his aqueduct in our section we followed it westwards as far as it is laid down on the map to the road where a blockage occurs. Returning to Tower II we followed the aqueduct north-east, further than last year, to a blockage 50 yards from the blockage in Warren's aqueduct to which it was still pointing. These blockages are due to air-holes which have been filled with fallen *débris*. That the line traced by Warren and the line traced by us are parts of the same aqueduct is clear. The construction is exactly similar. In both parts we find the double coats of plaster; a similar separation of the plastered bottom; the same finely worked corners, in places double; the same marked variations of height and breadth. A further proof lies in the levels of the flooring, as there is a fall of 1 foot between Tower II and the point where the aqueduct was struck in Section AB. Moreover there is roughly smoked in lamp-black in the roofing of both parts the bench mark of the Ordnance survey .

A probable explanation is now afforded for the curious bend taken by the aqueduct as observed by Sir Charles Warren. A glance at the plan shows that it turns aside to avoid the building which evidently stood in the way of its direct course. The minor turns may be attributed to a careful feeling after rock levels.

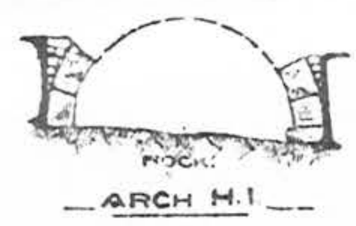
This square tower, which projects south from a system of chambers, has walls of extraordinary thickness. The east and west walls are 14 feet thick, the south wall 15 feet 11 inches, and the north wall 7 feet 2 inches. They consist of rubble built in courses averaging 20 inches high, pointed with strong mortar made of lime and ashes. Only the corner stones are dressed, one or two showing a boss. These massive walls enclose a chamber only 25 feet square. We sunk to the rock at the south-west and north-east interior angles of the chamber, finding it filled to a considerable height with a solid filling of large rubble set in mortar, which had to be quarried out, and which was quite distinct from the walls. Pushing towards the centre of the building from the north-east corner, we found a sudden drop in the rock, and quarrying down through the filling for 9 feet we discovered a rock-hewn chamber, whose roof, now broken, had originally a barrel-vaulted form. (*See* ground plan, section, and elevations, Pl. III.) This rock-hewn chamber is not in the centre of the tower built around it, nor is it in the same line. Though not quite rectangular, its dimensions are, roughly speaking, 14 feet long by 10 feet

EXCAVATIONS AT JERUSALEM

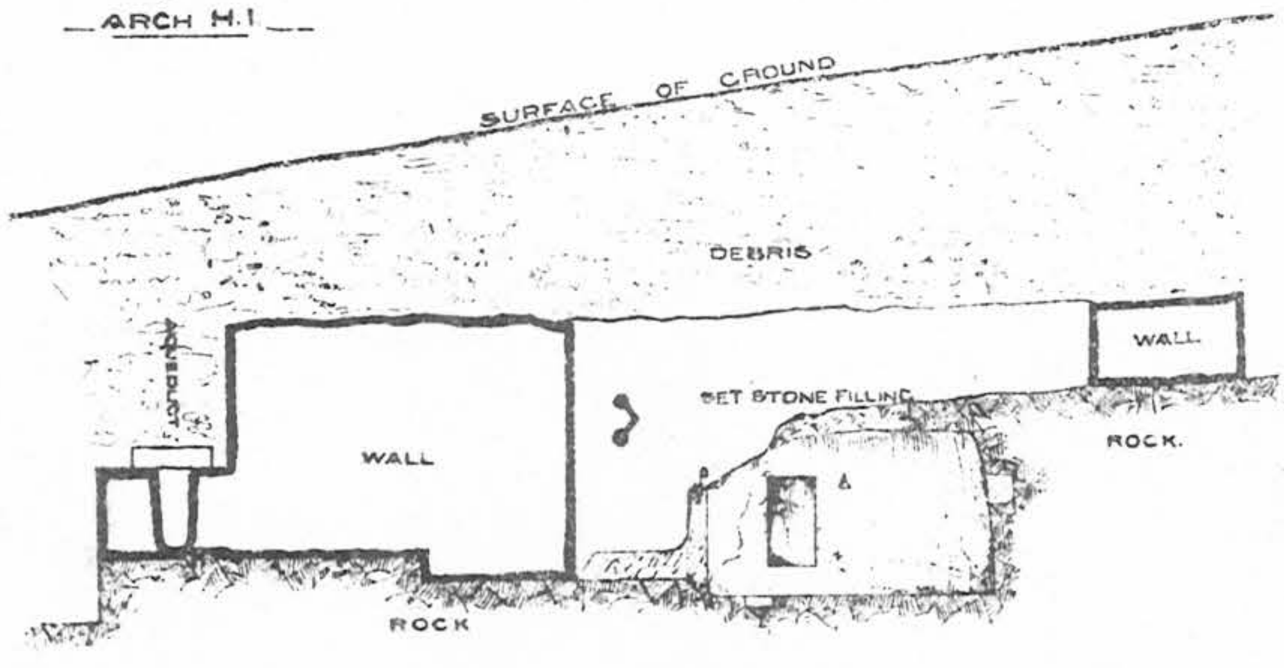
TOWER NORTH OF AQUEDUCT



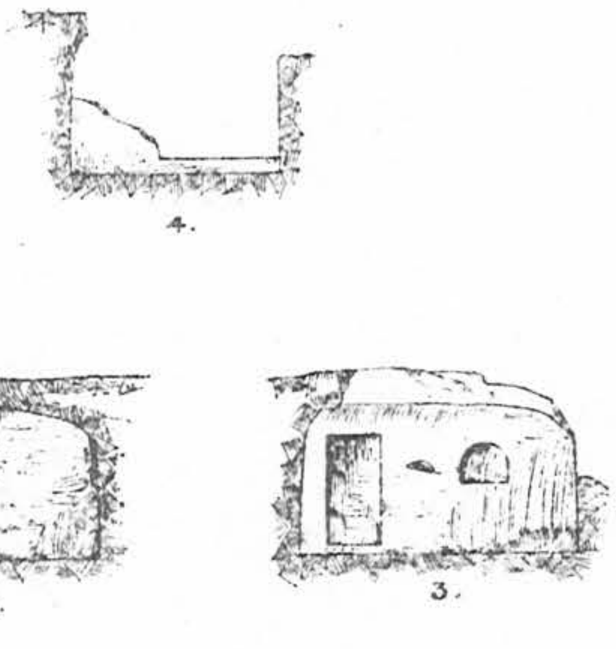
GROUND PLAN



ARCH H.1



SECTION A.B.



ELEVATIONS. 2.3.4

SCALE 16 8 0 10 20 30 40 60 FEET

Excavated by F. J. Bliss.
Measured Drawn by Alick C. Dickie
16·XII·95

6 inches. The four sides were followed by quarrying through the filling, but a solid pier had to be left in the middle for a support. Still a large part of the flooring was seen as we tunneled under this support, reaching the centre of the chamber. The approach was originally from the open air by a door cut in a scarp, as may be seen by a glance at the rock levels in the general plan.

This scarp is broken away (Section AB), but one rock-cut jamb of the door and the door socket still remain. The interior walls are covered with fine plaster, very much broken. In the east, west, and north walls occur the large recesses and small niches seen in the elevations. One recess has a small groove, as if for a shelf. Curiously enough, the rubble filling extends within the recesses. Not a single tomb loculus was found. The Augustinians have found in their property to the east of this place a rock-hewn dwelling, unconnected with tombs, with a similar niche and recess. I have examined the tomb chambers on the south side of the Valley of Hinnom by way of comparison. I find no chambers without loculi, except two that directly connect with tomb-chambers and none containing the cupboard-like recesses. We carefully sounded the floor of our chamber, which gave no sign of a cavity below. Thus it has no connection from within with any other chamber. Outside we followed to the west a scarp over which the west wall of the tower is built for 12 feet, when it turns south. This scarp, taken in connection with the level rock in front of the chamber, suggests that it opened on an open court, but that no chambers led from this court from the faces of the east and west scarps is proved by the rock, the top of which was traced along the east and west sides of the tower. At the points outside the sides of the supposed court it is only 4 feet higher than the flooring of the latter. There is still room, however, for a parallel chamber to the east, opening from the north side of the court, and we are still searching for this.

This great tower is very curious, but certain points are clear: the rock-hewn chamber had a broken roof when the tower was built around, as shown by the filling built down into the former; the tower was not isolated, as proved by the lesser thickness of its north wall. The massive walls and the equally strong filling mean one of two things: either something was meant to be concealed, or a foundation was needed for a tower of great height. As far as our investigations have gone, we have found nothing but an ordinary ruined rock-hewn dwelling, not worth concealing; hence we argue from the present *data* that it occurred by chance at the spot where a lofty tower was to be built.

As seen on Pl. III, and more extensively on the general plan, it projects from a system of chambers. The wall DE apparently does not belong to the system, as it is not bonded into CG, and the masonry is different, consisting of small roughly-squared stones set in courses, open-joint, and the mortar does not contain the ashes always characteristic of that of the tower system. At G we have a true course, and the character of FGH is similar to that of the faces of the tower, but of smaller stones. The round arch, HI, would thus be an addition at the

time of the wall DE. In a tunnel to the east the wall GH was seen to turn to the north. We are also trenching to the west of the north-west corner of the tower, but on neither side is there any indication of a wall having the extraordinary thickness of those of the tower. On the west the rock cistern rules out the possibility of such a wall now existing at that point. We have still a few days' work before the investigation becomes entirely exhaustive, but the facts are decidedly against a city wall here. Moreover, the masonry of the tower itself has not the character of that of a city wall.

About 12 feet north of the wall KL occurs a chamber, 25 feet by 19 feet, with a mosaic flooring from 2 to 3 feet above the rock. The walls of the chamber are almost entirely ruined, and are of slight thickness.

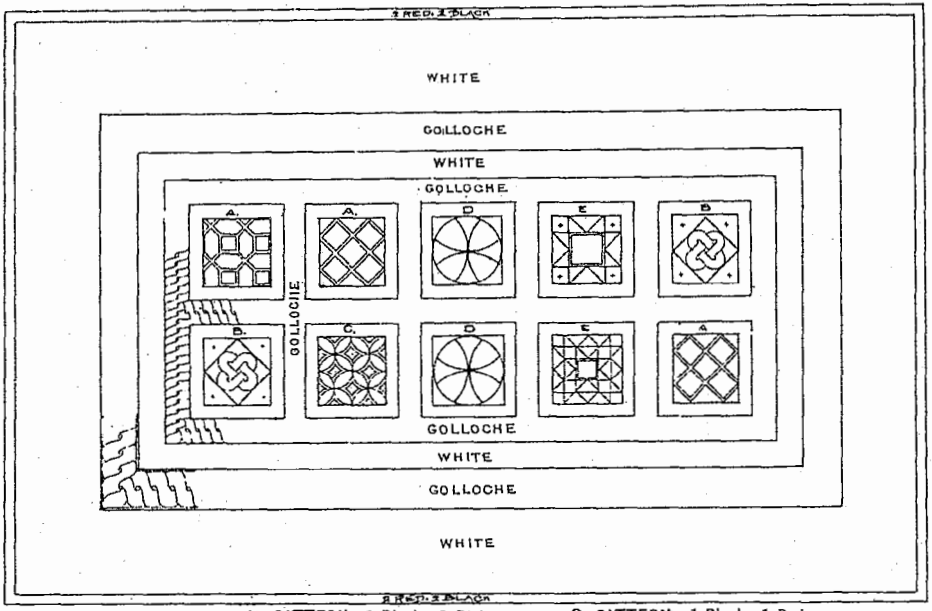
The mosaic is in almost perfect preservation. Though buried under 15 feet of soil, by a careful directing of two tunnels we were able to recover the complete pattern (Pl. IV). The plans[1] explain themselves. Mr. Dickie's task was no light one. To sit on the floor of a hot, damp tunnel, 55 feet from the air supply, by the light of four or five candles placed in bottles, the air growing thicker every hour, while he measured and coloured, and then to emerge into the midst of a cold, rainy outside world, was in my view a trying experience.

In our trench to the east of the corner we found fallen fragments of mosaic of a still finer workmanship and more elaborate design and colouring, the tesseræ being of white, black, grey, two shades of red, and two shades of orange.

Coming from the north and running across the chamber there is a drain 2 feet 6 inches broad, and at least 5 feet high. It is cut off by a made-up bottom between the chamber and the wall KL of the tower system. It is in line with the similar drain to the south, butting up against the upper city wall as described at the beginning of this report. A drain was also observed against the outside of the wall GH, abruptly cut off by a wall of the tower system. This may be a branch of the mosaic drain. This latter appears to furnish a key to the chronology of the various discoveries at this point. The drain is of course later than the mosaic. It also seems to be earlier than the tower system, which interrupts its natural path, though it is directly cut off by the made-up bottom only 12 feet north of the wall KL. Even supposing that it turned west, and is identical with the drain at J, in this case it was cut off by the tower system. The aqueduct seems to have been diverted to avoid the already existing tower. We thus have the mosaic as the oldest and the aqueduct as the most recent of these various constructions. The mosaic is probably not older than early Roman times, hence the aqueduct may be that of Pontius Pilate, whose great work of bringing water to the city caused such a tumult among the Jews. Confirmative of this hypothesis is the fact that the pottery found between the aqueduct and the mosaic is Roman or later, while that found in

[1] The plan showing the mosaic pattern in colours can be seen at the office of the Fund.

PLAN OF MOSAIC.



NOTES.

A. PATTERN. 1 Black. 2 Red.
B. " Red. White. Black.
E. " Black and White Centre. 2 Red Outline. Black and White Checks.
C. PATTERN. 1 Black. 1 Red.
D. " 1 Red.
All on White Ground. 10 Cubes = 6 Inches.

SCALE 0 1 2 3 4 5 6 7 8 9 10 11 12 FEET.

Excavated by F. J. Bliss.
Meas.d & Drawn by Arch.d C. Dickie
16. VII. 95.

connection with the lower south wall is mainly Jewish. Roman tiles were found bedded in the filling of the great tower north of the aqueduct. Drawings of the pottery and other objects found in our excavations will, I hope, be ready for the April *Statement*.

From the mosaic north to the fork of the road, in one gallery driven on the rock, nothing appeared but a few rude, thin house walls. These, though carefully examined, are omitted from the plan as they would merely appear as unedifying scratches. Under the fork of the road we struck a wall, standing to a considerable height, and showing a vertical joint. Breaking through, we found that this indicated the outside corner of one house with a wall of another system of houses extending from it to the east. The south wall of the house to the right was roughly built in courses from 15½ inches to 27 inches high; its east wall, though clearly traced by the *débris* banked against it, consists of much broken rubble, without a decided face. It evidently had been used as the west wall of the cellarage of the system of contemporary houses to the left. The south wall of these was traced for some 35 feet to the east, and its thickness found at three places to be only from 4 to 5 feet. The masonry consists of roughly-squared rubble, set in courses 12 inches to 14 inches high, resting on ruder foundations. Partitions were found running to the north and south. Some few feet from the end of the tunnel, a drain, coming from the north-east, breaks through the wall. This drain is 2 feet broad, about 4 feet high, and its bottom is not on the rock. In character it resembles the drain crossing the mosaic, with which it seems to be identical, as we did not see it in our gallery which ran to the west of a line connecting these two bits of drain.

Returning to the corner of the house described above, we pushed north along its east wall under the road, when we came upon a small birket extending back of the house, thus indicating the northern limit of the latter. The birket has curiously curved sides, its bottom is rock and its walls are plastered. The south wall is only 18 inches thick. Breaking through the north wall, which is thicker, we found ourselves in a chamber 5 feet broad, with walls similarly plastered. It has not the shape of the birket, being rectangular, but it may also be a birket connected with the other. From this point for 9 feet north the work was extremely difficult. The top of our tunnel showed set foundation work, resting on *débris* through which the tunnel was driven. Its path crossed the mouth of a large rock-hewn cistern. The mouth is choked up, but not closed of set purpose, by a large fallen stone, and the interior is only partly filled with *débris*.

Three or four feet beyond the cistern's mouth we struck the back of a stone. On our removing this, a quantity of loose shingle poured into our tunnel through the orifice. When the stream of shingle stopped, Abu-Selim was able to stick his head through the hole and announce that the removed stone, the back of which we had seen, belonged to a wall facing north. However, attempts made to enlarge the hole resulted

in a fresh stream of shingle and larger stones. I could not now put my head through to see how dangerous a cavity had been made under the road. Accordingly we were forced to open a shaft from the road, and sank down near the north face of this wall, which consists of quarry-picked stones, badly squared, pinned up with chips and set in coarse mortar, the courses varying from 11½ inches to 13½ inches high. This face rests on the rock, and was seen standing to a height of 11 feet to a point only 6 feet under the road. The question of its breadth is not clear, but in no case can it be city wall. If the foundation work seen at the top of the tunnel belongs to it, then it might have been 8 feet thick, but in this case it was built over the choked up cistern, and its south face rested on *débris*. This fact would militate against its being a city wall, as the outer face of a city wall at this point should face south, and it is unlikely that the outer face of a city wall should rest on *débris* while the inner face rested on rock.

If the mouth of the cistern were outside of it, then the south face (now ruined) could only give a breadth of 4 feet, too small for a city wall.

Continuing towards the north 7 feet beyond this wall, we found steps descending at the angle of a cistern or reservoir. Walls and steps are of rock, both covered with cement of lime and ashes. The construction is similar to that of "Cistern I," found during our first season, and discussed on p. 255 of the *Statement* for October, 1894. Driving on we found this cistern filled with loose *débris* containing large stones, the dislodging of which again threatened to undermine the road, and we were reluctantly obliged to open a fresh shaft a few feet beyond the point where our tunnel had become dangerous. As the cistern did not continue to the point of this shaft we may take its breadth at about 19 feet. The east and west dimension was not ascertained.

From the large stones which had arrested our progress we had guessed that we were near a wall, and this appeared in the newly made shaft. The facing stones have all disappeared, but the line of the inner packing runs east and west. Before following it we thought best first to find its breadth. As its ruined top lies only 4½ feet under the road surface we ran an open trench to the north. To our astonishment we pushed along the top for 23 feet before we reached the northern face, which consists of well-set drafted stones, evidently an outside face.

Sinking to the rock, we pushed east, soon finding a corner, and then followed the wall south, the masonry becoming more and more ruined till the one course remaining came to an end at a distance of 24½ feet, which brought us to within a short space of the point where we had seen the face-robbed wall. The mystery was now explained. Our open trench had been driven along the top of the east wall of a building. We had first struck its south side, just short of the south-east outer angle; we had then found its north side, near B.M. 2479.7; then the north-east outer angle, and had worked our way back to the south-east corner. The character and size of the masonry (the upper courses averaging 24 inches) suggest that this is a tower in a city wall. Our trench across the top shows that the walls (if walls there were) are at least 8 feet thick, hence

the tower was probably solid, as no sufficient space remains for a chamber. We followed the north face to the west, but the masonry suddenly breaks off, and we are still searching for clues. The discovery of this supposed tower throws light on the nature of the wall seen 8 yards to the south. They cannot be two independent city walls, as they are too close together, and stand at the same level and to the same height. They cannot be parts of the same wall. And if either of them be city wall, it is the northern tower that shows the characteristics. Thus the southern wall appears to be part of a dwelling.

As half of this report is taken up with the Section AB, which was cut to ascertain whether any other walls ran across the line north of A, I am sorry that at the only two places where a city wall possibly runs the returns are incomplete. I have already delayed the report over one post, but a buried city regards not the sailings of steamers, and is coy in revealing her secrets.

The map on which this season's work is laid down contains also last year's work, which appeared on a map in the January *Statement*.[1] The discrepancy in the positions of the wall as observed in a comparison of the two maps is thus explained : starting from a fixed point, I laid down the direction of the wall as given by the prismatic compass ; the survey was correct absolutely, but I had not then learned what was the local difference between true and magnetic north ; this has been since ascertained ; a fresh survey by Mr. Dickie has established the correctness of mine, and he has laid all the discoveries down in their proper relation to the Ordnance Survey, with check measurements from fixed points. The alteration in the direction of the wall immediately west of the tower at Jewish Cemetery was anticipated by my remark at the bottom of p. 17 of the January *Quarterly Statement*.

Since the last report was sent the work has been driven at full speed, only one day having been lost. We have also picked up the line of wall crossing the mouth of the Tyropœon, its base having been reached with great difficulty in a shaft 37 feet deep, where the sewage oozing from the pool is most unpleasant. Thus far the rains have not interrupted the work, as during one fearful storm we were fortunate enough to pursue two or three tunnels, and shift the earth to others which were finished with. But this is not a chance that often occurs. The work of the party has been, on the whole, good. The alternation of heat and cold is what makes the Jerusalem climate so trying. Several of our workmen have been drafted into the reserve. The labourers pursue the work of mining with great courage, and when I asked Ahmed, who had got among wicked-looking *débris*, whether he was afraid, he replied : "I fear but one thing, and that is that you put another man in my place." Abu Selim manages the diggers, land-owners, and crop-owners with his usual tact. The owner with whom we did not come to terms last year has proved himself not only an admirable man of business but a perfect gentleman, as the bargain once made this

[1] Only a portion of this map is reproduced in the present number.

summer he has never been near us save for a friendly visit, which we would like repeated.

Our relations with the Imperial Museum at Constantinople are cordial, through its Director, H. E. Hamdi Bey, and our genial Commissioner, Ibrahim Effendi, who both are deeply interested in the progress of the work.

In closing I would beg indulgence for the hurried style of this report, which has been written under great pressure. The pen was often dropped during the midst of a sentence, when I was summoned from the tent to make a descent underground.

JERUSALEM, *December 8th*, 1895.

REPORT ON TOMBS DISCOVERED NEAR SÛR BÂHIR.

By ARCHIBALD C. DICKIE, A.R.I.B.A.

ON my return to Jerusalem after a two weeks' holiday up the country, I was instructed by Dr. Bliss to report on some tombs which he had discovered on a hill about a mile due east from the village of Sûr Bâhir, from which it is separated by a ravine. The initial discovery was made by some natives, who were digging on the crest of the hill for broken pottery. They reported it at once to Dr. Bliss, who immediately visited the place and found it to be a cell enclosing a very interesting series of tombs.

Accompanied by Ibrahim Effendi, I started on the morning of 12th October, equipped with the necessary implements for the accurate plotting of the building, and the no less necessary lunch basket or lunch "hurj," as it may more appropriately be called in this country. Three workmen preceded us, whom we overtook at the base of the hill after an hour's ride over the now barren and unfruitful hills lying to the south of the city.

A general survey of the hill top gave me but little light on the position of the tombs, as the entrance had been filled up since Dr. Bliss's visit. Everywhere were signs of a disturbed surface, but in no place could I find any clue to lead me to the object of my visit. At last, after careful examination and a little hand excavating, in what seemed to me to be the most recently disturbed soil, a welcome voussoir peeped out of the crumbling earth followed by another of the same. Here I set the men to work, and after an hour's digging I was able to squeeze myself into the building at the apex of the vault, just where the steps lead down to the cell. The *débris* had all fallen from this aperture, and consequently more than half of the interior was practically empty, hence the inside excavation only consisted of minor pickings here and there, to find real bottoms, true corners, thicknesses, &c.