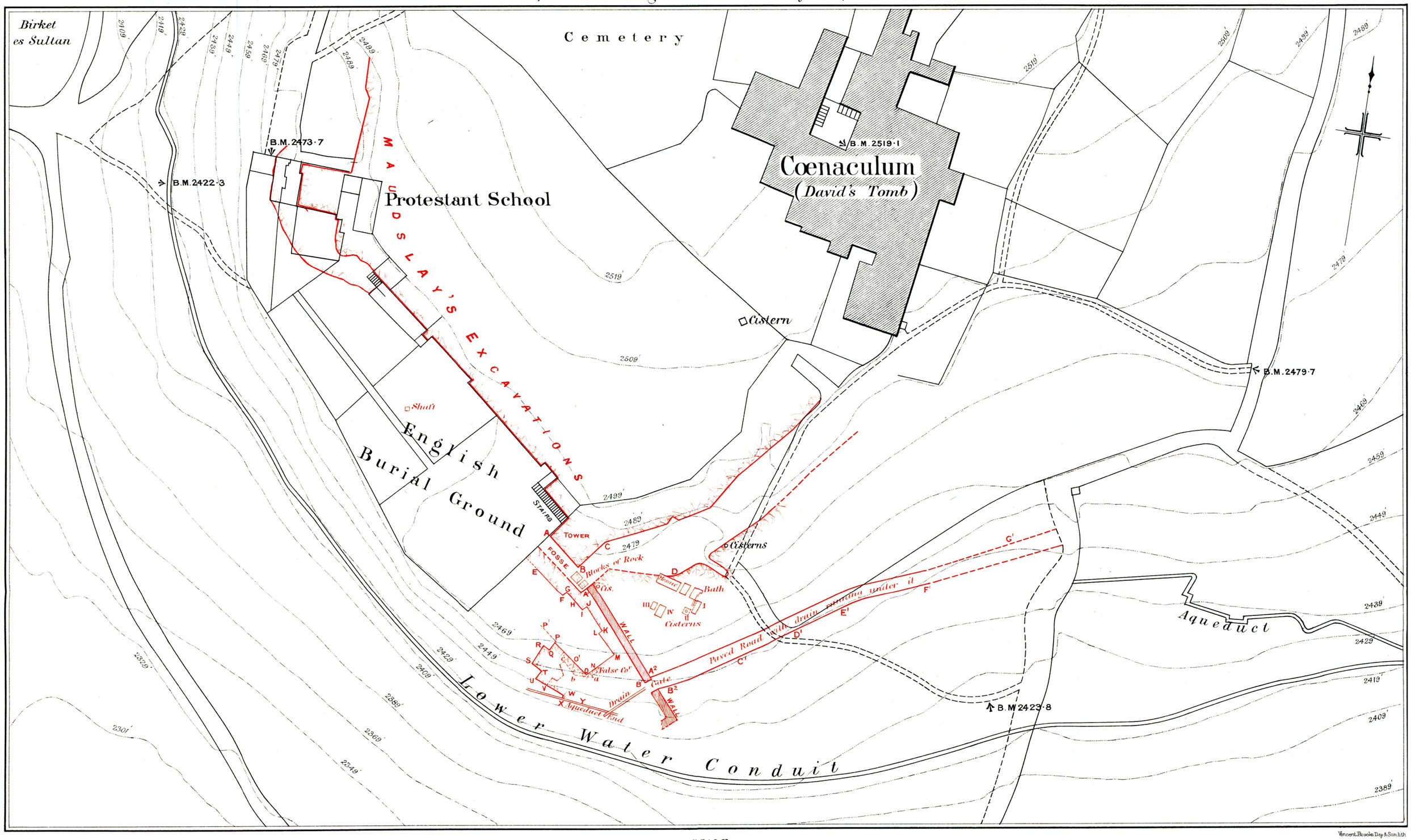
Plan to Illustrate Dr. Bliss's Reports.

The Detail in Black, from the Enlarged Ordnance Survey Plan, The Excavations in red.



SCALE

Feet 100 0 100 200 300 400 500 Feet

Vincent Brooks Day & Son lith.

SECOND REPORT ON THE EXCAVATIONS AT JERUSALEM.

By F. J. Bliss, Ph. D.

The present report, written 16 weeks after my last, will, I hope, be taken as a report of progress. I have to announce the tracing of a splendid line of rock, scarped for fortification, for over 300 feet. We have also followed, inside this scarp, a long line of actual wall *in situ*, of fine masonry; we have traced a paved street leading to a gate in this wall, which is in all probability the Dung Gate of Scripture. These, then, are the main features of our work, which I shall now proceed to describe in detail.

In my report dated June 6th, two weeks only after the excavations had been begun, I showed how we took up the work on the so-called Rock Scarp of Zion, beginning our digging just outside the Protestant Cemetery; I described the tower built on the rock-scarp (one side of which scarp is visible under the cemetery wall running south-west), and I showed how we had traced the counter-scarp of the ditch for over one hundred feet in a north-easterly direction, following the direction of the rock-scarp as previously known. I intimated that I felt doubts as to whether this ditch belonged to the outer line of wall, as it does not follow a steep contour (such as those found lower down the hill), and leaves outside of it to the south a large gently-sloping tract, between the contours 2489 and 2469, which would naturally have been included within the town.

Besides, Josephus' reason for the single line of wall at the south of Jerusalem is that the valleys were there so steep; and this would lead us to look for the wall along a lower contour, as for example 2429. I showed how, in pursuance of this idea, I sank a shaft on the contour 2469, about 75 feet from the cemetery south-west corner, to the depth of about 20 feet, and then drove in a tunnel, in the direction of the tower on the rock-scarp.

At the time when the report closed we had advanced only a few feet in the tunnel, but in subsequent letters I described our finding the desired outer scarp, at a distance of 48 feet from the mouth of the tunnel, and our following it to the right and to the left.

The windings of the scarp are shown on the Plan. We struck it first at the point H, where we later opened a shaft from above for the double purpose of getting fresh air, and of facilitating the handling of the *débris* to be removed. We were thus able to find the height of the scarp at this point, as we continued the shaft till we reached the base, which was not much below the level of the tunnel, as it happened. The scarp was here 13 feet high, the top being much broken away. We continued our gallery to the left, following the scarp to point E, where

the work got difficult, as the *débris* consisted entirely of large chippings, the scarp evidently having been quarried away at the top at this point. Moreover, we were very near the cemetery wall, under which we did not care to tunnel. I, however, sunk a shaft in the school garden, beyond the cemetery, about 200 feet from E, and found a scarp almost in a line with E—F; that it is not exactly in a line does not prevent its being a true continuation (the difference was only 4 degrees), as we can see in the main scarp that the direction alters slightly from time to time. We followed this garden scarp (including a turning) for 22 feet, the rock then continued with a steep face, but unscarped. It was here naturally so perpendicular that the original engineers seem to have thought it unnecessary to work it.

We will now return to H, whence we followed the scarp with its various turnings to the south-east. The angle at J is beautifully worked. Between J and K, along the face of the scarp, there runs a sort of channel a couple of inches deep, evidently for collecting water. At K the top of the scarp appeared in the tunnel, and we sunk a shaft to ascertain the depth, which we found to be 15 feet. At K there is a sudden drop, so that the top of the scarp along K—L is 4 feet lower than the point K. From M to L the face is not quite regular. At the corner, M, there is another sudden drop. From M to N (as seen in the elevation[1]) the top of the scarp descends regularly and gradually, following, it is interesting to note, the slope of the surface of the ground 28 feet above. Our gallery followed the same slope, each box or frame being set 3 or 4 inches lower than the one behind it. At N we lost the clue. The scarp appeared to turn to the left. We were following it along its top, and had not yet found the true depth at M. Accordingly we took the superficial turning at N for the true turning, and our troubles began. When the right clue is lost tunneling becomes dangerous work. When you open up in several directions from the same point, the fear of caving in becomes great. We were obliged twice to leave the scarp, and to drive a tunnel parallel to the direction required, returning to the scarp further on. We spent much time and trouble in shoring up, and I must say that Yusif managed most admirably and safely. We followed the line from N to V (*see* dotted line on plan), disgusted at the lowness of the scarp, at its arbitrary turnings, and at its evident resemblance to a quarry. I was much puzzled, for the fine lines from E to N seemed to preclude the quarry idea, and yet we seemed to be following a continuous line. Moreover, we were much troubled by large stones in the tunnels, which had to be broken up very carefully before the work could go on. The men in this tunnel spent almost a month in following these false clues.

In the meantime, having a gang of men to spare one day, I set them to find the true depth of the scarp at the point M, and this turned out to be the solution of our difficulties. To my delight, this was proved to be

[1] The elevations and sections referred to by Dr. Bliss are reserved for future publication.

21 feet below the scarp-top, the point being lower by several feet than the base of the low, irregular scarp found in the gallery from N to V, at *a*, *b*, and *c*. That there could be no rise in the orginal rock between M and *a*, *b*, and *c* was easily seen from the sharp slope down at the surface. The true state of the case immediately flashed upon me, as I stood, candle in hand, in the gallery at M and peered down the deep shaft at the man who held up his lamp to light this beautifully-worked scarp which towered for 21 feet, top and base being seen. It was a moment of relief, for the eccentricities of the rock cuttings beyond N had given me several bad quarter-hours. It was clear that the apparent turning at N was only superficial, that the line of scarp at its base must continue past N to somewhere near the point O, and that at that point we must expect a turning towards the north-west, as *a*, *b*, and *c* were so much higher than the base of the scarp. If this theory were correct, our winding gallery from N to V had been following along the top of the rock, inside the face of the scarp, probably along the top of the rock-base, of a great tower or bastion, the outer face of which we were yet to find. That at the point V we had again reached the true scarp (having crossed the width of the bastion) seemed possible, and the levels admitted of this.

All this, however, remained to be proved. I first decided to follow along the scarp-base from M by a gallery some 15 feet immediately below the gallery already opened. However, as we had previously opened a shaft from above at the point N, it seemed more economical, considering the earth-question, to deepen this shaft. Here we were again troubled with large stones. When these occurred within the limits of the dimensions of our frames, the task of break-up was easy, but it was an anxious moment when, after a frame had been fitted in, a head of a stone would be seen projecting 2 feet into the shaft just below it and extending into the earth-wall, how far no one knew. The fear was that the removal of the stone would widen the shaft so as to make insecure all above, but happily we managed to keep our shaft safe until we reached the rock. As I had foreseen, the base of the scarp continued past the point N and on to the point O, where it takes the expected turn to the north-west to form the bastion. From O to P there is a rise at the base of the scarp of 3 feet. At O′ the top of the scarp appears in the gallery, having here a height of only 4 feet. However, there are evident signs (small and large chippings) that the top had been quarried away. At P the scarp is only 2 feet high, but as we turn the corner there is a sudden drop of 6 feet at the base, so that the scarp is 8 feet high. The rock is also scarped from P to P′ (which was as far as we followed it), the scarp facing south-west, the line P—O, of course, facing north-east. As I have said above, when I discovered that we had been working across the top of the rock instead of around its scarped edge in our cross tunnel from the false corner at N to V, I thought that probably at V we had again reached the main line of scarp. Accordingly I set a gang of men to work from V towards U to meet the gang working from O towards P. The earth from the line O—P was at first carried to the surface up the shaft

at N, and the earth from the line V—U by a tunnel driven from the slope of the hill to the point V. Later, when I had taken measurements in the cross-cut tunnel from N to V, we filled it up with the earth from the two tunnels to north and south. It happened at the same time we were filling up the tunnel in the English School garden, and we had a fourth gang engaged in tracing the street. Hence for two or three days the surface-field of the excavations appeared deserted. Of over 20 workmen employed only two were visible, the man at the rope above the shaft for the street-tunnel and his boy with the basket. The consumption of candles during those two or three days was tremendous.

The two gangs met at the point R. I was in the southern gallery at the time, and clasped the finger of the head workman in the other gallery through the tiny hole first made. This was soon enlarged, the air rushed through, the candles flared up with a brightness they had not had for many days, and the tired boys drew a long breath. Between U and P the scarp was never more than 4 feet high above its base (from N to V we always followed the base), and at one point it was only 2 feet high. At several points stones had been clearly quarried from its top, and chippings and some large stones still left were in evidence. At such places frames were necessary, but at other points we could sometimes tunnel for several feet through the hard, firm *débris* without any shoring-up. For example, in the cross-cut gallery, though the rock had been evidently quarried, in many places chippings had not been left, and few frames were used. Indeed, while our main galleries at the moment of writing still remain open, we have removed a great part of the frames for use elsewhere, with the result that hardly anything has caved in. This does not mean that the frames were unnecessary while the work was advancing, for then the concussion of the picks, the constant roll of the wheelbarrow, and the tread of the workmen, would have brought down the earth had there been no frames.

We traced the main scarp from V to W, and then along its turn to X, where we came on an aqueduct. Its north side is formed partly by the continuation of the scarp along the line X—Y, the scarp being here only a couple of feet high, so that the wall of the aqueduct (3 feet high) is completed by rubble masonry. Its south wall consists of rubble. The aqueduct is, hence, not rock-hewn at this point, but has its floor on the rock, and runs along the rock-scarp. It is covered with roughly-hewn slabs. The width at the top is about 2 feet 3 inches, the sides slope down, and at some points it has a channel 8 inches wide at the bottom. The walls are covered with two layers of mortar, the inner coat consisting of rough lime with small bits of pottery inserted, and the outer of finer lime. The mortar is exceedingly hard. For a long distance the aqueduct is quite clear from earth, but at one point it is choked up with fallen blocks. At intervals air-holes (covered with a slab) appear to have led to the surface. It runs about parallel with the "Low Level Aqueduct," some thirty feet to the north. It is very likely a continuation of the aqueduct found by Warren some 500 feet to the east,

although I have not yet had time to study the levels. His aqueduct is also to the north of the "Low Level Aqueduct."

The discovery of this aqueduct has interrupted temporarily our tracing the scarp further east. It is possible that the line W—X was cut through to bring the channel within the city, and that X—Y is not the continuation of the scarp. In this case we should expect the main wall-scarp to the south of the aqueduct. We have begun to open a tunnel inwards from the slope at a lower level, but have not yet reached the rock. The eastward line of the scarp is yet to be found, and must await description (and discovery !) till the next report.

We have thus followed the scarp in one continuous line from E to W for 308 feet. We followed the false clue from N to V for 86 feet more, and the shafts and tunnels from the surface of the ground to the scarp add 130 feet more, making the entire length of shafts and galleries employed in the search for this scarp 524 feet, or over 157 metres.

The question now arises : Can this rock-hewn work be the thing that we were looking for, that is, the base of the south wall of Jerusalem ? I have said above that the inner line of work is the scarp uncovered by Maudslay, with the tower unearthed by us, and the continuing line of scarp and ditch in the direction of the Cœnaculum building seemed to me to take too north-easterly a direction beyond our tower to satisfy the conditions of the south wall, which on its easterly course towards Siloam should follow a steeper contour. Hence, I expected an outer scarp, south of the tower. This, as I have shown, I first found at H, nearer the tower, with its line of ditch, than I expected. In order to reach a lower contour it should accordingly first proceed in a south-easterly direction, before turning east. This it did, as a glance at the plan, along the line E—M, will show. The re-entering angles at J and K do not disturb the general direction, and are quite what might be expected in a wall. I watched the work anxiously from hour to hour, constantly fearing lest this scarp should be connected with the ditch to the north and take its north-easterly direction. The turn at M to the south-west did not trouble me, but it was rather a relief to feel that my scarp had turned definitely away from the ditch of the inner work. The turn to the north-east at O would have seemed strange had not my gallery already made along the line N—V led me to expect a great bastion at this point. Such a bastion we found, extending from O along P, R, S, U, to W. I have, of course, laid out the lines of this bastion on the surface of the ground above, and it is surprising to see how well suited the place is for such a great tower. It would have stood just above the turn of the valley, and have commanded the road from Hebron. It might also have flanked a gate between O and M, which would have been further protected by the line L—M.

The turn at U to the south-east was, of course, satisfactory, and I regret that at the time of writing I cannot report its progress further east than W. As far as position and direction go, this unbroken line of scarp from E to W might well be the base of the south wall of Jerusalem,

especially as the point W is found below a much lower contour than is the point E, the fall of the surface slope between the two points being about 30 feet. Thus far, then, our question, "Did we find what we were looking for?" may be answered encouragingly.

Another question, however, arises: the top of the scarp was seen at many points, often along a considerable length: were any stones of the wall found *in situ*, or, in default of this, was the top of the scarp cut for the letting in of stones, as in the case of the bottom course of the Haram masonry? To both these questions a negative answer must be given. This, however, need not rule out the scarp from being a true base of the wall. In the first place, as to the absence of masonry, it must be remembered that no stones were found *in situ* along the top of the 400 feet of scarp examined by Maudslay, and that this was the base of a wall has never, I believe, been questioned. Indeed Major Conder in writing of Maudslay's work (*Statement* for 1875, p. 89) remarks: "The shortest and "surest way to solve these questions (as to the wall, &c.) is to follow along "the line of Maudslay's excavations, which are very valuable in showing "that, however the masonry may have been destroyed and lost, we may "yet hope to find indications of the ancient enceinte in the rock-scarps, "which are imperishable." This is just what I have done for a length of 308 feet, having followed, however, not Maudslay's scarp, but one exactly similar in workmanship, to the outside of it. The two scarps stand or fall together.

As to the other question of the absence of cuttings at the top of the scarp for the letting in of stones, it must be remembered that at several points, notably at E and P, the top of the scarp had been quarried away, a process that would have destroyed such indications had there ever been any. Fortunately, we have close at hand an example to the contrary. On the base of the tower, which we uncovered on the line of Maudslay's work (*see* photograph), there are two courses of masonry *in situ*, placed directly on the scarp, except at the corner where it is broken away, and here small stones are built in between the rock and the masonry to preserve the level of the lower course.

The long line of chiselled rock from E to W can be only one of two things: it is either a huge quarry, or part of the line of fortification. I have considered the question anxiously, and the following points militate most strongly, indeed to my mind conclusively, against the quarry theory: (1) The unbroken line for 308 feet, which evidently continues still further. (2) The smooth face of the scarp, rising at one point perfectly straight for 21 feet, worked with long slanting chisel marks, evidently at one time and with one intention. At one point there are two shallow steps in the face, but not such as we find in a quarry. (3) The evident plan in the turnings, especially those that go to form the comparatively regular bastion from O to W. (4) The complete absence of indications that stones had been cut out, except along the top of the scarp, which of course might have been done later. (5) The complete difference in the line of the rock cuttings found along the cross-cut line from N to V. The line on the

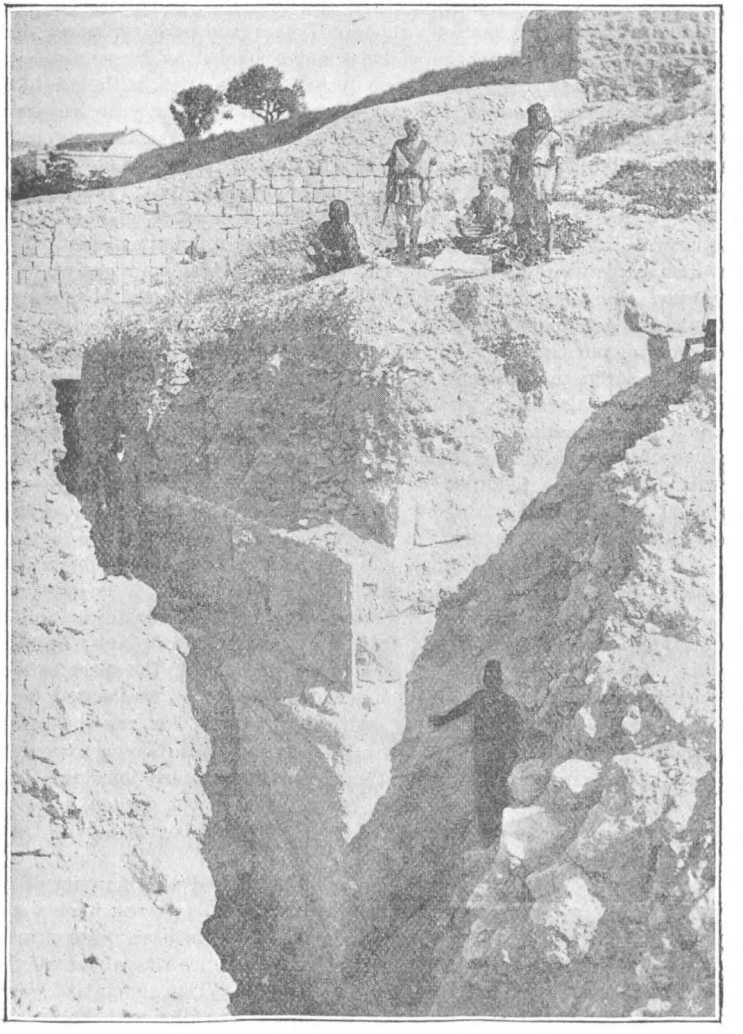
plan indicates only the direction of our gallery and not the line of scarps, which was most arbitrary, as is natural in a quarry. Here one could plainly see where stones had been cut out. Indeed, the evidence that this was a quarry was so great that I felt a genuine relief when the true clue was picked up again at N, where the line was found regular again. We must remember that for a thousand years (and perhaps, indeed, since the destruction by Titus) the wall has not extended as far south as this point, and yet during all this time Jerusalem has been, with hardly any break, an inhabited city. We may assume that hardly a year has passed when stone for building has not been required. First, the overthrown stones would have been carried away into the city; then the stones still *in situ* would have been removed; there still remained exposed this solid rock base, which, especially at the bastion, would have furnished a grand quarry. This, in turn, was cut into all along its top and even to its edge, which explains the lowness of the scarp at several points as we find it to-day, along the line R—S. We may be thankful that even 2 feet remained, as the quarrying might have been carried on to the base, thus destroying our clue.

This scarp, then, appears to me to be part of the outer fortification of ancient Jerusalem. In writing these quarterly reports I prefer to follow the "historic method," and to present the arguments as they presented themselves to me during the course of the work. Some of the conclusions will doubtless be modified in my final memoir. Indeed, in this very report I shall have certain new facts to present, which may suggest slight modifications of the theory.

If this outer line of scarp, which we have been describing at such length, be adopted as the true outer line of fortification, it is left for us to account for the scarp of Maudslay, together with our tower and the continuation of the scarp and fosse north-east towards Neby Daûd. I take this scarp to belong to an inner fortress occupying the space between the contours 2499 and 2519, which seems to me to be well suited for an inner fort. This fort has its own fosse, towers, &c., as the present so-called Tower of David, though inside the wall, has its own towers and fosse. We cannot tell at what point our outer scarp joins this inner work, for we have not traced it beyond the school garden, but it is probably beyond the place where Maudslay's scarp begins at the Greek Catholic Cemetery.

In my report in the July *Quarterly* I described the masonry of the tower belonging to this inner work. This was found to rest upon a solid platform of rock, which we have since bared to its base, quite clearing out, as well, the ditch at this corner. The clearance was about 20 feet square, and averaged almost 20 feet in depth. The amount of *débris* removed, accordingly, was great, and as the fosse was filled with large stones fallen from the tower, the work was difficult. We began by a shaft along the platform at its corner, but stones so choked up our progress that we could not reach the base. Another shaft had also been sunk above the cistern (where the rock was reached). We then connected these two shafts by

a long cutting, but even then the large stones made it dangerous for us to attempt to reach the base of the platform. Moreover the passages at the bottom of the fosse could not be followed clearly, and were



TOWER ON ROCK PLATFORM ADJOINING ENGLISH CEMETERY AT JERUSALEM.

puzzling. Accordingly I made the large clearance, which finally enabled me to get the desired measurements. It was a very expensive hole for

the results, but it enabled us to get the relation between the platform, with its tower, the fosse, and the Outer Scarp. It also secured for us a capital photograph of the tower on its rock-platform, which will probably be more valuable to the general reader than the plans and descriptions. Again it will, I hope, be a lasting memorial of our work, as the proprietors intend, I understand, to have the place open, so that the tower, scarp, and ditch may always be seen. Their purpose is not purely archæological, as the huge stones we took out are of more practical value outside than inside the hole.

The original excavation for the fosse was evidently never completed, as shown by the large blocks still left, which explain the curious passages. That these passages descend by a series of steps may be seen by the section and elevation. Similar blocks (but much larger) may be seen in the cuttings at St. Stephen's.

The height of the scarp under the tower at the corner B, along the line A—B, is 16½ feet; at the same corner, but along the line B—C, it is only 8 feet; in other words, the part of the fosse running north-east is higher by 7½ feet than that part running north-west, as may be seen in the elevation. The fosse is here 20 feet wide. The outer scarp from the cemetery at first runs parallel to the counter-scarp of the fosse, and at the angle G is only 10 feet distant from it; it then runs towards the south-east, while the fosse tends north-east. The base of the outer scarp at H is 8 feet lower than the base of the scarp under the tower.

An examination of the many whole stones removed in this excavation adds little to what we learned from the two courses *in situ*. They are all drafted, and none are over 4 feet in length, the average being three or under. The stones, *in situ*, show the "pock-marking" dressing in their drafts. Many of the fallen stones, however, show on their drafts the diagonal comb-pick dressing, usually ascribed to Crusading times, with what certainty I am not prepared to say. This may be due to a re-using of the stones. A pilaster base, plainly in the Crusading style, may have rolled down from the ruins of a church near the Cœnaculum. One drafted stone was so worked as to make it appear that it belonged to a door or window of the tower. We cut into the *débris* above the tower base, finding only rude masonry. The rock slopes rapidly upwards from the line A—B, so that if there ever was one large room in the tower it must have been at a much higher level than the courses of stone *in situ*. At one point the rock was cut away to make place for a very small room, about on a level with the top of the first course, for here we found a cemented flooring in which there was a curious depression, widening at the bottom, in the shape of a water-cooler. The pottery found in connection pointed to Jewish times.

Thus far my report has concerned itself principally with rock-scarps. I have, however, to describe the discovery of a genuine wall *in situ*, which has been traced for about 100 feet. I think that the readers of the *Statement* will be interested to know of the steps which gradually led to the discovery of this wall. My instructions from the Committee

confined my present work to the search for the south wall of Jerusalem. Before I had reached the outer scarp at H, I sunk another shaft at C′, thinking that possibly the wall might have run along this contour. We found no wall, but a drain. I was curious to see whether this drain had any connection with the aqueduct traced by Warren beyond the road to the east. To this end I made openings at D′, E′, F′, and G′. I had several misgivings from time to time as to the wisdom of following the drain, as it seemed to have no bearing upon the question of the wall, but a certain instinct told me to go on.

We traced the drain to the road, and proved that it had no connection with Warren's aqueduct But, in the meantime, an examination of the shafts sunk to reach the drain flashed a new light upon me. At every point the flagstones which covered the drain extended in a pavement at one side and sometimes on both. At first, when this pavement had appeared only at one or two points, I had thought little of it, assigning it to houses at these points. But when it had appeared at five points, all in one line, all above the drain, some explanation was necessary. Then these questions crowded themselves upon me: Is this a paved street above the drain? If a street, is it not leading to a wall? If to a wall, must it not be also to a gate? Immediately I began to follow this new clue. The first point was its continuity, which we proved by following the pavement along the drain from C′ to B″ for 60 feet. Its width was also found at various points. From B″ we pushed on to A″, but after traversing about half the distance the pavement was lost. At A″ we came upon a corner of masonry, which I took to have been built in later times over the street. Accordingly we opened up again from above, by the drain, just beyond the masonry. We went down till we reached the rock, but found no street. So we abandoned the wall at this point for a time, and employed the gang to search for a turn of the street northwards at the point where its continuation had not been proved. In the meantime, one day our work in the outer scarp suddenly came to an end during the middle of the day, and finding a small gang of labourers on my hands, I set them to work on the masonry at A″, which, to tell the truth, I had not regarded as very important. I watched their work with constantly growing interest; the next day I added another gang, and soon it became clear that this apparently unimportant bit of masonry was a gateway in a wall. Meanwhile the other gang had proved that the street (which at the point where we last saw it was leading in this direction) had certainly not turned towards the north, as the rock there rises rapidly, and all probability was against its having turned towards the southern slope, hence, the obvious conclusion was that it had led to this gate, towards which it was pointing, when it was last traced a few feet away. Thus, weeks after it was first opened, was the shaft at C′ justified.

We opened it to find a wall, and found no wall but a drain; we followed the drain eastwards and found a street, we followed the drain back westwards and found a gate, and this gate, of course, was in a wall!

The drain, which furnished us the clue, is hewn in the top of the rock for a long part of its course. It is 2 feet wide at the top, 1 at the bottom (where there is a groove), and 4 feet high. From about the point E′ the floor falls both to the east and to the west. At various points it is fed by smaller drains from the city to the north. Beyond the gate it falls rapidly to the south-west, and comes to an end at right angles with the valley, at a point above a steep pitch, where it poured its filth into the valley of Hinnom. Immediately under the point where we later found the gate the sides were seen to be, not rock, but well-chiselled slabs of stone. At the time it occurred to us that this might be the point where it passed under the wall, but finding the scarp further out, we gave up the idea, only to find it the true one later on. The drain is roofed with slabs, which form part of the pavement of the street. One of these slabs was carved with a large Jerusalem cross, showing that it was used and repaired in Crusading times. It was completely choked up with rubbish, not ordinary earth, but actual sewage. At the point E′ it is only 4 feet under the surface of the ground, which, however, I understand has been recently levelled down.

The pavement of the street always shows the sign of wear, and was clearly trodden by feet. The actual pavement as seen is not more than 10 feet wide, but at the two points measured the rock has been levelled down at its side, adding 8 or 10 feet more to the width of the road; the flat rock here also showing signs of wear. At other points the pavement may be wider. At the point C′, in following the pavement, we had to break through the walls of a house, evidently of Byzantine times, which had been built over the disused pavement. This house had a mosaic pavement of its own, 2½ feet higher than the street, and its walls were covered with plaster over 2 inches thick. We followed the street, all through the length of the house (12½ feet), broke through the second wall, and continued along the road—pavement. A few feet from the gate the flagstones disappeared, but I have shown that the road could have not turned anywhere else, and, indeed, it had been pointing towards the gate for a length of 230 feet, sure proof of its destination.

I give the elevation of the wall from the gate at B′ to the point where it joins the scarp of the fosse at A′. The dressed masonry does not rest on the rock, but on rough rubble built on the rock. The base of the wall may be seen to rise rapidly. The stones have smooth faces, are dressed with the comb-pick (without draft), and the point of jointure is so fine that sometimes it is difficult to find it. The top of each layer is perfectly horizontal. In other words, the workmanship is exquisitely careful. Between *a* and *b* (on the elevation) below the regular lower course another finely dressed course projects a few inches. Beyond the point *a* the dressed stones cease, but the course of the wall may be traced to the fosse along the line of rubble.

From the gate we also traced the wall along its inside face for some 25 feet. The stones at the corner were well dressed, but beyond, the masonry was rougher, as is natural on an inside face. The width is 9 feet.

The gate is proved by the following points :—(1) The dressed masonry from the inside to the outside corner, which would not occur in the width of the wall taken at random. (2) The slab under the corner-stone of the wall at B′ projects out to form (with others) the sill of the gate, for while the part *beyond* the corner is smoothed, as by the tread of feet, the part projecting from *under* the corner is not thus rubbed. (3) Above the sill there are stones built in a totally different manner from the careful masonry of the wall ; the joints are wide, and one stone is part of a broken column. In other words, they point to a later blocking up of the gate. (4) The tracing of the paved road for almost 250 feet to this point in the wall.

The finding of a sewer immediately under this gate, at a point which cannot be far from the limits between which the Dung Gate has been placed by various theorists, establishes its identity with a strength of proof considerable indeed for archæology, where identifications are adopted and clung to with a tenacity arising from indications far less satisfying. Moreover, the sewer not only passed under this gate, but poured its filth into the valley of Hinnom, scarce 20 yards away.

Beyond the gate we followed the wall for 25 feet more, where it has turned a few feet to the south-west as if to form a tower. Here the masonry is of the same character as at the points described before, save that a shallow draft ($\frac{1}{8}$ inch) appears. This shows that in the same wall, and in all probability at the same time, both drafted and undrafted stones may occur. The courses are 2 feet high, and the stones, say in length, from 1 foot 9 inches to 4 feet 4 inches.

I have long felt that the question of ancient masonry rests on insufficient data. Not enough Jewish buildings are known. Because the Temple substructure and the Haram of Hebron consist of huge, drafted blocks, it is generally assumed that Solomonic and Herodian masonry was all massive. Smaller work is placed later. In regard to this wall Mr. Schick writes me that it may be the remains of a wall built in about 440 by the Empress Eudoxia, as Bishop Eucherius (440) says that Zion was included in the city (which it was not in Hadrian's time), and that the Pool of Siloam was also included. Theodosius (520–530) and Antonius of Platentia (570) always refers to Siloam as inside the wall, and the latter emphasises the fact thus : "It is now inside," as if it had been included by the Empress Eudoxia, who built new walls of Jerusalem.

My own opinion I reserve until we have traced this wall further, when new light may be hoped for. However, I am inclined to assign it to pre-Christian times, as the proof of a wall at this point at later periods is not furnished by much direct testimony. And the smallness of the masonry does not trouble me. We do not know that small undrafted stones were *not* used by Herod.

A very interesting question is the relation of this wall to the *outer scarp*. It runs fairly parallel to it from the gate to the counter-scarp of the fosse, but it takes no account of the bastion west of the gate. In

describing the outer scarp I showed how a wall *might* have stood on top of it, but warned the reader I might modify the theory. A wall might have stood back of it. That the outer scarp was hewn for fortification is sure. Was it crowned by a wall destroyed before this one was built, and following the line of bastion? Or was this the original wall, and, if so, why does it not follow the bastion? Interesting questions which our further excavations may answer.

Indeed we have only this morning completed the connection between the gate and fosse, only this morning have the stones been studied and measured, as during the past week, while preparing the plans for this report, I have been able only to see that the tunnels were taking the right course. Hence there are many things to be settled in the next few days, such as the width of the gate, the finding of the socket of the gate-post, &c.

There still remain to be described the curious rock-cuttings near the fosse, mentioned in my last report, but uncovered more thoroughly since The large chamber extends into the fosse (*see* plan), the counter-scarp of which seems to have been cut away to make place for it. This points to a date when the fosse was no longer used. The mosaic is late, the pattern being almost identical with the border of the Armenian mosaic on the Mount of Olives, which dates from the fifth or sixth century A.D., and also with the recently-found Armenian mosaic north of the Damascus Gate, which I have described in an intermediate report, and which dates from the same period. This last-mentioned mosaic is the floor of a mortuary chapel, the walls of which are of modest rubble and rough lime, thickly plastered inside; the chamber of which our mosaic is the floor is surrounded by walls of exactly similar construction. Thinking this also might be a mortuary chapel we searched for a cave below, but found nothing. The section shows the curious rock-cuttings. A bath is hewn in the solid rock, to its right is a rock platform, and to its left a shallow cutting, on the level with the platform, plastered and having a partition, only a few inches high, in the middle. The section of the bath shows the rubble elevation at the north end with the fireplace covered by a sort of half-dome. The broader north end of the bath was once arched over. In my last report I mentioned that "against the south rock-wall of the chamber there was what I must describe as the *silhouette* of a stairway, as the steps projected only an inch or two from the rock, which was cut away to form the three steps. It looks as if they had been intended as rests for a wooden stairway." Two small channels lead to the top of the bath. South of the rock platform occurs Cistern I, largely taken up with the rock-hewn steps which descend from the south end. The dimensions are hardly any smaller at the top than they are at the bottom (or as they would be without the steps), and there is no sign that the cistern (or pool) was arched over. Cistern II (to the south-west of I), however, has a small mouth hewn in the rock, the cistern widening out below. Cisterns III and IV may have been originally one, as they are separated merely by a wall. Part of

Cistern IV is partitioned off by a low wall at the bottom. Both cisterns are large at the top, like Cistern I. They are all plastered; the plaster seems to be in two coats, the inner coat being a cement of rougher lime with pottery fragments.

Whatever may have been the original date of these various rock cuttings they were evidently utilised in Byzantine times, where the chamber belongs. The pottery we found in connection with them was later than most of the pottery found at other points of the excavations. I have very little to say about the objects found in general. The coins occurred in general *débris*, usually near the surface. I intended to have described them in this report, but they have not been studied yet. None of them were found under circumstances which would make them valuable in fixing dates. Coins found on a deserted site, even in a dust-heap, are of great value in determining the limits of occupation. In Jerusalem *débris*, coins of any date may be expected: it is the conditions of finding them that give them value, as, for example, a great depth, occurrence in the rubbish inside a room, or under a pavement, &c., &c. However, I regret that I cannot report on our coins till next time. A great part of our work has been the following of the scarp. Unfortunately we found no objects near its base, save broken pottery. This appeared to belong principally to pre-Christian types, including the thick Jewish developments of the graceful Phœnician open lamps; the brittle purplish ware, found in the top third of Tell-el-Hesy, &c., &c. This points to the probability that the scarp was covered with *débris* in early times. Among the later pottery found in other places are Christian lamps, some lamp fragments with Greek inscriptions of the well known type, small vases, &c. One find was most tantalising: it was a life-size thumb of beautiful workmanship. The stone out of which it was carved is the hard native limestone. *Ex pede Herculem.* Where is the rest of the noble statue, which, if so much care was spent in the thumb, must have been beautiful indeed? Was it carved by a Jerusalem sculptor for the palace of Herod, and when broken up dumped in the *débris* outside the city? Shall we ever find the head, or even the torso?

Since my last report on June 6th we have worked steadily through the summer to September 12th, the present date of writing. Only one day did we stop on account of the heat. Out of the 83 week days we worked 71½, the remaining 11½ days may be thus accounted for: 4½ were government holidays, when, out of compliment to the authorities, who always assist us so kindly, I thought it best to stop work; one day at the end of the quarter the men got a holiday while their master, who had worked far into the night before, got his balance sheet of accounts ready for the post; two may be set down to sickness; and the remaining four may be called general holidays, including, however, the day of great heat mentioned above. All the nights but nine I have spent in my tent. Our camp has remained in the same place, except that the Effendi has twice had his tent moved away from the encroaching excavations, while the tunnels have gone under two of the other tents! The usual fever has

prevailed more or less in Jerusalem, but it has not reached our camp. We have almost always a breeze here, when it is still in town, and when there is a breeze in town, here we have a hurricane.

Our workmen are almost exclusively from Silwan, and when the final whistle is sounded it is a never-failing amusement to watch them plunge down into the valley of Hinnom. The largest number employed any one day was 26, and the smallest 14, the average being about 20. On the whole we got more work out of them than we did out of our Tell-el-Hesy labourers. They manage the mining very cleverly and, on the whole, with courage, although several times they have shown reluctance to continue a hazardous-looking tunnel, until Yusif has himself attended to the propping up and proved to them the safety of the position. Fortunately we have had no accident beyond the bruising of a finger, which did not interfere with its owner's work of the next day.

Ibrahim Pasha continues most friendly, and in Ibrahim Effendi, our Commissioner, the Society has a warm friend. It is largely owing to his presence that the work goes on so smoothly. Landowners do not trouble us; in fact, have hardly been near us since the first novelty wore off. What with the cisterns we have discovered for them and the beautiful stones we have dug up, they may well be pleased that we began work on their ground.

Other visitors, however, are very plentiful. We have had most of the Consuls, the Greek and Armenian Patriarchs, with the Latin Bishop, the Military Pasha, numerous ecclesiastics of all orders, and quite a number of travellers. Our guests have been of varying intelligence, from men who have excavated themselves, to the delightful person who congratulated us upon having come upon these tunnels, all made beforehand, and following along the scarp just where we wanted them to go.

DISCOVERY OF A BEAUTIFUL MOSAIC PAVEMENT WITH ARMENIAN INSCRIPTION, NORTH OF JERUSALEM.

By Baurath von Schick and F. J. Bliss, Ph.D.

Jerusalem, *July 9th*, 1894.

There came to me recently the servant of an Effendi, who is the proprietor of the small hill north of Damascus Gate, on which I reported some time ago (*see Quarterly Statement*, 1893, p. 298), telling me that his master had sent him to say that he was about to build another new house on the side of the hill, and in digging for the foundation had found a great many stone boxes of various colours, and wished that I should come and see the place and tell them what they ought to do. So in the afternoon I went there