

PLAN TO ILLUSTRATE DR BLISS'S REPORTS.

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

To face page 1



SCALE
Feet 0 100 200 300 400 500 Feet

THIRD REPORT ON THE EXCAVATIONS AT JERUSALEM.

By F. J. BLISS, Ph.D.

THE return of these crisp December days recalls to me vividly the corresponding season of last year when I was also in Jerusalem. But with what a difference! Then I was full of anxiety about the granting of the permit, which seemed a far-off thing. Then I wandered over the fields to the south of the city, wondering what secrets they might contain, and examined every scarp and stone, speculating as to the hidden line of wall. Now, for seven months, the permit has been in my hands. Now I walk over the same fields; happy in the fact that their dim promises have been fulfilled; glad to say: "Here runs the wall for over 1,000 feet, here is a paved street, here are towers, here the long-lost Gate of the Essenes."

My last report was largely concerned in describing the great outer scarp of defence, upon which I argued that a wall may once have been built, though no traces of masonry remain. I also announced that a true wall had been discovered, beginning at the fosse which separates it from the work of Maudslay, and running at first south-east generally parallel to the outer scarp. We had traced this wall for about 150 feet to its turn at Tower I. I gave the reasons for inferring that a gate occurred in the wall at a distance of 105 feet from the fosse, together with a general description of the masonry.

The present autumn season has been entirely taken up with tracing the continuation of this wall to the east, and with work about the gate. I warned the readers of the *October Statement* to take my arguments in regard to the outer scarp as tentative. I am now of the opinion that there was never any wall directly upon that scarp, but that it acted as an outer defence to the wall found to the east of it. This view is made the more probable by the fact that we picked up the outer scarp again between Tower II and Tower III, 25 feet outside the wall, and running directly parallel to it for a distance of more than 50 feet.

The gradual process which led to the discovery of the various periods of the gate was a most interesting and delicate operation. It is always my preference to lead the reader, if possible, along the steps of discovery, so that he may share with me not only the perplexity but the delight when matters, at first obscure, become flooded with light. However, to make the matter clearer, I will say at once that this gate is proved to represent certainly three, and perhaps four, distinct periods, as shown by the different super-imposed door-sills. In the sections, *a-a* represents the upper sill, *b-b* the rough filling below it, and *c-c*, *d-d*, and *e-e*, the sills below.

My first hope for finding a gate was given by the paved road which we found coming down from the north-east, having a sewer under it.

This we followed in galleries, until we at last reached a block of good masonry at the stone *f* in section CD. Here we were puzzled to find our work in the gallery blocked by great blocks of stone, not very thick. We then had no idea that these were to prove to be the various sills of the gate (seen of course from the inside) together with their respective paved roads leading to them, super-imposed, of course, upon the pavement which we had been following for so long. It is fortunate that traces of these upper roads had disappeared a few feet beyond the gate, else our task in tracing the lowest pavement would have been difficult indeed.

On discovering the block of masonry, we supposed it to be part of a substantial house at this point. The work in the gallery becoming difficult, we opened up from above, making, finally, the large cutting represented in section AB.

As related in my last report, we went down till we reached the rock, but found no traces of the pavement beyond the masonry. The place does not seem to me important, and we left it for a time. Later, I decided to give it another chance, and the wall running to the fosse was found. The matter was still far from clear, for the space between *g* and *g'* was filled up with masonry, which seemed to be continuous with the wall. However, whereas the course continuing north-west beyond *g* consisted of well-squared stones, with fine jointing, between *g*—*g'* the work was coarse, with badly-formed joints, and included a stone with a rounded face, certainly not *in situ*, and doubtless once belonging to a pilaster. More careful observation of the line *a*—*a*, the top edge of which projected a trifle beyond the stone *g*, and beyond the rough work on to *g'*, revealed the fact that the edges of the stones under the rough work were polished with that irregular peculiar smoothness produced only by the wear of feet, while the part under the stone *g* had not this polish. The conviction thus flashed upon us that we had here a blocked-up gateway. This theory at once explained the fine masonry found at *f*, at right angles with the course *g*, which must be the inside of the gate. Until we saw that the course *g* did not continue to *g'*, this finely faced masonry, apparently a chance section across the wall, was a puzzle. And now that this point was clear, one difficult question remained: Why was the sill at *a* 45 inches higher than the pavement below *f*?

The theory that steps had led up to the gate was entertained and dismissed. We then made a more careful clearance outside the gate, and found the lines of slabs *c*—*c*, *d*—*d*, and *e*—*e*, whose edges all showed polish from wear, suggesting that all were door-sills. Measurements showed that it was the lowest one that belonged to the period of the pavement. However, further investigation seemed imperative, and we began by removing the rough stones which blocked the upper sill between *g* and *g'*, finding that sill in perfect preservation. There were the sockets in each corner, and the holes in the middle where the bolts of this double gate had been fastened down. It was interesting to note that at the angle where the gate had turned above the socket the stone was eaten

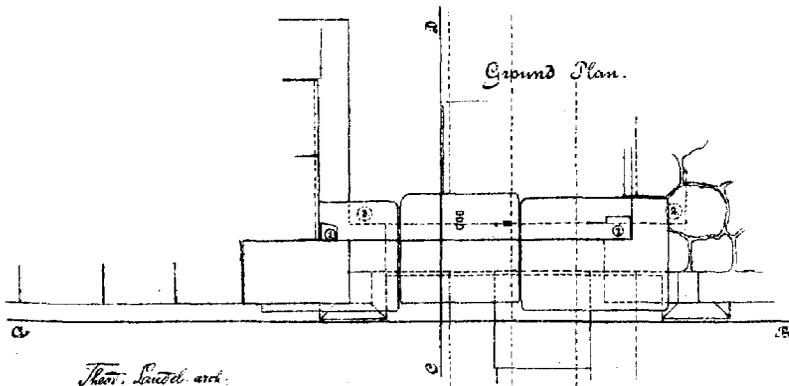
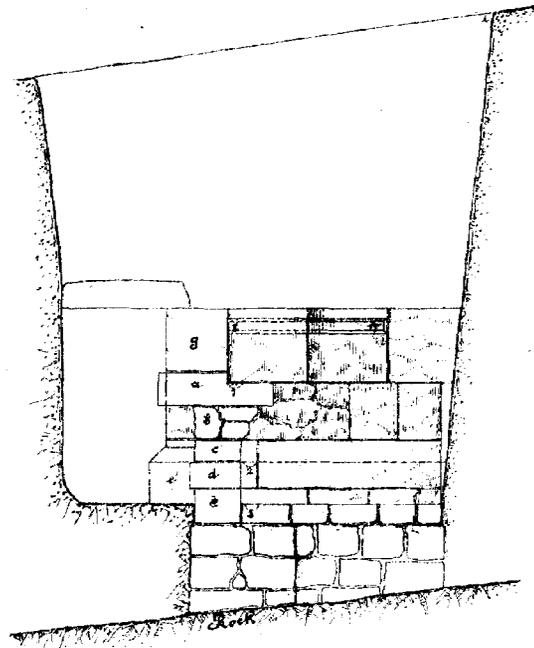
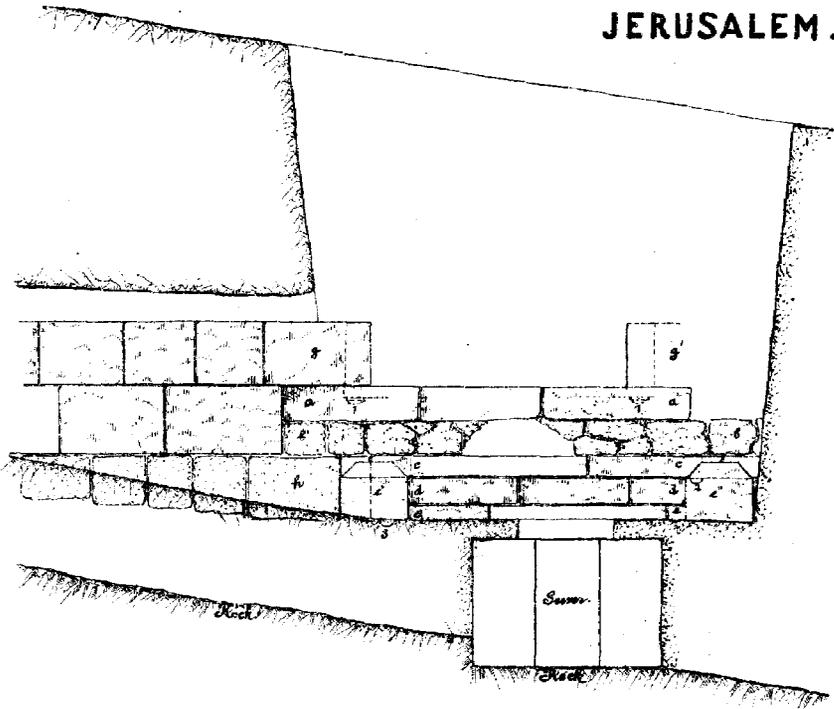
ANTIQUE GATE RECENTLY DISCOVERED

Section A B

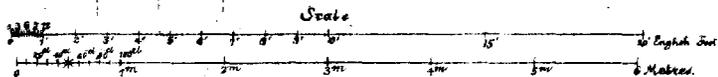
AT

Section C D

JERUSALEM.



Thos. Lancelotti
Jerusalem, 1. Decr. 1904



away in a series of furrows. A recent storm has thrown down the gate of Neby Daüd (Zion Gate), and here at the angle the same furrowing may be observed. A mere glance at the over-lapping iron sheets with which the door is plated reveals the cause of this peculiar attrition in the Zion Gateway, and suggests the natural explanation for the same phenomenon observed in our ancient gate.

This upper sill is composed of three large slabs of fine hard white limestone with tinges of red. A glance at section CD will show that the surface is of two levels, that part inside the door being 4 inches lower than the part outside, leaving a support against which the closed door should rest. On section CD may be observed two stones beyond the stone *g*, with a groove 6 inches high and 4 inches deep, running along the top of them in the line *i-i'*. These stones are much worn, the groove being clear only in the second. Before the discovery of the gate I had supposed them to be later filling in. The tape measure settled the matter differently. The width of the upper gate is on the outside 8 feet; on the inside 9 feet 10 inches. Each door, then, would be 4 feet 11 inches wide, from *i* to *i'* is just this distance; when the door stood open it rested against these stones; the door had evidently a strong iron bar nailed across it, and the groove was made to accommodate the bar, so that the door could open directly against the wall.

The middle stone of the three that forms this upper sill is not quite in line with the other two. It is noticeable that this upper gate stood immediately in the line of the wall, being a mere opening that must have been without striking architectural features. The sill is only 10 feet under the surface of the ground.

The width of the lowest gate, 8 feet 10 inches, could be measured on the outside between the two flanking stones *e'* and *e''* which project 6 inches from the line of wall, and 18 inches from the line of the sill *e-e*, one stone of which forms the roof of the sewer. We thus were certain of two periods, the highest and the lowest, and the claims of the lines of slabs *c-c* and *d-d* remained to be considered. It seemed at first impossible to examine them without removing the upper sill, which I was very loath to do. However, we proceeded cautiously to remove some of the rough filling (consisting of small stones and very hard mortar) between *a-a* (the upper sill) and *c-c*, making a hole in the centre of it without disturbing the upper sill. No marks were found in the slabs of that line. We then proceeded carefully to remove the slabs inside the gate which seemed to belong to the various super-imposed paved roads, and succeeded in finding the door socket marked 2. If this belongs to the sill *d-d*, then the part inside the door is on a level with the part outside the door, and not 4 or 5 inches lower, as in the case of the highest and lowest sills. If it belongs to the sill *c-c*, then the part outside the door would be 8 inches higher than the part inside, which is rather a too great difference. I prefer to assign it to *d-d*. Both *d-d* and *c-c* are polished by wear at the outside edge, and though we did not find a socket to certainly prove a fourth period, yet I think there were four. We assume,

then, this socket to belong to $d-d'$, but we did not find its fellow at the other corner, and as there are no bolt marks in the centre of the slab, it is possible that this gate had a single door. Its width was the same as that of the lowest gate, as the projecting stones e' and e'' belong to both periods. We had, as I have stated, inferred the lowest gate from the sill $c-c$ between the flanking stones e' and e'' , but happily the last link in the chain of evidence was furnished by Herr Sandel, a German architect, who, while taking measurements for the plans, discovered in the last stone of the pavement the socket marked 3, which belongs to this lowest gate. Its fellow in the other corner was, of course, buried by the slab containing socket 2. Thus, thanks to the fact that the sills were of different widths, we were able to study the four periods without removing any one of the sills. I know of no more interesting example of a place where four distinct periods may be studied in the short perpendicular distance of 4 feet.

The discovery has a most important bearing on the history of the south wall, for it shows that it ran along this line for a great length of time. The masonry, however, employed during these four periods was the same. Stone f , with its fellows, above the first pavement, is quite of the same style with stone g and the wall going north, though stone g itself was, of course, placed in its present position when the upper door sill was built. Stone h , with the rest of the course, though not so well dressed at the edges, as is often the case in a hollow course, has the comb-pick dressing found in the work above. However, under this course there is another course of quite different work, which occurs all along the line, and three courses of which are found at Tower I. I take this to belong to an older period than is indicated by the lowest door-sill, which, of course, we cannot assume represented the first occurrence of a gate at this point.

The general position, and the fact that a sewer runs under the gate, emptying itself twenty yards away, point to an identification with the Dung Gate of Nehemiah. It is also probably the Gate of the Essenes of Josephus, which should be looked for near the south-west angle of the wall, one gate being only 32 feet distant from the turn to the east at Tower I.

The finding of a gate at this point explains the line taken by the outer scarp. From G to M it runs in general parallel to the wall, forming a steep defence, which at M has the perpendicular height of 21 feet. Here the top of the scarp lies hardly more than 10 feet out from the wall. At M it turns at right angles as far as the point O, evidently in order to form a large open space in front of the gate. The meaning of the platform O, P, R, S, U, W, projecting north-west, is not quite clear. The fall at the top of the scarp between M and P is $18\frac{1}{2}$ feet, while the level of the base remains the same, the scarp at P (before the turn) being only 2 feet high at present, but there are plain signs that the top was quarried away, presumably in later times, when the wall was considered a sufficient defence. After the turn at P there is an abrupt fall in the base of the scarp of 8 feet. It has been suggested

that the platform O, P, R, S, U, W, was the base of a barbican, but in this case we should expect the road to point north, which direction has the steep contours against it, as well as inherent probability. I think there may have been here an outside watch-tower at one time to command the Bethlehem road. Another suggestion may be made: although the scarp in its present condition was fashioned for defence, yet it may have followed the general line of an earlier quarry; though that it is not simply a quarry I hope I proved conclusively in my last report.

The road from the gate probably crossed the Valley of Hinnom at the point where the present path from Bab Neby Da'ud crosses it, following the path up the hill beyond and joining the road from Bab el-Khalil further on. Yusif, while following the wall from the gate to Tower I, noticed that the soil on a level with the lowest course was hard and pressed together, and he suggested that the ancient path passed that way. He is a close observer and fertile in suggestions, a tendency I encourage, for among his many theories some turn out to be of real value. He spends his spare time either in reading Nehemiah or in wandering over the fields studying exposed scarps and the contour of the land, planning for the work ahead.

We are fortunate in having a man who, besides being trustworthy in his work and very popular with the labourers whom he keeps under firm control, takes also an enthusiastic interest in the topographical questions of the excavations.

As I hope that some of the many readers of these lines may visit Jerusalem in the near future, I will say for their benefit that the cutting above the gate is left open. In front of the gate the space is filled up to the level of the upper sill, but the interior is exposed to the level of the first pavement, so that the various sills, sockets, width of the wall, &c., &c., may be seen. The tunnel going north has also been left open for a distance of 70 feet, revealing the wall. The tunnel between the gate and Tower I is closed, and, by the way, is not even indicated in the plan. From the surface we have built a stairway to the upper sill, a fact which I mention to prevent any possible theorising.

In writing of the wall I shall first describe its direction with any especial features, and then the character of the masonry. At the date of my last report we had traced it from the fosse to Tower I. This latter consists of two distinct kinds of masonry, their faces built on different lines. The surface of the ground above descends in a sharp terrace, so that the top course at the south-west corner was hardly a foot underground, and the fellah who leases the field told me that he had often struck it with his plough without knowing what it was. From the south-east corner of this tower we traced the wall east, following the rock for 32 feet, where a small, irregular buttress occurred. At this point we expected a break, for in the direct line beyond there is a trench several yards long, from which the proprietors have in recent times taken stone, having destroyed the traces of the wall here. So about 90 feet beyond the break we made another cutting, and came across the wall

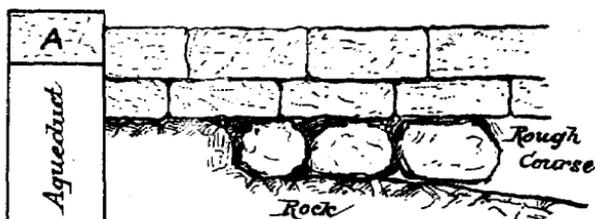
9½ feet out. This proved to be the face of Tower II, for after 27 feet it took a turn for 9½ feet at right angles back again to the old line which there continued. From the break the destruction had continued to Tower II, and had included its west side. At the south-west corner the rock-hewn aqueduct seen at X—Y, and described in my last report, entered the tower. For a distance of 22 feet it is so high that a man can stand upright. On the slabs of the roof we found the Fund's bench-mark done in lamp-black, and the initials J. B. It was a singular illustration of the chances of excavation. Sir Charles Warren, coming down the aqueduct from the north-east, had stood directly under this tower, and left his mark in the cellarage, as it were; thousands have walked in the field above the tower, while all were unconscious of its existence. Hereafter, when I see any especial feature of height or workmanship in a channel I shall want to open down from above. I, too, passed under one wall, yea, even at the gate, weeks before I discovered it, at the point where the sewer passes under it, and here the sewer was lined with three large beautiful blocks on each side, which Yusif warned me at the time must point to some especial building above, but I hardly thought of these again until they were once more seen when we found the gate. So I cannot crow over my respected predecessor! And here comes in a happy accident. Warren certainly traced the aqueduct down to this point.¹ For not only have we his bench-mark, but he describes the place where a man can stand upright; however, probably owing to some oversight, it is laid down on the maps only in the field beyond, stopping suddenly at the road. Now when I found the sewer to the north, I first took it for an aqueduct, and cleared it out to the east simply in order to see whether it joined Warren's aqueduct in the next field. We pursued it to the road which it struck some 50 feet north of the expected point, and its base was considerably higher than even the surface of the ground where the aqueduct was known to lie. Hence the identity of the two was impossible. But in the meantime the paving at the side had been seen at so many points that the paved street was first inferred, then proved, and then it was an easy matter to follow it back to the wall at the gate. I doubtless should have found the wall sooner or later, but the key which actually fitted the lock was furnished by the draughtsman, who years ago in a London office neglected to lay down the aqueduct beyond the road!

I have connected on my plan the aqueduct seen by us at X—Y with the part seen at the tower, bringing the line through the point where a stone-lined air-hole was pointed out to me by the proprietor, who told me that they found it and proved it to be dry some years ago when water was still conducted to the city by the low level aqueduct. I followed the

¹ This appears to be the aqueduct which was traced by Lieutenant, now Major-General, Sir Charles Warren for 700 feet, and was found to be crossed and used at either end by the present low-level aqueduct. See "Recovery of Jerusalem," p. 233. Letter No. IV, p. 15, of 2nd September, 1867; Letter No. VIII, p. 20, of 2nd October, 1867; and Jerusalem volume ("Survey of Western Palestine"), p. 376.—[Ed.]

aqueduct from the point where it passes under the tower for 66 feet, where it got very low and narrow ; besides, the measurements from this point doubtless lie somewhere in the archives of the Fund. I draw on my plan a line connecting it with the part already laid down on the maps beyond the road.

This aqueduct seems to be older than the main masonry of the tower. The lowest course resting on the rock to the east of the aqueduct does not enter into the argument. But the fact that stone A is higher by a few inches than the rest of its course seems to be due to the aqueduct ; it is easier to suppose that the whole course, including stone A, was built in its present position to accommodate the already existing aqueduct than that the masonry existed before the aqueduct and that stone A was then raised, for this would have disturbed the whole superstructure ; it would have been easier to have cut it away at the bottom.



Directly parallel to the wall beyond Tower II, and lying 26 feet out from it, we found a scarp, having a perpendicular depth of 7 feet. We traced it east for 50 feet, from which point it still continued on, and probably it follows the line of the wall. Opposite the south-east corner of the tower it took a turn south at right angles in a line corresponding to the east side of the tower. We did not find the point where it turned west again. The top was much quarried away, and we turned west, following a wrong clue in a tunnel too close to the probable turning to permit of a safe second tunnel. It is possible that the scarp, after turning west, turned back again in a line with the west face of the tower, and then followed the wall again west. We had last seen the main outer scarp at X—Y, where it was only 2 feet high and disappeared in the higher aqueduct. We drove in a tunnel along the rock from a point south of the low level aqueduct to that aqueduct, and found no scarp ; the small difference of level between the two aqueducts shows that no scarp could exist between them ; hence I believe that between X—Y and Tower II there was never much of a scarp. The possibility of a scarp, of course, depends upon certain natural conditions.

Given a certain line of wall, and given the intention of defending it by an outer scarp, the carrying out of that intention depends on the fall of the rock at various points. Thus, at one place there might be a high scarp made, at another a low scarp, and at another no scarp at all. This is just what we have found.

This scarp, of course, faces south. Parallel to the wall, in a line with

the face of Tower II, was another scarp facing north, making a ditch in front of the wall. Whether this was intended for a fosse or was mere quarrying did not appear.

Twenty-six feet beyond Tower II the low level aqueduct enters the wall, several feet above its base. Whatever may be the date of the present masonry, this aqueduct is later, for the wall was broken to effect its entrance, and then repaired. At this point the breadth of the wall was found to be 8 feet.

The wall was traced almost the whole distance between Tower II and Tower III, by tunnels worked from either end. The base of the wall drops 21 feet between the two towers. Tower III has six courses of masonry still preserved, the top being not 3 feet under the surface, though its existence was entirely unsuspected by the proprietor.

Beyond the tower we followed the wall to a point under the further end of the road. As we did not come to terms with the proprietor of the field beyond, we worked there only one day, but saw the wall at two points, distant from the tower 56 and 112 feet respectively. We thus fell short of the inferred tower. As the west side of Tower II was destroyed, I was obliged to estimate its distance from Tower I at 112 feet. I took this figure as an estimate in making my trench for Tower III; as a matter of fact, its corner was found 7 feet beyond. But on one day of work in the field beyond, we were much hurried, and in trenching for the next tower, I took the first estimate of 112 feet and not the proved distance of 119 feet. Of course we were lucky in getting on the wall 112 feet, but I never pass over the spot without a vain regret, and meditations on Naboth's vineyard. As the faces of the towers are not the same (Tower I being $34\frac{1}{2}$ feet, Tower II probably $29\frac{1}{2}$ feet, and Tower III 26 feet), the distances between them may also differ. I hope the way will open for us to return to this field, when we may not only find the tower, but determine whether a wall branched off to Burj-el-Kebrit in the line laid down on the map of Marina Sanuto.

From Tower I to the second point where the wall was seen in this field, it follows the same line exactly— 91° . Accordingly, having come to a friendly arrangement with the fellah who owns a cauliflower field beyond, we opened up again in the same line, finding the wall somewhat to the south (hardly 10 feet) and followed it for 124 feet in a generally south-east direction, with a slight variation of direction:—19 feet, 114° ; 57 feet, 107° ; 32 feet, $103\frac{1}{2}^\circ$; $16\frac{1}{2}$ feet, $112\frac{1}{2}^\circ$. As the upper masonry had entirely disappeared, only very rough foundation work remaining, it is possible that part of the line, up to the last turning, may have been straight above. At the point where the first bend occurs there is a slight re-entering angle; 28 feet beyond this corner, the foundations of the wall appear on a scarp (set back 1 foot) $6\frac{1}{2}$ feet high, which continues for 30 feet, and then turns away from the wall. In this field the top of the rock is from 10 to 14 feet below the surface. Although we have worked for almost seven months, we have been very fortunate in the soil, which has been mainly good brown earth, excellent for tunnelling. How-

ever, in this field we had a bad example of the loose shingle which so often troubled Sir Charles Warren. It occurred in the tunnel near the beginning of the field, pouring down like water into our boxes, and leaving such a cavernous space beyond, that when the tunnel was cleared out I could stand upright and then not be able to touch the top with my uplifted arm. In the hope that the shingle did not continue far, we abandoned this hole and opened up from above, beyond, where, fortunately, it came to an end.

The turn to the direction $112\frac{1}{2}^{\circ}$ was a lucky one, for it took the wall immediately down into a lower field, whereas if it had kept on in the line $103\frac{1}{2}^{\circ}$ it would have passed across an intermediate field belonging to another owner. Thus were we saved another negotiation. Sixteen-and-one-half feet beyond the turn the clue was suddenly lost, even the foundation work giving out, so we opened up in the field below, 105 feet beyond in the same line, and luckily struck just upon the juncture of the wall with a tower. The wall here, with the east face of the tower, is built upon a scarp $6\frac{1}{2}$ feet high, which is accordingly cut at right angles. The top of the rock is 17 feet below the surface. We traced the wall as far as the cemetery—distance, 26 feet; direction, 111° . Only this east face of the tower is preserved, and that so badly that it is impossible to be sure of its depth, though certain indications decided me to take it at $17\frac{1}{2}$ feet. As the rock on which it rests continues scarped in the same line for 9 feet more, it may be that $26\frac{1}{2}$ feet was the depth of the tower. At any rate, it is distinctly deeper than the other tower. The scarp does not turn at right angles to form the scarped base of the tower's front face, but the rock is cut away at an acute angle back into what must have been the foundation of the tower; in other words, the rock had been quarried away. But when? Before the tower was built or after it was destroyed? The latter is more probable, as I wish to believe, though there was nothing to settle the question definitely, the tooling being the same under the masonry and in the irregular part. If before, then the well-cut angle in the rock at the junction of wall and scarp was a happy accident in the quarry taken advantage of by the builders, and the bulk of the tower was built across an irregular base; if after, then the scarp was originally intended for the base of the wall and tower.

To the west of Tower IV the ground has recently been pillaged for stones so that the exact line could not be recovered, but as the angle of tower and wall is in line with the bit last seen in the cauliflower-field above, it is probable that that line was preserved. However, on my plan I have indicated a different line suggested by very slight remains of building for a distance of 23 feet. One of the disadvantages of writing a report while the work is in progress is that certain tentative conclusions have to be re-considered. My plan was sent off to England last post, and I now think that this line of 23 feet is a trace of later building, for not only is there no reason for a change of direction, but this line would destroy the proportions of the west side of the tower.

The interruption caused by the large Jewish cemetery is an annoying

but I hope will not prove a serious one. The wall is now under the surface contour 2299, or 130 feet lower than the base of Burj el Kebrit, which, if the wall took a bend up the west side of the Tyropœon valley, would naturally be in the line. In other words, the turn should have occurred higher up. All the archæologists who have visited the spot agree with me that it is going to include the Pool of Siloam. Josephus appears to imply that Siloam was excluded, but that is against all common sense. Such a theory would destroy the *raison d'être* of the Siloam Tunnel. The Virgin's Fountain was outside the city; what would have been the use of this difficult and expensive work if it merely resulted in bringing the water from one point outside the wall to another point outside the wall? One wall is now pointing in just the right direction to include the pool, and a transverse trench across the line produced beyond the cemetery will, I hope, reveal it again. The leap is a big one, but unavoidable.

The position of Tower IV falls 25 feet short of its expected position on the basis of calculation given by the distances between the known towers and the length of face of Tower III. According to this calculation it should really be the seventh tower. The fourth we fell just short of, as described above; the fifth should have occurred a few yards before the point where we picked up the line again, and the sixth should be looked for on that line.

As a matter of fact we found no sign of it, the foundation masonry being found continuous at the point where the tower should project, though curiously enough the scarp on which the wall is built up to this point turns out and away from the wall. As will be shown later, Tower IV is of a distinctly different style of masonry from Tower III, and we have pointed out that its width is greater than that of the other towers; these facts, with the fact of the absence of the expected tower in the field above, point to the idea that the work *now in situ* up to Tower III may belong to a later construction which, though following the old line for some distance, branched off towards Burj el Kebrit, perhaps in the field where our work was interrupted, while the older line ran down to Siloam. The value of this suggestion we shall hope to settle one way or the other some future day.

The tracing of this wall has shown the danger of inferring the line of a buried wall along the line of a modern terrace, no matter how steep. We have crossed diagonally four terraces, two of them exceedingly high and steep.

The total length of the wall followed from the fosse to the cemetery measured along the line between the towers and the faces of the towers is 1,050 feet. We have shown that various interruptions occurred, but the sum of the lengths of the wall actually seen is over 50 per cent. of the whole line. Much of the work was underground, but parts are still left exposed—one corner of Tower I, part of Tower II, and three sides of Tower III, besides the gate and the wall to the north of it, as mentioned above. I fear, however, that in time these will get covered up again.

We must now return and describe the masonry belonging to different parts of the wall. I recognise five distinct styles:—

- (1) Rubble foundation.
- (2) Roughly-dressed stones.
- (3) Smooth-faced stones.
- (4) Drafted stones with flat centres.
- (5) Drafted stones with projecting bosses.

(1) *Rubble Foundation*.—This occurred at many points along the line upon the rock, to a height of about 3 feet. It consisted of rough stones of various sizes, built usually without any regard to courses. In the 125 feet of wall traced in the cauliflower patch beyond the great break we found nothing but this rubble *in situ*; here it was sometimes 5 or 6 feet high, and in places was built in rough courses, though the stones showed no signs of tooling. Usually, however, the work was irregular, small stones occurring near immense rough blocks. In places the rubble had been plastered over.

(2) *Roughly-dressed Stones*.—These were noticed as following a lower course, below the finer work and generally above the rubble, at many points between the fosse and Tower III. A few feet south-east of the gate the upper work disappears and only the rough course remains, slightly in advance of the upper line, till we get to Tower I. Here three courses of this work are *in situ*, their heights being 1 foot 8 inches, 1 foot 4·5 inches, and 1 foot 4·5 inches respectively. They are set back, one from the other, but the lines are not exact; 32 feet beyond the east angle with the wall an irregular buttress of this masonry occurs. The stones in the tower are much weathered: some of them have signs of a draft; they seem to have been originally dressed with a tool having an end 2 to 3 centimetres broad, producing a long stroke, but here and there signs of the comb-pick are visible. The joints are coarse, as the stones are not well squared, and are filled with the rudest lime, whether at the time of building or in reparation it is impossible to say. At Tower II this style occurs on the rock.

(3) *Smooth-faced Stones*.—These are the characteristic stones of the wall from a point 34 feet south-east of the fosse to the point 112 feet beyond Tower III. They belong to the periods of the four door-sills, as shown in the discussion of the gate. North of the gate the base of the wall rises rapidly, and the heights of several courses could be measured: 2 feet, 2 feet 1·25 inch, 2 feet 1·25 inch, 1 foot 11·6 inches, 1 foot 1·4 inch, and 10·2 inches. The latter is a plinth course, built in the rougher masonry below, as shown in the drawing, "Wall north of Gate." The longest stone occurs in the breadth of the opening for the gate; it is 6 feet long. The average length is about 3 feet.

This masonry north of the gate appears to be all one, but a few feet beyond the gate signs of a reparation became visible. This reparation consists in the use of a fine mortar to fill up the irregular joints and repair a broken corner, where a false joint is there indicated in the mortar.

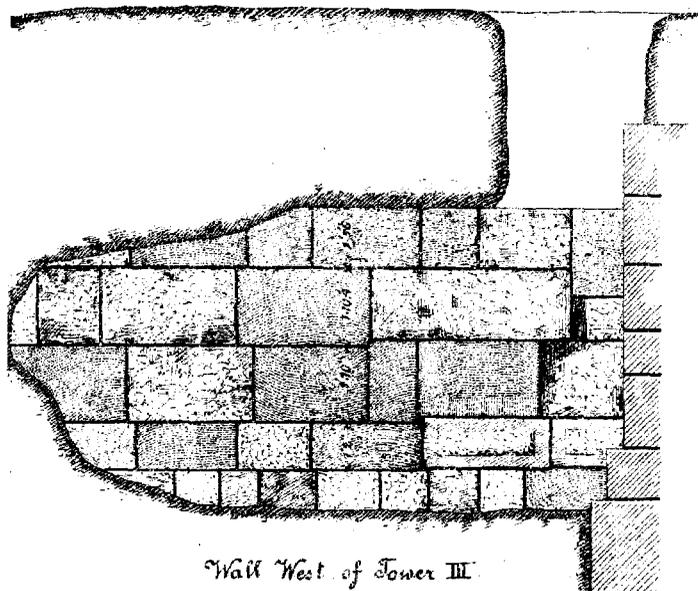
I could not decide whether mortar had been originally used, although, where the wall is broken at one point, mortar was certainly seen on the inside of one stone. Before the reparation begins the joints are not so fine. The stones are all well dressed by the comb-pick, which has at different points seven, eight, and nine teeth to the inch. At the present day the comb-pick is used, the number of teeth to the inch varying in different tools.

Between the gate and Tower I the wall was much ruined, and this style of masonry appeared only for a few feet in one course. It was seen again at the east junction of the tower and the wall, and again at Tower II, from which it was traced almost without interruption to Tower III. At Tower II the faces of some of the stones were covered with plaster, which was notched in the manner of the plaster on the tower north of the fosse described in my last report. I have seen this in Byzantine work. Beyond Tower II a plinth course occurred built on the rough stones and projecting 7 inches from the wall above. Courses above were measured at 1 foot 8 inches, 2 feet 1 inch, and 1 foot 9 inches in height. A drawing is given of the wall (immediately) west of Tower III. Here are two plinth courses, each projecting 5 inches. The courses, beginning with the upper plinth, measure 1 foot 2 inches, 1 foot 10 inches, 1 foot 10·4 inches, and 1 foot 5·6 inches. Of the dressing I will speak presently.

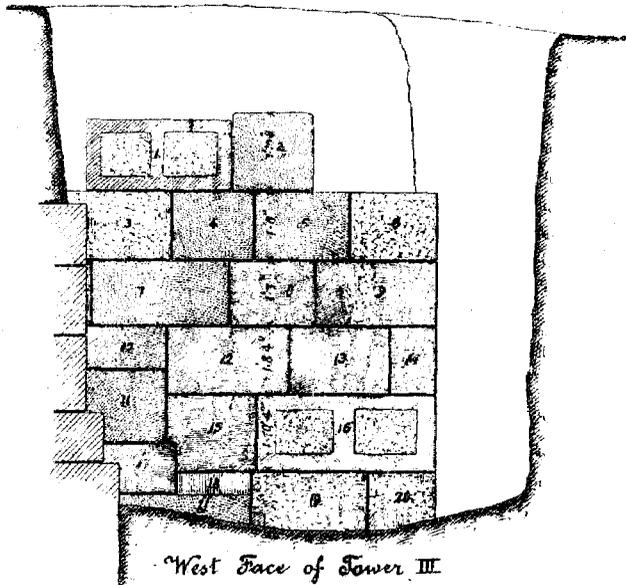
The west face of Tower III is also drawn. The four courses above the plinth measure 1 foot 10·4 inches, 1 foot 8·4 inches, 1 foot 7 inches, and 1 foot 8 inches. The work is plainly one, but various styles of dressing occur. Nos. 5, 11, and 21 have the ordinary comb-pick dressing, which may be slightly observed on the bosses of stone 16. The tool used on No. 7, though somewhat different, has also teeth; 6, with the bosses of 1, is roughly flaked; 3 and 4 are indefinite, owing to weathering. But all the rest of the twenty-one stones have clearly the marks of what Dr. Petrie calls the "long-stroke picking." He thus describes it: "This is done with an edge or point without showing any breadth of cut; the strokes are somewhat curved and in groups of parallel cuts." According to him this was used earlier in Palestine than the comb-picking, which he thinks was introduced by the Greeks. On No. 16 we have the two styles on the same stone. The drafts have the long-stroke picking, and the projecting faces (or bosses), though at first roughly flaked, are re-touched with the comb-pick.

The wall west of Tower III shows the two styles with the comb-pick in the predominance. Thus we have the two styles appearing not only in the same course but in the same stone. The wall here has also been repaired with plaster, but there is no evidence that mortar was used originally. In general, the masonry described under this heading is similar to the stones in the south wall of the Haram of the time of the insertion of Hadrian's inscription upside down and, therefore, later than his time. Smooth stones, comb-picked, also were found fallen outside of the wall in the cauliflower patch and outside of the wall beyond Tower IV.

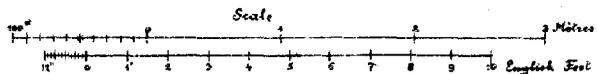
SPECIMENS OF MASONRY IN SOUTH WALL OF ANCIENT JERUSALEM.



Wall West of Tower III.

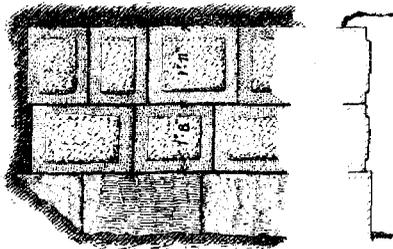


West Face of Tower III.

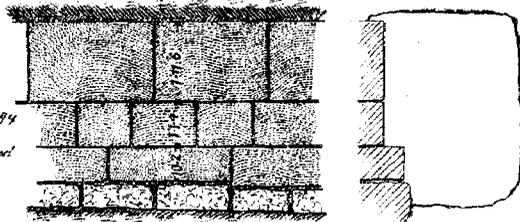


Wall North of Gate

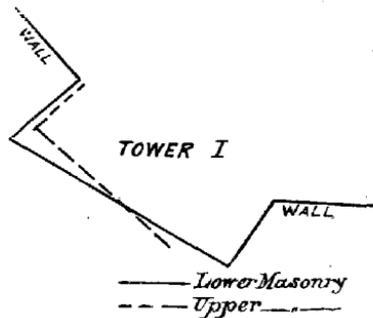
North Face of Tower I, Superstructure.



Jerusalem, Decr. 1894
Thos. Rand. architect



(4) *Drafted Stones with Flat Centres.*—These centres can hardly be called bosses as they project scarcely one-eighth of an inch. At Tower I there is a superstructure in the old work, described under (2). The later tower was evidently the shorter of the two. It is broken away abruptly beyond the corner, but its face is built on a different line from that of the lower, and if this upper line were projected it would fall outside the lower



line. The superstructure consists of three courses *in situ*, the two upper being drafted and the lowest plain. The plain course and the drafts of the upper courses are dressed with the comb-pick, which seems deeper than in the masonry noticed before, but this may be due only to a difference in the individual workmen. The centres are roughly flaked. The upper courses measure 1 foot 8 inches and 1 foot 11 inches. The plain course is of the same time of building as the others and differs in style from the other work, as just mentioned, only in the depth of picking. These drafted stones have their exact counterparts in many stones built into the modern wall, especially near Bab Neby Dauid, perhaps taken from the old line. In the comparatively modern blocking-up of the Golden Gate there are similar stones. They differ from the drafted stones (with double boss), described under (3), only in the dressing of the drafts. In both cases the drafts are very wide.

(5) *Drafted Stones with Projecting Bosses.*—This is the style of masonry at Tower IV and in the wall going on to the Jewish cemetery. They differ from anything described above. The stones are square. Four courses with bosses rest on a plain course. Three of the bossed courses are respectively 1 foot 9.5 inches, 2 feet, and 1 foot 8 inches in height. The longest stone is only 3 feet long. The drafts are of irregular widths, ranging from 2 inches to 6 inches. The maximum projection of any boss is 9 inches. The drafts are comb-picked. The wall is covered with a fine, smooth plaster which does not include the bosses, which project from it, giving a curious effect. This is probably later. The stones are not unlike the drafted masonry of the tower beyond the fosse, described in the *July Quarterly*, except that the latter are not comb-picked as to their drafts. Similar masonry may be observed in the "so-called Tower of Antonia," north side of the Via Dolorosa, in the Mahkamy (Council House) near Wilson's Arch, and in many other places

where old stones are re-used. Though the wall is here built on the scarp, the latter (except in one or two places) has not been cut exactly to accommodate the stones, irregularities in the scarp being rectified by the insertion of small stones.

Now that we have discussed (in tiresome but necessary detail) the five styles of masonry, two questions arise. First. Do these five styles represent different periods? Second. Can any of the styles be dated?

In answering the first question, I would call attention to the roughly-dressed course of stones which so often occurred between the rubble and the fine work above. Rough foundation work would be expected, but not of two styles. Moreover, at Tower I these stones are represented by three courses above the rubble and under the good masonry which occurs in a different line. The rubble and the rough courses may belong to the same period, but the rough courses and the superstructure are evidently of different periods. The difference between the superstructure of Tower I and the rest of the smooth work is so little that a difference of period need not be inferred. Accordingly, I think that up to and including Tower III we have two periods: the *first* represented by the roughly dressed stones, before the time of the lowest door-sill; the *second* represented by all the upper work—this second period being of long duration as it included three re-buildings of the gateway, as shown above.

I know that this view does not take into account the differences of dressing in the west face of Tower II, but I think that a plan will show that it is all of a piece. The long stroke-picking may be older than the comb-picking, but the former evidently continued to be used after the latter came in.

The description I have just given of Tower IV makes it clear that here we have a third period. Evidently the work is very different from the smooth masonry, and it differs from the rough-dressed courses in the clearness of the drafts, the projection of the bosses, and the regularity of the courses. However, I shall not quarrel with those who would relegate it to the general period earlier than the smooth work, though I keep to my own view. I have already said that the smooth work may represent a later line which, perhaps, branched off to Burj el Kebrit.

In considering the second question, "Can any of the styles be dated?" I would call attention to the fact that none of the stones have especial characteristics, and that no ornamentation was found. The masonry is all small. Smoothly-dressed stones have been used in all ages. The natural method is to make the length longer than the height. Rough bosses occur everywhere, from the huge substructure of the Temple to the wall of the house outside this hotel window, which was built the other day. I just stepped out on my balcony and found that three kinds of the comb-pick have been used on the wall of the room in which I write. And this style was in use long before the Christian era.

Again I cannot infer that because the masonry is small it is necessarily not Jewish. From the huge blocks of the Haram substructure and of the Tower of David it is assumed that the Jewish city wall should consist of the same blocks. But these were *especial points* where grander work might be expected. Even those who take the masonry in the Russian Church, east of the Holy Sepulchre, for part of the second wall, admit that it must have belonged to a tower in that wall. To be sure, the line of wall discovered by Dr. Merrill under this very room, consists of the huge blocks, but this line was near the main gate of the city. The wall at other points may have consisted of smaller masonry.

I am thus forced to admit that in the appearance of the stones there is little either for or against their antiquity. But there are other considerations. There is other proof that this wall is in the old Jewish line. Josephus gives, as the reason for the single line of wall at the south, the fact of the steepness of the valley. In other words, the wall occupied the extreme southern position possible, which is just the position of our wall. Had Josephus been silent I would still have identified our line with that of the Jewish Kings, and of Herod, for in their various epochs the city attained its maximum growth in the south, and if Hadrian's Wall occupied a different line, this would have been inside rather than outside of their line, contracting not enlarging the city. From the extensive Roman remains found by the Augustinians and myself outside the modern wall, I am inclined to believe that Hadrian's Wall ran on the old line, as far at least as the inferred tower. Indeed, I am led by Marina Sanuto's Map to believe that the Crusader's Wall also extended to this point, and if the smooth stones found fallen outside the wall in the cauliflower patch, and outside the wall beyond Tower IV, were once part of the wall, then it may be that Hadrian's Wall ran as far as the cemetery.

There is thus an immense range for the answering of our second question, with wide limits at any points between which these styles of masonry, so uncharacteristic, may be placed. A reasonable supposition seems to be that the smooth masonry represents the Roman and later periods, and the roughly dressed course with the work at Tower IV, earlier work. Perhaps further along the line we may hit upon something undoubtedly Jewish, for that Jewish the line is I have no doubt.

In describing one wall I have assumed that it started at the fosse, but a glance at the plan (October *Quarterly*) will show that it is in a direct continuation of Maudslay's line of scarp from the tower at the school to the tower outside the burial ground. The interruption of the fosse going north-east is due either to an inner wall or, as I believe, an inner fortress. Between the two just-mentioned towers, Conder (*Statement*, 1875, p. 81) found the indications that prove an intermediate tower. The distance between the first and second is 160 feet, between the second and third is 162 feet. Now the distance between this last tower and our Tower I is 165 feet, or practically the same as the other distances. The distance between Towers I-II and Towers II-III is

only 119 feet. Tower IV has been shown to differ from Towers I-III in masonry, but it resembles the tower outside the cemetery. Measurements taken, however, on from Tower I towards Tower IV, on the basis of 160 feet as the distance between supposed older towers, and of 40 feet as the breadth of such towers, do not bring it in the right place.

In closing, I may give a brief survey of our fortunes during this autumn season. After closing my last report I took a few days' holiday on Scopus, in the charming villa of my friend, Mr. Gray Hill, of Birkenhead, who can enjoy the glorious panorama from his Eastern home only during a brief spring season. On one side stretches Jerusalem, the old and the new. On the other side, far below, the plain of the Jordan, the densely blue Dead Sea, and the incomparable Mountains of Moab. It is the grandest view in the vicinity. But the place is a terrible one for winds. On Sunday, September 17th, it blew a hurricane. Our camp was also in an exposed spot, so I sent down my servant to visit the tents. He returned with a tale of destruction that I at once supposed to be exaggerated. I found, however, the next day that considerable damage to the tents had been done, and he took the opportunity furnished by moving the camp to a sheltered spot further along the line of wall that we were tracing, to put the camp in repair.

This new camping ground was on the edge of a cauliflower field. An interesting chapter could be written on the difference between the market price of vegetables and other crops and their archæological price. I speak with feeling, for I have in my time excavated in the midst of barley, beans, lentils, and cauliflower. The appropriate soil for each has become apparent, Amorite remains being favourable to barley, while beans seem to thrive on Greek *debris*. Cauliflower is unprejudicial and universal in its historical tastes. The profession of the excavator is a grand training for many occupations besides that of a market gardener. At the end of our work here I shall be fitted for a successful career as a land agent in Jerusalem. Even in these few months I have learned the boundaries between the lands of different proprietors over a large area. Where one finds a valuable cistern, and at once has two angry men down upon him, each claiming the cistern because part of it extends under his land, the line of demarcation becomes indelibly fixed in the memory. When one man gives you *carte-blanche* to dig away in a certain field, and then another man turns up to object, the fact of joint proprietorship, with the actual proportions of ownership, becomes clear.

In general our difficulties with landowners have been small. We parted great friends with the Sheikhs of Neby Da'ud, who were much pleased with the condition in which we left their land, and who invited Yusif to a friendly meal at the close of the work in their lands.

The health of the party has been, on the whole, excellent, though I found myself much fatigued in November, and took a few days in Beyrout. On my return the camp had been moved again to the point marked L on the Plan of Jerusalem, in the lands of the Augustinians, whose Superior, the Père Germer-Durand, thus became our kind host.

The spot is sheltered, and the tents suffered no damage during a rain of three days, which formed the only interruption to the work by the weather since the great wind. The view is charming, and at the tents I spend all my days, though I now consider it more prudent to sleep in town. We have hired a couple of rooms near Silwan for storing the plant. During the storm the gates of Bab Neby Daūd were blown down, and on the place against which the east door has stood open for so many years an inscription was found on a stone built into the wall. After all, Fortune is the great discoverer. Every inch of the modern wall has been examined for inscriptions, and here, just behind the door, this inscription has been waiting for the storm. How many antiquaries have passed a couple of feet away from it! It reads:—

(I)OVI . O . M . SARAPIDI
 PROSALVTEETVICTORIA
 IMP . NERVAETRAIAN . CAESARIS
 OPTVMEAVG . GERMANICIDACICI
 PARTHICIETPOPULIROMANI
 VEXILL . LEG . III CYR . FECIT.

It was partly covered with plaster, and while we were cleaning it the Père Germer-Durand passed along, and was the first to make it out. I shall have photographs and squeezes taken. It is an interesting addition to the very few Jerusalem Roman inscriptions. It is a votive tablet to Jove in behalf of the welfare and victory of the Emperor Trajan and the Roman people, erected by the Third Legion. It is interesting to learn that this legion, as well as the tenth, was here between the time of Titus and Hadrian.

His Excellency Ibrahim Pasha and the Government show a continued interest in the work. Our Commissioner, Ibrahim Effendi el Khaldi, continues devoted both to our interests and the interests of the Imperial Museum. It is pleasant to see his real enthusiasm in the archæological questions we are trying to settle. I am in correspondence with His Excellency Hamdy Bey, the General Director of the Imperial Museum at Constantinople. He has shown a desire to aid our work in every way and he is kind enough to ask me to give my opinion, from time to time, on reported discoveries in Bethlehem, &c. He has asked me to superintend a small excavation he desires to have made on the Mount of Olives, which I hope to undertake this week. We have every reason to be grateful for this friendly condition of things.

December 12th, 1894.