

PLAN TO ILLUSTRATE THE EXCAVATIONS AT JERUSALEM.

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## SIXTH REPORT ON THE EXCAVATIONS AT JERUSALEM.

By F. J. BLISS, Ph.D.

THE admirable report of Mr. Dickie in the last *Quarterly*, left the work in a highly interesting condition. The city wall, traced from its south-west corner near the English Cemetery, along the steep slopes above the Valley of Hinnom, had come to its south-east corner at a gate and tower, and was pointing north-east with every prospect of its enclosing the Pool of Siloam. The present report will show how amply this prospect was realised, for we have to announce the discovery of the continuation of the wall across the valley, still standing to a height of 44 feet, with a rebuilding on a somewhat different line. Thus at two epochs was the pool within the city, but we have also traced, running up the west side of the Tyropœon, a wall which goes to prove that these two epochs were separated by one intermediate when the pool was outside the city. Hence at this critical point our work has yielded results of importance in the question of Jerusalem topography.

Before describing these walls, I shall take up the description of the drain at the point where Mr. Dickie left off. He spoke of the sudden drop in its bottom and of the concrete tank beyond, under which it seemed to pass. The matter was cleared up by further excavating. A drop of 8 feet in the rock bottom of the drain occurs 5 feet 2 inches before the point *a*, where it is joined at right angles by a large drain, 11 feet high and 3 feet 10 inches wide, with walls part rock, part masonry. Beyond *a* the drain continues for about 37 feet, having the same great height, with a fall of 2 feet; then for 12 feet with a fall of 2 feet to the point *b*, where the tank, formed of a concrete of cement and tiny potsherds, occurs. It is 3 feet 4 inches square, and 25 inches high, its bottom being 5 feet above the rock bottom of the drain. But from the top of the tank a higher drain, with side walls, runs out at a different angle through the city walls, where it is lost. It has a small groove or channel in the centre of its rock floor. It is evident that we have here two systems of drains running along the same course between the points *a* and *b*, the older being the larger one at *a*, which turns at right angles and continues at the same low level. This became silted up to the level where we now see the drain running from the top of the tank, a level suiting that of the higher system, which, sweeping along the base of the hill, joins the other at *a*, the tank being a catch-pit for the later and higher system, which beyond this point again diverges from the lower, being actually built on the top

of its rock-cut wall. A transverse section, at a point between *a* and *b*, shows the later drain to have been 1 foot narrower than the earlier. A large number of coins, found in the upper drain, were examined by the Rev. Mr. Dowling, who found them so corroded that only one could be distinguished, and that only on the reverse side. It may possibly be the cross of a Count of Edessa, c. A.D. 1068.

From the point under the catch-pit the lower drain was followed, with sides partly rock, partly built, to the point where it breaks out through the city walls. Beyond there it falls rapidly, its surface worn and furrowed by erosion; the side walls continue, but are further apart. 13 feet 6 inches beyond the city limits a rough wall runs across the drain, built across the irregular rock so as to leave small chinks. At first we thought that this had been built to prevent an entrance into the city through the drain, and that the greater width beyond the city walls indicated a pool from which the sewage would trickle down under the transverse wall, but the erosion of the rock represents a more rapid flow over this part. That people got into the city by the drain is shown by the skulls and bones found in the part within.

Beyond this transverse wall the water-worn rock was followed for some distance, the side walls of the drain having disappeared. A settling pool or final outlet was not found, but by a happy accident, which is really the excavator's greatest friend, an interesting discovery was made. The water-worn rock (*see* Section EF of Baths) suddenly terminated in a scarp, 8 feet deep, covered with plaster and extending east and west. It was first followed to the east for 15 feet, where it joined a wall which ran at right angles for 3 feet and then turned again.

We then returned to the point where we had first seen the scarp, and pushed along its face westwards for 55 feet, when we found a corner, the scarp turning to the south; in this direction we followed it for 20 feet, when the tunnel was abandoned, though the scarp still continued. Thus from the east to the west corner we had been working inside a chamber 70 feet in length. The flooring was composed of small white tesserae, irregular in size and shape, from  $\frac{3}{8}$  to  $\frac{7}{8}$  inch square. The cement setting was so strong that at first we took the flooring for stone. No pattern was found. As implied before, the north and west walls of this chamber consisted of the living rock to a height of several feet. It is probable that masonry once stood on this scarp, though no signs remained at the point where we saw the top. The rock-walls were covered with plaster in coats, the facing-coat consisting of lime, hard and well polished.

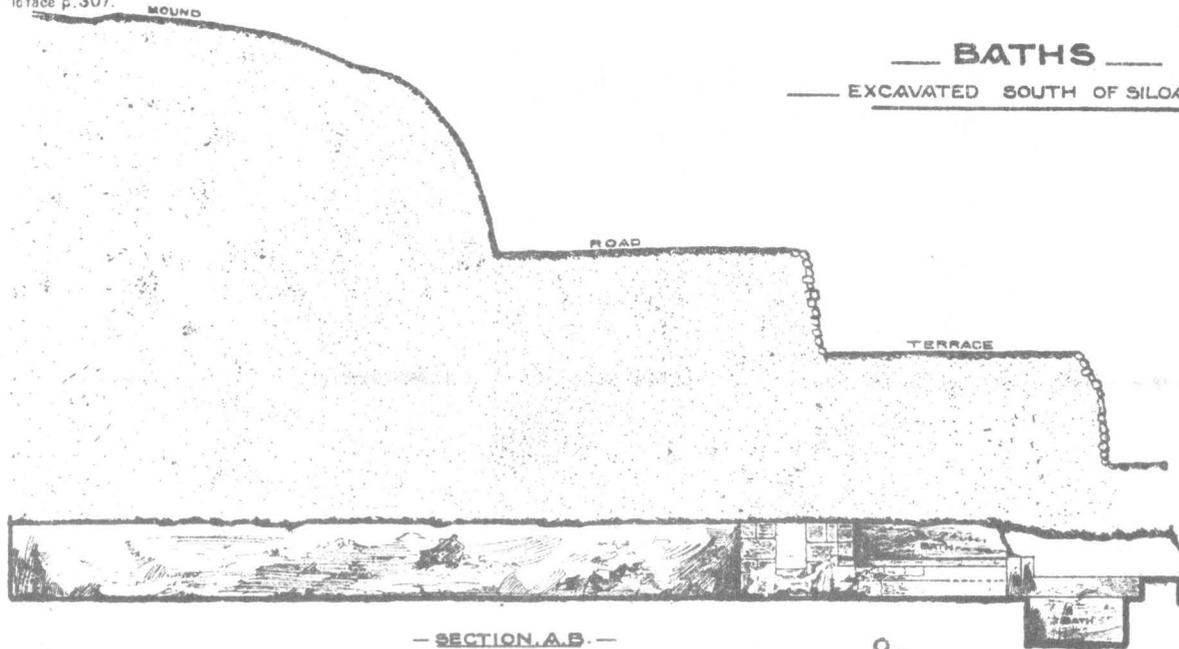
Work along this tunnel was rendered difficult, as along its whole length the floor was strewn with huge blocks of stone, having a face rough chisel-pick-dressed. On an average they were 4 feet 6 inches long, 2 feet 11 inches broad, and 1 foot 11 inches high. From their position it was clear that they had fallen from some part of the building above. Their character forbade our taking them for wall building stones, so we were driven to regard them as cover stones of an arcade running around

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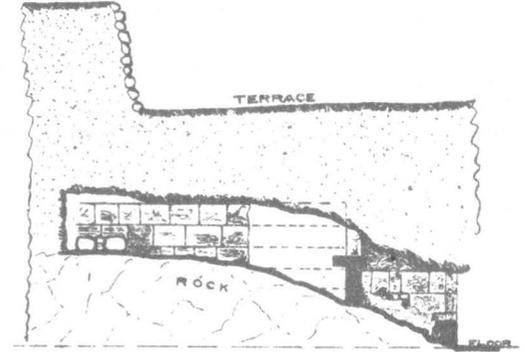
**BATHS**  
EXCAVATED SOUTH OF SILOAM

LVD

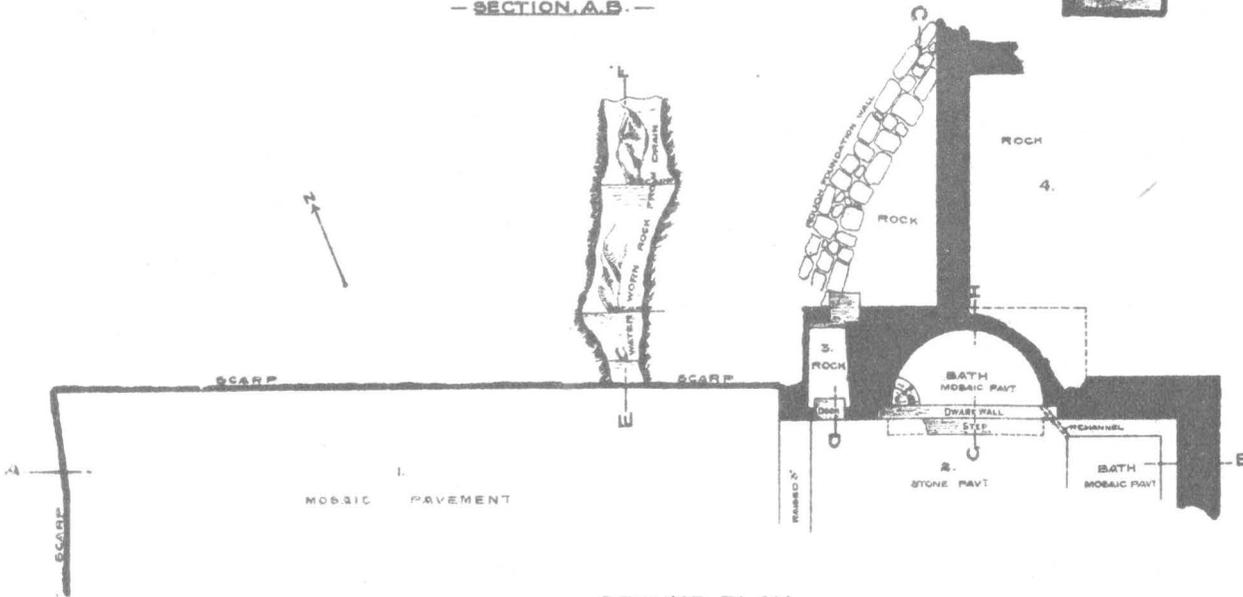
LETTERS CUT IN STONE



SECTION A.B.



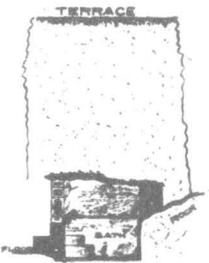
SECTION C.D.



GROUND PLAN



SECTION E.F.



SECTION G.H.

SCALE 0 10 20 30 40 50 60 70 FEET

Excavated by *F. J. Bliss*  
Drawn by *Chas. C. Rice*

the chamber, as they were also found in the tunnel driven south from the west corner. Accordingly we searched for the column bases of the arcade, and as the long tunnel was not broad enough to include the line of these, we drove in a tunnel at right angles, but found nothing. Still, this tunnel may have chanced to be in an intercolumnar space.

Chamber 2 is divided from Chamber 1 only by a step 3 inches high. It has a pavement of stones, large but of irregular size, well squared and jointed, originally dressed with the comb-pick but now polished by foot-wear. This chamber terminates on the north in an apsidal recess 15 feet in diameter, divided from the main part by a dwarf wall (*see* Section GH) and approached by a step up to the dwarf wall from which two circular angle steps descend. A distinct water line observed running along the plaster which covers the recess-wall at a height of 12 inches above its white mosaic flooring proves it to have been a bath.

This bath is connected with a second one at the north-eastern angle of Chamber 2 by a channel penetrating the dwarf wall and running into this second bath, which is sunk 4 feet 6 inches in the floor, having a ledge between it and the wall, perhaps a seat for the bathers. The length of this bath was not ascertained, but its breadth is 9 feet 6 inches. It also is paved with white tesserae.

We broke through the east wall of Chamber 2, finding its thickness to be 4 feet. All the walls of the building are covered with the same well-polished plaster as is observed on the scarp. In some places it had fallen off, revealing close, well-jointed masonry; the stones have a rough pick-chiselling in the centre, with comb-picked margins, but no bosses. The courses are from 16.5 inches to 24 inches high.

The small Chamber 3 is approached from 2 by a door 2 feet 11.5 inches wide, the sill of which is 4 feet 6 inches above the pavement of 2. No signs of steps were found. The door has a bar-socket. The chamber is 8 feet 5 inches long, and its average width 3 feet 10 inches, as the side walls are not parallel. The floor is natural rock, rough and uneven, rapidly sloping up from under the sill to the north wall, thus giving a rise of 4 feet in 8 feet 5 inches. At this end of the chamber, 4 feet 9 inches from the top of the rock, there is an opening in the wall, silled by a projecting stone 3 feet by 3 feet 5 inches. This small chamber remains somewhat of a puzzle. The difference in height between the door-sill and the sill of the north opening is too great to permit our assuming a stairway, nor did the rough, sloping floor show any signs that steps had once covered it. The height of the door above the pavement, with no connecting steps, led me to think it might have been simply a closet or store-room, with a window at the north end.

We pushed over the north wall of Chamber 3, and went down to the rock again, which continued to slope up, and drove our tunnel along the "rough foundation wall" shown in plan, to the point where it was broken away to give place to the wall coming north from the back of the apsidal recess. The masonry of this wall is of the same character as described above, and it is in line with the wall of exactly similar work

running south from the corner of the tower near gate (*see* key plan), plainly older than the tower, as it was broken away close on to it. To this I shall return later.

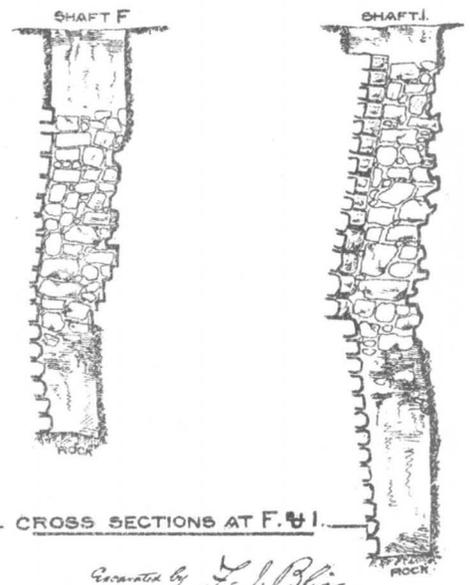
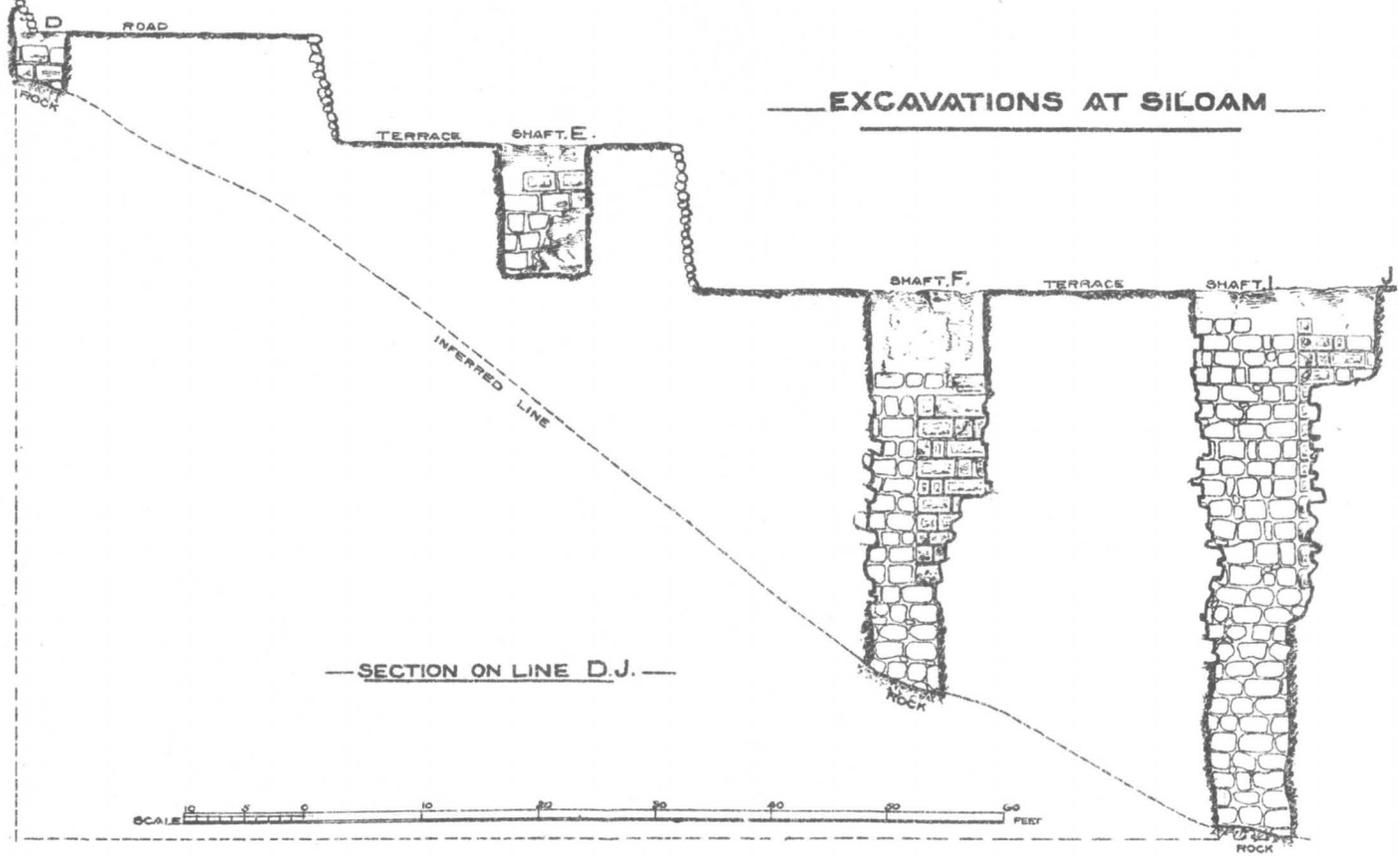
At this point we were evidently outside the bath construction, as shown by the position of the "rough foundation wall." Going over the good wall which runs north from the apsidal recess we found ourselves in Chamber 4, which has plastered walls and natural rock bottom. This may have been a reservoir, though, while working in the baths, no connection between the two was found.

In our work in this interesting building we were disappointed at finding no voussoirs, mouldings, or ornamental work which might give a clue to its date. One of the cover stones found in the long tunnel was polished, and in the corner were scratched three letters which look like LVD. This, and the tesserae, point to Roman times. The building is evidently later than the great drain, as proved by a study of the water-worn course down which the drain-matter ran (*see* Section EF). This is not only interrupted by small scarps where stones were quarried, perhaps for this building, but it ends suddenly in a scarp, 8 feet deep, cut to form the base of the wall of the building. It is hardly necessary to remark that a bath is not used as a termination of a drain!

From the above it will be seen that we cleared out only the north part of this large construction. It is difficult to know when and where to stop in excavations, but once we had determined the nature and extent, east and west, of this building which we had come upon so accidentally, I felt that my time and attention should be given exclusively to our main work, namely, the search for the city walls. But not without reluctance. For it would have been interesting to have seen whether larger baths were included in its area, to have settled the question of the arcade, &c., &c. However, the ground slopes down so rapidly to the south, leaving so small an accumulation of *débris* over the southern part of the building that I am inclined to think we would have found it pretty well ruined, if we could have traced it at all. The *débris* over the north-west corner, however, stands to a height of 55 feet, as seen in Section CD, showing that the hill above was occupied for a long time after the ruin of the baths. In excavating the building, the lengths of our shaft and tunnels came to about 240 feet, excluding the water-worn course. The soil was hard black earth, and not a frame was used for shoring up. The work was complicated by the fact that we had to go over several high walls. Now all is being filled up, and not a superficial trace will be left of these interesting remains outside the ancient walls.

In the last report the wall was described as far as the point B on the accompanying plan, corresponding to H on the former plan. North of B the face was ruined, a shaft was dug in a line with AB, revealing the *inside* face of the wall for some 20 feet at S. The wall here was unexpectedly thick, and no outside face was found in a direct line with AB. Accordingly we pushed across the packing of small stones forming

EXCAVATIONS AT SILOAM



Excavated by *L. J. Bliss.*  
 Drawn by *Arch. G. Rigg.*

the breadth of the wall, and discovered the small birket CD, whose dimensions are 21 feet 9 inches by 14 feet, with walls 3 feet thick. Cement covers floor and walls. At the corner near C the birket wall is stepped down to the floor by three steps. Breaking back through the birket wall at D we found that it had been built up against the city wall, of which two courses of roughly squared stones were seen on the rock, which here is only 4 feet 6 inches under the road. This gives the outside face of the wall in the line ABD, which north of the point B is not parallel to the inside face. This peculiarity was explained later, as well as the curious inward curve of the inside face north of S.

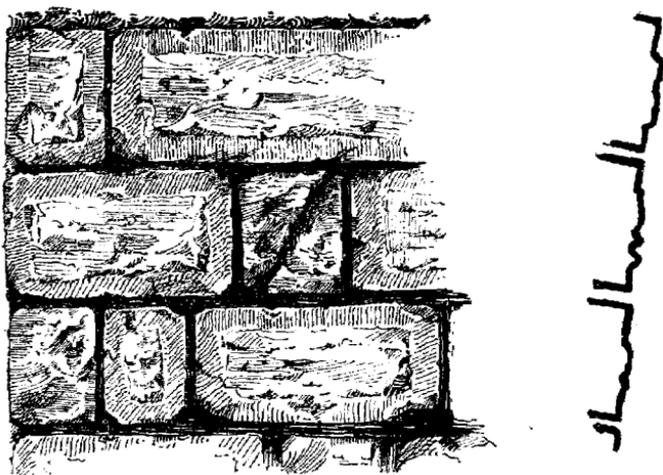
Having recovered the line of the city wall at D we were anxious to push straight on, but this could not have been done without tearing up the road, and an ascending terrace wall on one side with a descending one on the other prevented a diversion of the constant traffic along the narrow road to and from Bir Eyub. Indeed, the road caved in just outside the terrace at D, and we were obliged to fill up our tunnel in a hurry.

Accordingly we made a shaft in the terrace below the road at E, finding the wall at a depth of 2 feet. The line was plain, but it was difficult to clear the rough face to any depth as there lay against it a rough packing of stones cemented together by a conglomerate, which analysis proved to be pure carbonate of lime, the result of the action of water in the loosely packed stones, full of tiny potsherds: hence the work was stopped. In the meantime shafts had been dug outside the points F and I. Outside the point F great stones were found, evidently on their beds, but with no good face, naturally cemented as in the former shaft. At first we thought they might indicate the base of a tower, but search for this was in vain, and quarrying back through them we found the true wall again at F. But in the face occurred a curious vertical joint, the stones to its left being only roughly squared, while the courses to the right showed drafted masonry. Was this an old gate filled in? At any rate, this was a point to be examined, so we began the tedious work of quarrying down through the massive outside packing of stones, the use of which was slowly explained as we descended. For, as seen in the cross section at F, the wall bulges out formidably, and this packing represents a later strengthening from the outside. At a depth of 18 feet 2 inches from the top of the wall the straight joint ceased, and with it the drafted stones observed on its right, as well as the outside packing. Hence the work grew somewhat easier, and at a depth of 9 feet 3 inches the rock was reached, giving the total height of wall at 27 feet 5 inches. Below the straight joint the face of the wall has a distinct inward hollow.

But the problem of the vertical joint still remained unsolved. It was clear, however, that the drafted masonry represented the face of some tower or buttress projecting from the original line, and the rough masonry, down to the point where the vertical joint ceased, some filling in or alteration of the line. Hence at this point we broke through the latter, pushing along the ingoing side of the former. The line continued

for a few feet and then was lost; so we tried the same expedient higher up, but the wall was broken away just short of the internal angle which was probably at G.

Only the corner stones at F of the line FG were drafted, but the face of this buttress, as far as observed, consisted mainly of drafted stones. The courses vary from 13 inches to 22 inches in height. The dressing resembles that of wall near gate, only the bosses do not project much, nor has the comb-pick been used. It is impossible to tell the character of the setting as the courses at the joints are wrenched apart by pressure, but no lime was observed. A singular longitudinal cavity between two courses suggests that a beam of wood, now rotted away, had once been



— SPECIMEN AT F —

used for bonding. This method is still used in Syria, and I have observed it in an early church near Lebki.

In our shaft outside the point I we had similar experiences. At first we found ourselves among the outside packing stones, only here we were glad to see they had a distinct face. Pushing back to I we observed the same difference between drafted and rough masonry, only here instead of a vertical joint we found the drafted work projecting 15 inches from the rougher line, confirming our idea that in the last shaft we had also found a buttress. Again we had the tedious job of quarrying to reach the rock. At a depth of 23 feet below the top of the wall the drafted work ceased (the level being the same as at the point where it had ceased in the shaft F), the outside packing disappearing also. This buttress, as the former, rested in a base wall projecting in a line with their faces. The

rock was at last reached 21 feet below this point. The last two days we were working in water, and buckets came into requisition. Girls with water-skins flocked to catch the precious water as it was poured from the buckets. To reach the rock here was the hardest, slowest job we have had since clearing out the fosse around the tower near the Protestant Cemetery. The rock, which was not cut to a scarp, was 44 feet below the top of the wall and 46 feet 6 inches below the terrace surface.

Two stones of this second buttress are pierced by circular holes, 8 inches in diameter, one of them having a stone stopper fitting into it broken off flush with the face, but the fracture showed it had once projected. This would have produced the same effect as the button-projections from the Haram area wall at its south-east angle, shown on the cover of this journal.

We next pushed along the line IH (breaking through the rougher work as before) and found the internal angle, H, of the buttress, HLJK, 12 feet from I. This fixes the point G.

I wished very much to ascertain the length of the buttress faces in time for this report, and an attempt was made at the second one. But as said before, to clear the face requires quarrying through the rough retaining wall, which in its upper courses is rendered doubly resisting to the quarryman by the natural cement. Hence I have postponed this job. Such are the exigencies attaching to a report sent in the midst of work. However, Mr. Dickie's restoration of this wall on the rock-line shows the necessity for such buttresses at this difficult point where it is carried across the deep valley.

Thus far I have led the reader along the steps of the discovery of these two lines of wall across the valley, and I daresay he is as unsettled as to their mutual connection and relation to the wall to the south-west as were we until we could lay down all our points on paper, though we had our hopes and ideas. But an hour or two of plotting resulted in a delightful clarification, and our pleasure I shall now invite the reader to share. We have shown that the two lines of wall seen in our excavations at and beyond the road evidently represent two periods, the first following the line GK, with buttresses, which rest on a base-wall projecting in a line with their faces; the second on the line DJ, following the line of the buttress' faces, and, in the recesses between them, resting on the base-wall. We also noticed that at the point C the wall was unusually thick. On plotting all the remains we find that G and H are almost exactly in line with AB, thus representing an older and straight wall across the valley. The second and later line diverges from the old line at B, running through the points DEFI and J. In other words, the first wall fell into ruins beyond the point B, but the buttresses and the base-wall remained. When the wall came to be repaired, advantage was taken of these solid remains, the base-wall between the buttresses was carried up to the top, completing an unbroken face of wall, and this new line at I, 12 feet outside the old line, was carried back to B, with a gradually diminishing distance between the two lines till they met at B. This accounts for the

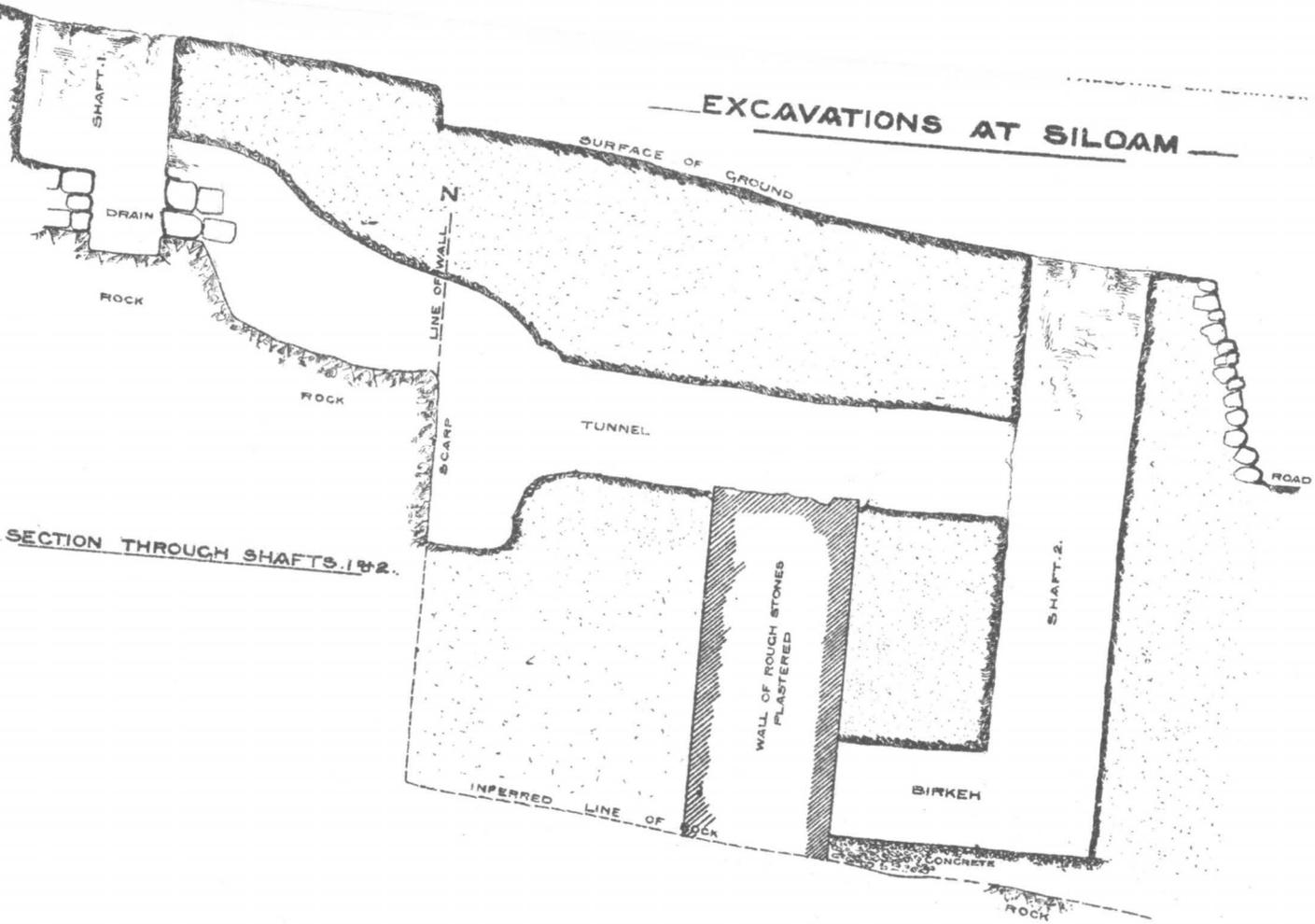


RESTORATION  
OF WALL CROSSING VALEY  
(SKETCH)

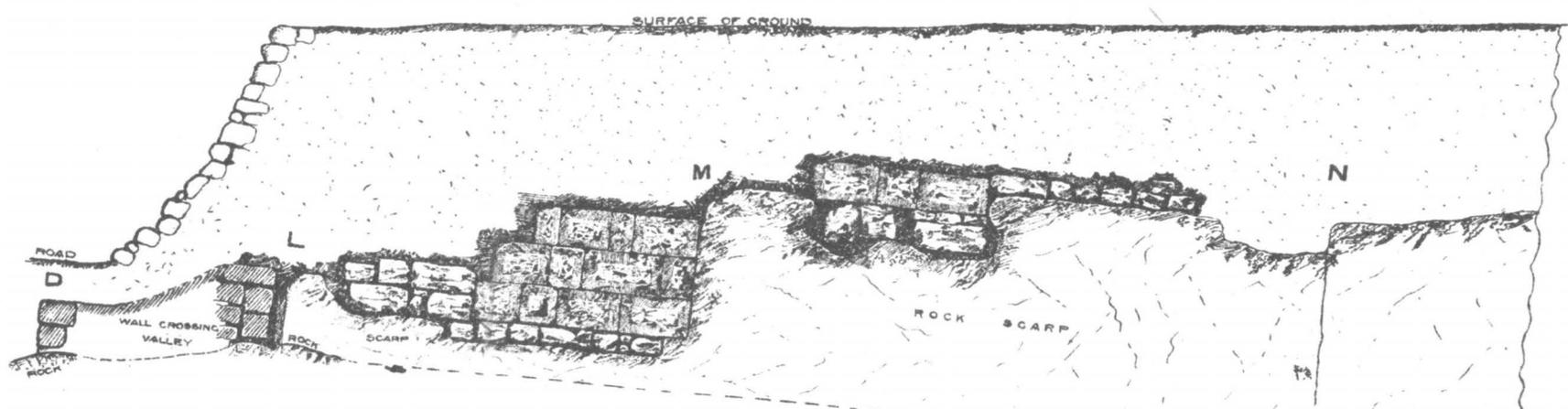
OCCUPATION

# EXCAVATIONS AT SILOAM

SECTION THROUGH SHAFTS 1 & 2.



SECTION SHEWING MASONRY AT L N



Excavated by H. J. B.

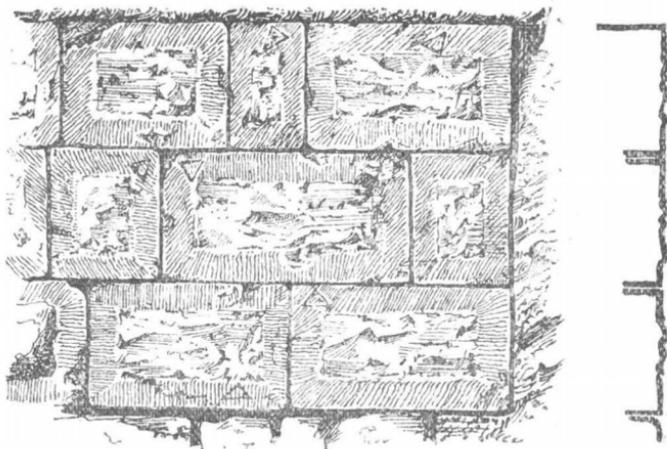
thickness of the wall at C, which is 14 feet, whereas at B it is only 9 feet. For S represents the true inner face of the earlier wall, and the line SC includes the original thickness *plus* the additional thickness caused by the divergence of the outer face. A third period, of course, is represented by the rough retaining wall of packed stones, which it would be unedifying to represent on the plan, but is shown in Sections F and I. Our plotting also explains the occurrence of drafted stones at E, forming a possible corner, for the measurements would allow for a buttress at this point. But in compliance with the owner's wish, we had already filled up this shaft before the buttresses were found beyond, hence we can only infer one here.

These two walls represent two periods when the pool was included within the city, but I have now to show how these periods were probably separated by an intermediate one when the pool was excluded. This also formed a part of my theory when the various walls first appeared, but I was quite prepared to submit to the logic of the tape-line and compass. These were in the hands of Mr. Dickie, who had no theories, and my pleasure may be imagined when he brought to my tent his final plan, the details of which not only permit my theory but strongly favour it.

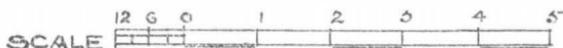
For we have now to consider a *third* line of wall which (as it now stands) begins at L, at right angles with AL, and runs up the west bank of the Tyropœon. This had been noticed by Herr Schick at the point R, and followed by Dr. Guthe from R to O; he also saw it for a length of 6 feet at M, where he believed it rightly to be part of the city wall; taking, however, RO to be an independent wall. As he found the thickness of the latter to be only from one to two metres, I assumed, before striking it, that it was not city wall.

Thinking it possible that a city wall did branch off somewhere here from the valley line, I sank Shaft 2, intending to push back towards the drain. At a depth of 26 feet we struck the cement floor of the birket found by Dr. Guthe, and described by him on pp. 136-41, Band V, Heft. 2, "Zeitschrift des Deutschen Palästina-Vereins." It is a large pool, and I take the liberty of adding it to my plan, though we saw it only at the corner. As in our lower gallery we thought best not to break through the birket wall, we drove another over the top of it, getting its breadth at 6 feet 6 inches, where our progress was hindered by large stones. We then took advantage of Shaft 1, already dug to reach the drain, and made the connection with the gallery from Shaft 2, finding a scarp at N, the bottom of which we did not reach. However, a glance at section through Shafts 1 and 2 will show that if it did not drop at once to the level of the rock under cement in birket, the slope of the rock must have been very rapid. We followed the scarp in the direction of L, finding in places rough foundation stones resting on it, to a point 32 feet from L, where one course of dressed stones began to be observed. 13 feet beyond the scarp steps down vertically for 7 feet, and three courses of masonry, with a foundation of small rough stones butt up against it, forming a straight joint. The "specimen at M" shows the character of the wall here. The jointing of the masonry is

fine; the courses are from 21·5 inches to 22 inches high; the margins of the stones are regular, from 4 inches to 6 inches, and are chiselled across, the comb-pick not having been used; the centres are rough picked, only one projecting like a boss. It was at this place that Guthe saw 6 feet of the wall, and our observations agree with his. However, the mason-mark given on his Plate III is more elaborate than the rude triangles we found carved on the margins of most of the stones; probably that particular stone had been removed with others by the owners, as we did not find it. As he noticed, the rock below the scarp has been quarried away for building stones. Had he pushed his tunnel a few



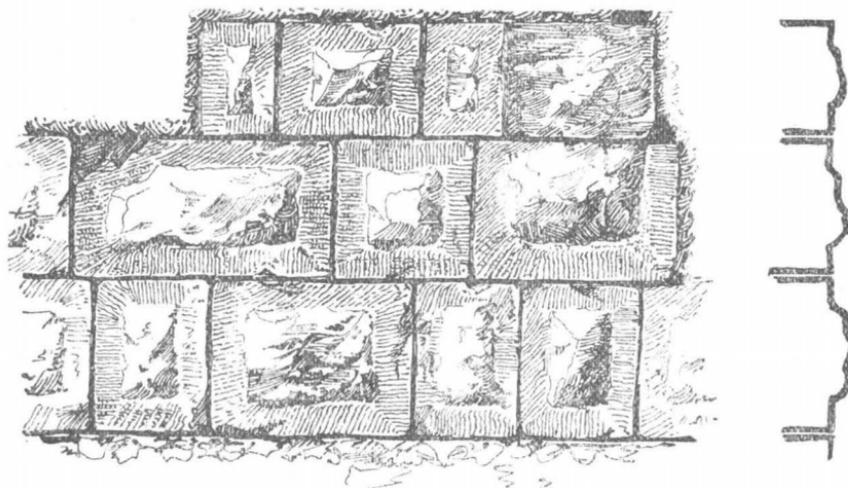
— SPECIMEN AT M —



feet further to the south-west he would have found the point of connection with the lower wall-system. The scarp ends vertically, turning inward, and the inside face of the valley wall, ADJ, now *in situ*, is built up against it. Thus the two walls butt up against each other. As both walls are ruined above the level of the scarp-top, we could not tell whether they were once bonded together above this point.

Returning to N, where we had first struck this scarp, we followed it to the north-west for 9 feet 4 inches, where it breaks outwards for 8 feet 2 inches and then resumes in general its former direction for 9 feet 7 inches to the point O, where we again struck Dr. Guthe's work. Here we

came upon the rude thin wall, OP, running off from the scarp to a point under the eastern terrace. On his plan this wall is marked CD. From O the scarp continues for 6 feet 10 inches to Q, the face being plastered with hard, fine lime. At Q it steps down vertically and the masonry again appears, butting up against and forming the straight joint shown on Guthe's Plate III, which he took to indicate the end of the wall. This feature we have already pointed out at M. From Q we followed the wall for 25 feet 10 inches to the point R, where it was first seen by Guthe, marked B on his plan. Under ordinary circumstances I would not reopen an excavation of a brother explorer, but having found that the line of wall continued beyond the point where it had been supposed to



— SPECIMEN AT Q —

end, I was anxious to find whether it also continued at the other supposed limit. Moreover, we had pushed our tunnel for some distance before we were sure of the identity of our wall with his, as the earth resting against its face was so hard as to appear untouched. This was explained when I gathered from his plan that he had been working in a deep open trench, the filling up of which would not only be more firmly packed than is possible in a tunnel, but which also would be directly affected by the action of rain percolating immediately through the packing. In following the wall OP, however, he was working in a tunnel, the traces of which were perfectly evident at its opening, for we did not reopen it. Moreover, on laying down on Guthe's plan the point of our wall where we first struck it, there was a slight variation in position, which is

explained by difference of allowance for the discrepancy between true and magnetic north. Again, we wished our own drawing of the masonry for comparison with the other specimens by the same hand. This is given in "specimen at Q." The wall has been robbed of stones since Guthe's work, but our measurements of those that remained showed an exact similarity with the corresponding ones in his elevation. The courses are from 19 inches to 25 inches high. Rude bosses project from 3 inches to 5 inches from the irregular margins, which are chisel-drafted, further dressed by the comb-pick. The jointing is not so fine as at the part of the wall at M. A comparison of the two drawn specimens will show the differences better than any description. As the rock slopes up rapidly behind the face of the wall it was impossible to ascertain the true width of the ruined upper courses.

At Q the scarp ceases, and beyond this point the wall rests for a few feet upon the rock, which then dips, the rest of the wall to R being carried on a making up of rough stones grouted in cement, extending some distance out from face of wall.

At R the masonry abruptly ceases, as noticed by Guthe. Here the line crosses a birket, whose bottom is 3 feet below.

Pushing our tunnel for 8 feet 5 inches in the same direction, we were fortunate enough to find a stone of precisely the same character, on a similar foundation, proving that the wall had continued to this point, though it was again lost up to the point under the terrace, where the work was temporarily suspended, so that we could give our undivided attention to the work in the field on "Zion," where we had been interrupted last autumn, and to which I had returned at the request of the Committee.

The wall where last seen points in the direction of a scarp exposed at the west of the old pool. Later on, it will be of paramount importance to learn whether there is any connection between them, and whether the wall crosses the valley higher up. The owners declared that they had removed the stones of a gateway near the point where the wall is lost beyond R. This testimony corresponds with that of a former guard of ours, who spoke of this destroyed gate long before we had ever seen the landowners. We excavated among confused foundation remains near the line of the wall here, but without finding any proper clues. The rock was not found.

Notwithstanding the differences between the masonry at M and Q, the scarp that connects them proves that they are on the same line of wall LR. We shall now return to the corner L where the inner face of the wall ADJ butts up against LR, and endeavour to see which is older.

This wall ADJ we have shown to have diverged from the original line ALK whose inside face would have cut the line of the wall LR several feet beyond L; hence the line LR must have been laid out when the wall ALK was ruined just beyond L, as it shows an unbroken face to that point, forming a corner or right angle with the line AL. In other words, it seems probable that the original wall ran in the line ALK,

enclosing the pool; falling into ruins it was rebuilt from A as far as L, the part LK being left ruined, and the line altered, running up to the west side of the valley to exclude the pool, forming the wall ALR with a corner at L. Later, when it was again desired to include the pool within the city, the old wall across the valley was rebuilt, as shown before, on the line ADJ, which diverges from the old line ALK.

The line ALK is certainly older than the line ADJ, and older than the wall LR; it is also older than the line ALR, *supposing the latter to be truly a line excluding the pool*, in which case ALR is older than ADJ. There is, however, another possibility, *i.e.*, that the wall LR was joined on the wall ADJ and existed along with it as an inner wall, the pool still being included in the city by ADJ. In other words, LR is more recent than ALK, but the remains do not positively prove that it is older than ADJ. Against this possibility is the fact that beyond the point S the inner face of the old wall was found to curve as if to give additional internal strength behind a true corner at L, where the wall ALR excluded the pool. Moreover, it should be noticed that while the inner face of the wall ALK is preserved for 20 feet at S, and probably also exists where the outer face was seen at H, all traces of it have disappeared just beyond the point L. It looks as if remains here had been removed to form the new corner of the line ALR. Had LR been built on to the wall ADJ we would have expected the junction not at L, but a few feet beyond in line with the inner face remaining at S and probably at G and H.

Hence I prefer the first view presented that ADJ was built on to LR.

The facts thus very well suit the theory which I broached in a letter to the Committee after reading Sir Charles Wilson's notes in the last *Quarterly Statement*. He held that the wall which seemed about to run across the valley must be Eudocia's, as she included the pool, which at Herod's time was excluded. I wrote that it still remained to be proved whether the wall did run across the valley, or up its west side, or both. I added that if the wall ran across this might prove that it was not Herod's, and that it was Eudocia's, but that she may have rebuilt in a line older than Herod's, for I could not and cannot believe that Hezekiah, or whoever the constructor of the Siloam tunnel may have been, would have undertaken this expensive work merely to bring the water from one point outside the city to another point outside. In Herod's time it may have been convenient as well as safe to exclude the pool. Well, the spade has brought to light not only a line of wall crossing the valley, with a separation in a somewhat divergent line, but also another wall running up its west bank, probably representing an alteration of the line to exclude the pool, at a period intermediate between that of the original valley line and that of its rebuilding. Hence I affirm that ALK corresponds to my view of the position of the wall in Hezekiah's time (Nehemiah's as well), ALR to Herod's line and ADJ to Eudocia's, but with the present data before us it would be unscientific definitely to assert that the three walls must belong respectively to Hezekiah, Herod,

and Eudocia. The key to the various styles of masonry in wall building has not yet been found (and I for one am sceptical of its discovery), hence the argument at present must rest on the lines followed by the walls and their correspondence with historical data. An inscription may at any moment upset our theories. But the above correspondence is highly suggestive.

It cannot be argued that a wall 44 feet in height could not have remained unused and perhaps unknown from the time of the supposed alteration of the line to exclude the pool at or before the time of Herod to its rebuilding by Eudocia. For this same height of wall as repaired has remained unknown for centuries till we found it the other day. Granted that before the rebuilding it was buried in *débris* as it is to-day, once having found the top while laying out her line, Eudocia cleared the face to the base-wall in line with the buttress faces and carried it up. Nor can it be said that as the *débris* she found over the top of the wall could not have been deeper than the *débris* now, which is in places hardly 2 feet (though before the present terraces were made it was somewhat higher), therefore, the wall she repaired could not have been buried so long before. For the wall as standing to-day, its top the same distance of 2 feet under the surface, could be repaired to-morrow, and yet an even longer time has elapsed since its ruin.

We have in this report been considering the line (or lines) of wall beyond the point B, and we must now glance at the connection with what has been described before. For reasons to be given later, I shall begin the comparison at the point where the wall enters the Jewish Cemetery. On pp. 245-246 of the last *Quarterly Statement* may be seen specimens of the wall as it enters the Cemetery, leaves the Cemetery, and at its north-west junction with the gate, *i.e.*, "Specimens at A, B, and C." These evidently belong to one period, which is the same as that of the *first* gate at this point. The tower near the gate (Specimen D, last *Quarterly Statement*) is of superior masonry, but it was shown to have been added on to the line of wall which runs straight behind it. The wall here is built of roughly hewn stones, plastered, with good masonry only at one point (*see* Specimen E, last *Quarterly*). The reparation of the old wall ALK on the line ADJ is also of roughly hewn stones, but as seen at the buttresses this old wall is like the Specimens A, B, and C, which may thus represent the building of Hezekiah (and earlier), to whom also the first gate belonged. The reparation of the walls by Eudocia began somewhere beyond the gate, though she found the inside face of the old wall intact at S. The tower might thus be later than her time, and this view is supported by the fact that the tower is later than the apparently Roman Baths, as shown before by the fact that a wall belonging to the baths was broken away for its construction. The third gate might belong to Eudocia, and the second to the intermediate period indicated by the line ALR.

Specimens of masonry M and Q show that the wall LR may have been used in two periods. The mason marks at M are curious. We are most

familiar with these in crusading work, and these stones certainly correspond to the masonry in Kalaât el Husn, as described by Major Conder. It is difficult to imagine a crusading wall at this point. Has it been proved that mason marks were unused in early masonry? The masonry at Q is very like the wall north-west of gate. Consideration of position showed us that the balance of proof lay in favour of the laying out of the line LR before the line ADJ, and after the line ALK. The work at Q may represent its original masonry, and that at M some rebuilding at any period. But all this is tentative. Could a gate be found with some ornamentation, or best of all some inscription, our task of solving the chronology would be much easier.

The above report does not cover the whole labours of the last season, for three weeks' hard work have been done in the ground where the Committee desired me to make a section across the line of our wall, somewhat east of the "inferred tower" (see map in *January Quarterly Statement*), running it north to the road coming from Bâb Neby Daûd. It was thought we might strike another line of wall, as the masonry of the wall we had found here was not regarded as very ancient. This wall was in use during the three periods of the gate near the Protestant Cemetery. Unexpected light has just been shed on the third period of this gate by Professor Kennedy, of Edinburgh, who observed a Latin *Graffito* on the base of a quarter-column pilaster used in the making up under the paved road leading to the highest hill, proving that the third gate was built in Roman times or later. We found the tower exactly at the place inferred. This was a decided gain. We also sank a shaft along the inside face of the wall, finding this was built on a few feet of rubble, resting on the earth. Going down for a few feet more we came on the top of a massive wall-foundation, just inside the line of the upper wall. Clearing its face, we found it towering from the rock for more than 10 feet in massive courses of roughly-squared stones, not dressed. We have also struck this grand foundation at a point far below the tower, which rests on rubble and earth, and hope to connect the two points. The discovery delights me. It proves that an old wall existed here so long before the upper wall as to have been buried and forgotten when the upper wall was built. I have never maintained that the masonry seen last autumn at this point was ancient, but that the ancient wall had once followed this line. To have now found the old foundations a few feet inside the later line, proves my point more completely than to have found rough foundations directly under the later wall. The line of wall we traced from the Protestant Cemetery to Siloam showed smooth masonry as far as what I have called the inferred tower; beyond this point no dressed masonry was seen till it enters the Jewish Cemetery, where the drafted work appeared and was seen at various points to Siloam. But for 100 feet or more in a field between the inferred tower and the Jewish Cemetery, large foundation stones, similar to what we have just found, were discovered. In the *January Quarterly Statement* I said that the smooth masonry, built on

the old line as far as the inferred tower, might represent a later wall, perhaps branching off to Burj el Kebrit, while the older line continued to Siloam. This point is now in a fair way of being settled, as we are following both lines.

During the first six weeks of the season I was absent in Beyrout, owing to illness. After I left, the work was continued at half speed. During this time the baths were partly excavated, but the tunnels were still open on my return. At the end of 16 days, the health of Yusif, the foreman, demanded a rest, and the work was suspended for three weeks. It began again a few days before my return, when it went on at full swing.

The summer has been unusually hot, and a great contrast to the last. Our camp is now pitched near the work on the slope of the hill, which I have been watching all day while Yusif overlooked the excavations at Siloam. These, of course, I visited daily. It seemed as if we never would be finished with Shafts F and I. So slow was the process of quarrying that sometimes 2 feet represented a day's progress, and a month had passed before they were completed. The baths also took a great deal of time, the lengths of shaft and galleries required amounting to 240 feet. We have managed to dispense with frames almost entirely. Meanwhile not the slightest accident has occurred. Nor has the season been attended with annoyances, great or small. The landowners have given no trouble: usually no bargain is necessary. Perhaps the fact that we were practically obliged to employ a man while digging in his own field, without the option of dismissing him for incorrigible laziness, might be set down as an annoyance. Yusif certainly took this view. It was in this field that we made a curious find along the wall LM. It was an adze, probably left by one of Dr. Guthe's workmen, as he excavated at this point.

We were glad to welcome to the camp the Governor of Kerak, who rendered us so much assistance in his district. His Excellency Hamdi Bey continues his cordial interest and Ibrahim Effendi is as devoted to the work as ever. The work grows more interesting every day, and I hope that the next report will throw more certain light on the gradually clearing question of Jerusalem topography.

The plans of Mr. Dickie speak for themselves and need no commendation from me. But I cannot close without expressing my gratitude for the invaluable assistance he has rendered me in the general work at a time when I most needed it.

JERUSALEM, *September 5th*, 1895.

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