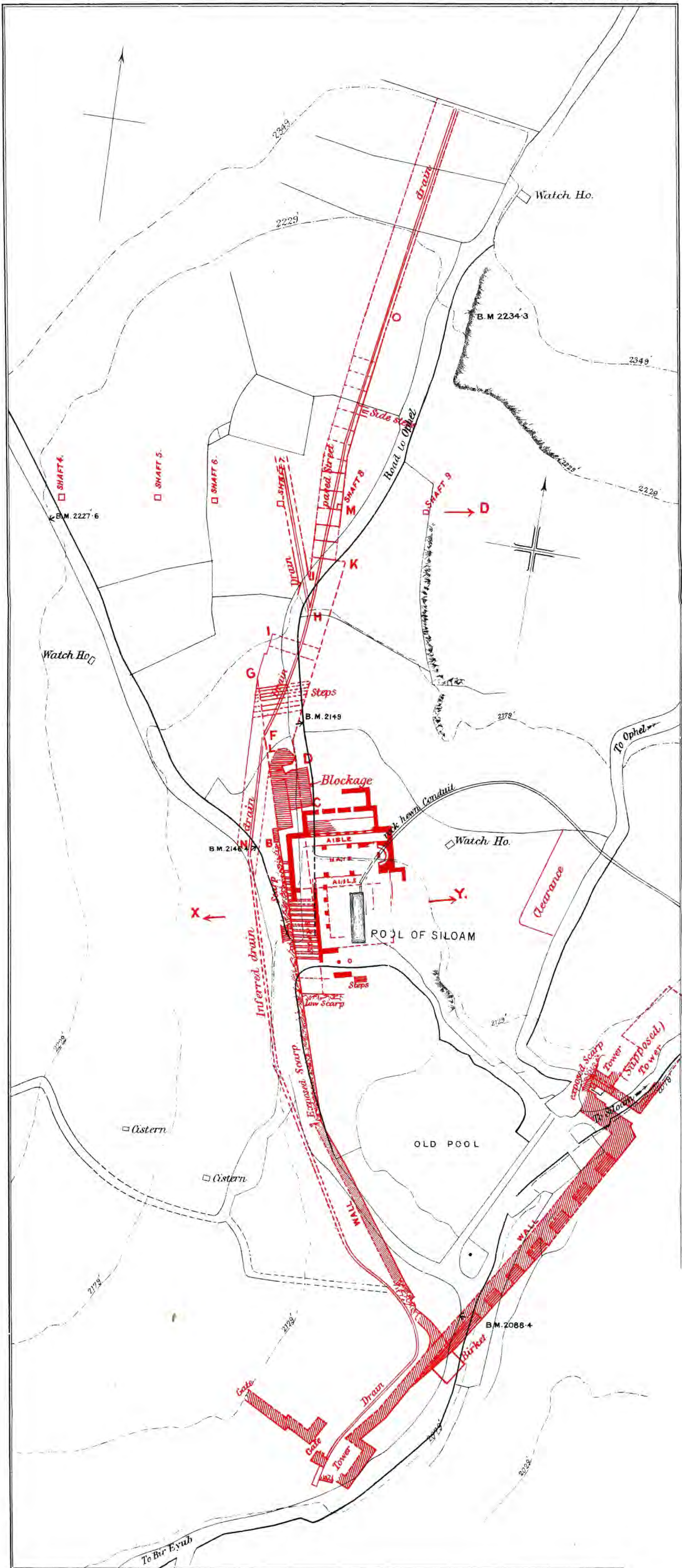


PLAN TO ILLUSTRATE DR. BLISS'S THIRTEENTH REPORT.  
The Detail in Black from the Enlarged Ordnance Survey Plan, the Excavations in red.

PALESTINE EXPLORATION FUND.





## THIRTEENTH REPORT ON THE EXCAVATIONS AT JERUSALEM.

By F. J. BLISS, Ph.D.

THE work of the present season has thrown much light on the paved street in the Tyropœon. We now understand its relation to the steps leading to the Pool of Siloam, as well as to the gate discovered to the south-west of the pool. The street was first struck at the point M, and followed south as far as the road, or open drain. At H a shaft was sunk in line, but only the concrete bed was found which had been observed further north to underlie the paving-stones. Breaking through this, we found the drain, which was followed north (under the street) and south (under the open drain) to the point F. Thus much has been described before.<sup>1</sup> Accordingly, this season we sunk a shaft at F, above the point where the drain had last been seen, and were pleased to come down upon the paving-stones of the street here *in situ*. Pushing up the street, we soon came to a flight of steps, with breadths of tread varying from 2 feet 6 inches to 4 feet. No kerb was found, but the steps all ended in the same line, which continued (still without kerb) to G, where the angle changed. The 6-inch step, occurring at regular intervals further north, had suggested that the street had not been used for chariots, and the series of steps just described confirms the view.

From G we followed along the altered line of angle for 20 feet, where a kerb 16 inches high, with a rounded corner, projects 22 inches beyond the former line of the street, and runs for 10 feet to another step, beyond which the kerb is again missing. This rounded corner may represent the junction of a side street coming from the west, but no pavement was found to extend in that direction. At I the paving-stones were missing, but we pushed our tunnel on in the same direction for some 33 feet, finding nothing but *debris* and a few paving-stones not *in situ*.

In the meantime we had sunk a shaft at J, above the small branch drain running from the north-west. This was found to run under a branch road, of similar construction to the main road, having a kerb on either side, but with a width of only 10 feet. This was traced north-west for 35 feet, where it was missed; but the drain was followed 80 feet further, where it was cut off by a later building. South of this branch we followed the western kerb of the main street to a point opposite our tunnel from I, and there made a connection between the two. It is evident that somewhere between I and J the street had been broadened towards the west, but the exact point we did not ascertain. Somewhere near the junction the main street had also been broadened towards the east, as the kerb was found at K, 7 feet east of the projection of the

<sup>1</sup> See *Quarterly Statement* for October, 1896, pp. 302, 303.

kerb running south from M. This gives the breadth at the junction as 50 feet.

From F south the work was very interesting. The pavement continued only for 25 feet, where it was ruined. The western kerb line was found for 10 feet at L, where it was ruined at either end. To the east of this point a difference of jointing was observed in the pavement, one set of joints following the angle of the kerb line at L, and the other following the angle of the line FG. This difference of jointing is the key to the situation. The drain runs with the first line, the second line points directly to the stairway leading to the Pool of Siloam. The drain was traced as far as N, where it points to the drain running to the gate south-west of the Old Pool. At N and for 70 feet back the covers of the drain are missing, hence the street above it is missing too, but the fact that for 450 feet we have proved this drain to run under the street hints strongly that they continued in connection.<sup>1</sup> The difference in the jointing clearly indicates a fork, hence the inference is a just one that the main road ran down the Tyropœon to the gate just mentioned, with a branch having as its terminus the Pool of Siloam.

When a ruined street, in places 50 feet wide, and buried under 20 feet of soil, has to be examined entirely by tunnels, some details must be necessarily left to reconstruction. The western line of kerb was certainly seen at L, and apparently at FG. Either the road was suddenly broadened to the west at F, or the real western limit ran from L to G (as indicated by dotted line on plan), the joint-line of the fork leading to the steps having been carried back to G.

On the plan it will be seen that a good part of the space between the fork of the road and the steps is occupied by the large blockage and the Byzantine Church, both, of course, later. On the longitudinal section it will be seen that between the level of the street at the fork F and the level of the top step of the stairway found leading to the Pool of Siloam there is a difference of 25 feet. Accordingly, we have reconstructed a flight of steps between the two points, in the space mainly occupied by the blockage and church. The top step of the stairway, actually seen, has a broader tread than any of the rest, hence it may be a landing between the two parts of the flight. From the account of Antoninus Martyr we gather that the street was still in use at the time of the church, which, however, is built over the steps leading to the pool. A new descent may have been formed from F to the atrium, the approach to the pool being then through the church, as described before. The main line running to the gate may still have been in use. The relation some distance beyond the fork between the levels of the drain, presumably under the main road, and the branch with steps leading to the pool, may be seen in Section XY, taken across the Tyropœon, where it seems to narrow to a neck at the point where the pool occurs.

<sup>1</sup> The fall in the street from N to the gate would be about 1 in 13, hardly more than the average fall ascertained further north.

In the October *Statement* we reported that the street had been traced 55 feet north from M along its eastern kerb. We have since then traced it uninterruptedly north, with a slight deviation of angle, to 125 feet to O. The characteristics are the same as before described. There is the same gradual incline, and at fairly regular intervals occur steps. At a point some 100 feet north of M a fine flight of steps projects some 5 feet beyond the kerb line. The steps are five in number and are turned around both angles. The landing step is only 5 feet 4 inches across. Hoping that it might lead to an interesting building we pushed back, but only to find that the house to which it belonged was quite ruined, only a sort of cellar remaining as seen in one corner. At O the street is ruined, but the drain has been traced for 220 feet further. Where the covers are missing the street is missing also, but at points where the covers are *in situ* we are making attempts to recover the street.

A section has been taken longitudinally through the street and drain from a point north of O to the fork, and then along the branch with steps leading to the Pool of Siloam. It will be seen that the street crosses the valley at an angle. At M it is well up the eastern slope as may be seen by a comparison with Section CD. At J it is nearer the bed. At B the branch leading to the pool has crossed over to the western slope, the main road which follows the drain at a higher level being here, of course, considerably higher up the western slope (compare Section XY). The relation between the drain and the bottom of the valley is seen at M in Section CD. The exact point where the drain runs across the bed of the valley was not ascertained, but taking into account the fall in the base of the drain, and the probable fall of the valley-bed, we assume that at that point there are about 35 feet of accumulation between the two. At J a shaft was sunk to the rock, but no signs of a more ancient roadway were found. From M north for some distance the rock forms the bed of the drain, on which the roadway is directly built.

In the third shaft north from O the drain-bed rests on *débris*, through which we have sunk some 10 feet, and at last date of writing rock has not yet been found. This suggests that the road may have crossed the valley twice. The drain is now heading to a point 90 feet east of the south-west corner of the Haram Enclosure, where Warren found the bed of the valley. A slight change of angle would bring it under Robinson's Arch.

In following the street especial attention was given to two questions. First: Did any branch road lead towards Ophel? Second: Did a contemporaneous wall run across it at any point? In order to determine the first question it was necessary to follow the eastern kerb. From M this was pursued north to O where it was ruined, no branch being found. From M it was followed south for 18 feet, when we pushed west to find the breadth and then followed the west kerb. At K the east kerb was found again (though ruined a few feet south of this), the street being broadened as described before. I wished this season to examine the

unexplored portion between K and M, but the open drain above made this impossible. At H and for 70 feet south the pavement of the eastern part of the roadway was found to be destroyed. Thus at the places where examination was possible it will be seen that no branch was found.

As to the second question, that of a contemporaneous wall crossing the line of street, it has been proved that no such wall exists between L and M. For between these points the pavement has been traced continuously (with one exception) showing no signs of wall or gate. The exception is the distance between I and a point some 20 feet south of J, where we got off the line. But our tunnel from I north, to a point where we connected it by a side tunnel with the one from J, ran across the line of the problematic wall, and proved our negative as conclusively as if we had run along the street itself.

Immediately to the south of L occurs the large blockage, clearly later than the street and the steps, as it forms a barrier between these two constructions, which must have been in connection. This blockage is not a city wall, but some apparently isolated building, as it has corners at B, C, and D. It is, of course, possible that this later blockage occupies the place once crossed by a city wall and gate, but the probability is slight, as we would scarcely expect a gate beyond the point where the road had forked. Moreover, the drain actually leads to a wall and gate. That the road followed the drain is made likely by the fact that in the portion of the latter traced near the gate surface inlet openings were found similar to those that opened down from the street.

So important seemed the search for a wall crossing the Tyropæon that we made this search double. For not only was the street followed continuously, but the bed rock was pursued by tunnels from the Pool of Siloam to a point somewhere south of M—a distance of more than 350 feet. In this search many remains of building were found. First came the blockage described before, which remains as much of a mystery as the tower immediately north of the aqueduct on the western hill. Many thin house walls were encountered, all on the rock, none of them built with lime. The stones of one were well squared and set, averaging 14 inches high, with picked centres and chisel-drafted margins. At one point was found a cistern set on the rock with masonry walls, having a double lining, the inner coat being made of lime and broken pottery and the outer of lime and ground pottery, a cement known to the Arabs as *Hamra*. At another point were found fallen several large paving-stones, 14 inches thick, pick-dressed.

To prove a negative is in some instances an endless process. For example, starting with a good clue we have traced a wall from the Protestant Cemetery, down the western hill, across the valley and up on to Ophel. This wall was quite ruined at several points, but as the line became clear, it was always picked up again. Supposing the search for it had been conducted by driving only one or two long tunnels north and south, and that these tunnels had happened to cross the line where

the wall had been completely ruined? In the case of the supposed wall crossing the Tyropœon on the rock we have proved that no city wall now crosses the path of the tunnel 350 feet long, driven north and south, but to affirm that no such wall exists at some point to the east and west of our tunnel would not be scientific. The only way to exhaust the possibilities would be by the tremendous task of driving a series of parallel tunnels, or of clearing out a large part of this deep valley!

That no such wall existed contemporaneously with the street and drain seems, however, to be pretty well proved. In absence of inscription or such positive data one does not wish to be dogmatic, but I think we have a pretty clear case that the City Wall in the time of the Romans existed in the line we have traced our wall. The Byzantine Church offers a definite starting point for the argument. This is built over the steps leading to the pool, and is consequently later than these. The steps are contemporary with the street, and the latter certainly appears to be of Roman work. This street almost certainly had its terminus in the wall which includes both pools of Siloam. The gate would thus have been in use during Roman times. Against this view we have certain interpretations of two passages of Josephus. First comes that in "Wars," V, 4, 2, where he speaks of the bending of the wall above the Fountain of Siloam. This is taken by some to mean a curve to the north of the pool which it excludes from the city. But our plan in the April *Quarterly* shows how, after crossing the Tyropœon outside the Old Pool, the wall turns up at Ophel where it overlooks the pool in a way that might well be called "a bend above Siloam." We have shown how the wall here has been repaired many times, suggesting that the original work must have been very early.

The second passage is "Wars," V, 9, 4, where Josephus in his speech refers to "Siloam, as well as all the other springs that were without the city," as being in the hands of the Romans at the time of the siege. Note the word "spring." May not this refer to the Virgin's Fountain, to which, as source of the pool, the name of Siloam may have been equally applied? This place was without the walls, and though the approach was probably concealed, yet the secret may have been betrayed to the Romans or discovered by them in some way. The very *raison d'être* of the Siloam tunnel seems to have been to bring the water within the limits of the city. It is worthy of note that while we have devoted immense labour to testing the contrary theory, yet all our discoveries have tended to support this view.

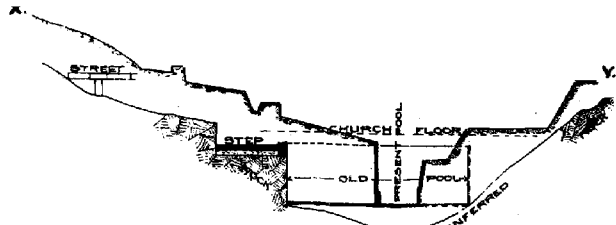
I must now describe Section CD, which comprises a line starting some 350 feet west of the Cœnaculum, running down to the bed of the Tyropœon, and up on to Ophel. This section was made with a double purpose. The first was to ascertain whether the ancient Upper City had a wall of its own, which this section might strike at right angles. Such a wall should finally have run along the cliff inside the modern city west of Robinson's Arch, the top of said cliff having a level of about 2,429. This study was begun some 175 feet west of the point actually shown in

the section. Between the point of starting and what I mark as Shaft I, the Augustinians had examined most of the ground to the rock. The results of this work (negative as far as concerns an ancient wall) were described on p. 304 of the *Quarterly* for 1896. I mentioned that the Augustinians had removed masses of masonry at O and J (see plan facing p. 208, 1896), but both are in line of the Crusading or Saracenic wall we have described before, and if not belonging to it probably represent later constructions. This late wall gave no signs of having been built on an old line. In Shaft I the rock was found at a depth of about 15 feet with a scarp descending for 10 feet more, hence the face is 25 feet below the surface which here has a contour level of 2,404. Hence the base of this scarp is some 50 feet below the contour 2,429, the level of the cliff west of Robinson's Arch on which the supposed wall was to run. Accordingly search for this wall further down the hill appeared to be useless.

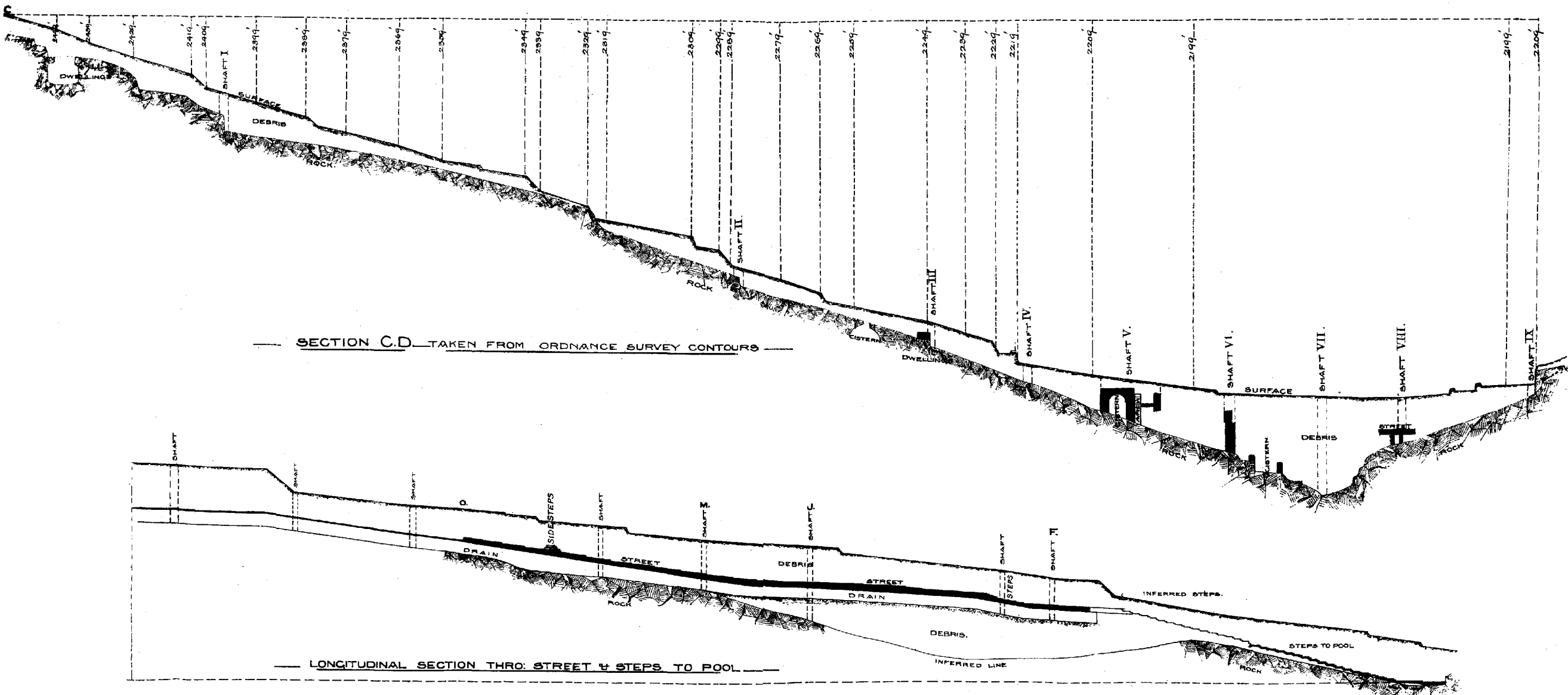
The second object of the section was to determine the rock contour of the Western Hill and of the Tyropœon Valley. Between Shafts I and II the rock crops out at one point, and a glance at the section will show that no intermediate shafts were necessary. Moreover, the rock is exposed at several points south of the section line. At Shaft II rock-hewn dwellings were found. In Shaft III appeared the wall and scarp (with rock-hewn dwellings) described on pp. 98-99 of the April *Quarterly*, 1897. Scattered all over the Western Hill are these dwellings, generally formed by a scarp from which chambers are cut, containing cupboards, lamp-niches, &c. In Shaft V was found a ruined circular archway, running north and south, resting on an older wall founded on the rock. Built up against this, to the west, is a vaulted cistern in perfect preservation, which must be later, as it blocks the entrance to the archway. Though so near the surface, its existence was unsuspected by the landowner, who now rejoices in a grand supply of water for his vegetable garden. The opening of the archway is 8 feet 4 inches, and the distance from the key of the arch to the floor is 10 feet. A good deal of excavation was done at this point, but with no satisfactory results, as the chamber to the east, into which the arch first appeared to open, turned out not to be bonded into it. In the angles formed by the walls of this chamber and the piers of the arch a water-conductor, formed of clay faucet pipes, runs down to a concrete channel in the floor. The pipe sections are 15 inches long, with a diameter of  $5\frac{1}{2}$  inches. They are made of finely-worked clay, the inside slightly furrowed.

In Shaft VI the top of a wall running north and south was found at a depth of 10 feet, resting on the rock, and standing for a height of 30 feet. The upper part is of later construction. The lower part is 6 feet 5 inches in thickness, but the stones are built on small, random rubble. A thin wall is bonded into it at right angles, proving that we have here no city wall. This is further proved by its small masonry, its direction, and, finally, its position almost at the bottom of the valley. Between Shafts VI and VIII the rock was seen almost the whole way, as tunnels were driven from the bottoms of the shafts. The gallery from

EXCAVATIONS IN TYROPŒAN VALLEY



SECTION X.Y.



SECTION C.D. TAKEN FROM ORDNANCE SURVEY CONTOURS

LONGITUDINAL SECTION THRO: STREET & STEPS TO POOL



Shaft VII to the east was driven up the rapidly-ascending cliff till the candles ceased to burn.

It may be interesting to note the remains found in Shaft VII, which hit on the very bed of the valley, in order to show how many periods were passed through as we sunk down 70 feet to the rock. For the first 24 feet we found only soil and ordinary *débris*. Then occurred one course of a roughly-built wall. At 30 feet appeared a covered drain  $1\frac{1}{2}$  feet square. From the level we infer that this was a feeder to the drain under the street to the east. Then down to 37 feet we passed through nothing but *débris*. Then to 46 feet we encountered fallen stones. Projecting from under these appeared an iron piping, similar to a gas-pipe. At 52 feet was the base of a wall standing to a height of six well-laid courses, forming the angle of a doorway; the stones were rough-picked. Below this, nothing but *débris* mixed with clay. On the natural-rock were 2 feet of white clay. The pottery, which showed Byzantine and Roman types at first, changed to Jewish as we descended.

In Shaft VIII we have the street. The foundations of the houses lining it to the east rest on the rock. Shaft IX was sunk along the exposed scarp, which descends below the surface line for a few feet, the rock then sloping naturally towards the west.

This section, which has taken so few words for its description, involved a great deal of labour. The results are by no means unimportant. Though not finding the desired wall enclosing the upper city, we have determined the form of the Western Hill and have found the true depth of the Tyropœon. To the making of this section we are indebted for striking the street which has turned out to be such an important clue to the topography. For the well-cut stones fallen across almost its entire length, as well as the walls actually *in situ* along the kerb, show how densely populated was this Tyropœon Valley. Signs of buildings found in all the other shafts, at various depths, confirm this view. It is generally assumed that the rock-hewn dwellings were the work of the original inhabitants; if that be so, we now see that the Western Hill was occupied at the earliest times.<sup>1</sup> Our work taken into connection with that of the Augustinians, has shown that the summit of the hill was occupied in Roman as well as in post-Crusading times, hence it is no wonder that the older wall, if one existed, should have entirely disappeared.

A careful examination is being made of the west slope of Ophel, from the junction between the Kedron and Tyropœon Valleys to a point somewhat north of the point where it is cut by Section CD. The object of this study is to ascertain whether there are any remains of an ancient wall along its top, and whether any rock-hewn steps descended from it into the Tyropœon. I had hoped that this examination would have been complete, so that it might be included in this report. The first

<sup>1</sup> See a paper by Dr. Schick on these rock dwellings, in the *Quarterly Statement* for 1890, pp. 12 *et seq.*

question has been answered in the negative, but the search for the steps has not yet been quite exhausted, hence a detailed description must be postponed.

It has been suggested that the apparently unnecessary curve in the Siloam Tunnel before it enters the pool was made in order to avoid the Tombs of the Kings. Accordingly we have made a large clearance to the Rock of Ophel in a field to the east of the pool, south of this curve. This clearance was also in the area also indicated by Nehemiah iii, 16, as being the sought-for site, when this passage is interpreted by the wall we have discovered crossing the valley and running up Ophel. The area excavated is about 100 feet by 36, and as the rock occurs at an average depth of 12 feet, the labour involved was great. The rock is nowhere in a natural condition, having been hewn to form cisterns and dwellings which have been in turn quarried for stones. Our hope was to find a pit entrance to the tombs, but the clearance has been completed this morning, and no such discovery has rewarded our toil. Of course the area excavated is but a small part of the possible area. However, in this excavation was found among the *débris* the first specimen of Hebrew writing we have come across in our excavations at Jerusalem. It is a Cornelian seal, half an inch long, having the general scarab form, rounded top and straight sides, but without the detailed markings. It is pierced longitudinally with a hole. Wax impressions have been sent to London. Père Lagrange, of the Dominicans, has kindly favoured me with a reading: יִשְׁמַעֵאל בְּרִיחַ. The name Ishmael is, of course, common. The name Bariach occurs in 1 Chron. 3, xxii. Père Lagrange somewhat cautiously suggests the third or fourth century B.C. as the date of this seal.

A few words in regard to our fortunes. I arrived in Jerusalem ready to begin the spring season on March 17th, but one of the severest storms of the season set in, preventing our beginning work till the 29th. Since that time we have had scarcely any rain and the weather has been unusually pleasant and cool. For the first six and a half weeks we were obliged to work without the help of an overseer as Yusif was recovering from an attack of typhoid, contracted in Damascus, and did not arrive till May 11th. As excavation is not a known trade like carpentry it did not seem worth while to train in a substitute.

We owe our thanks to Mr. William Reade, Blackie Scholar for the current year, who most kindly volunteered his help in watching the work. He has had some experience in like work in Athens. I must say that the workmen behaved most loyally, and took little or no advantage of the absence of a constant superintendent. We missed our foreman most when it came to negotiating with the landowners. I confess I am not up to the subtleties of these Fellahin. The rush of travellers had ceased before we began our work, but we have had many visitors, most of whom have enrolled themselves as subscribers. It was a great pleasure to conduct Dr. Chaplin around the works. We had an appoint-

ment with Canon Tristram, and the tunnels were swept if not garnished in his honour, but the very day before the hoped-for visit there occurred the sad accident to his leg and he was obliged to leave Jerusalem before he was recovered sufficiently to visit us.

Changes have taken place at the Pool of Siloam. The villagers have made a great clearance at the north-west corner of the Original Pool, and have erected a small mosque in the angle, though the flooring is much higher than that of the pool. They have removed the vault by which the aqueduct was approached so that the upper part of the wall of the Original Pool is now exposed for about 36 feet from the north-west corner, part of it being used as the wall of the mosque itself. The story of the erection of this mosque is a long and complicated one and some day I may tell it. How and why we repaired the modern pool I have mentioned before. On our return we found that it contained a depth of water quite sufficient for the lads to swim in, and the women are still filling their jars from the water flowing through the tunnel. Many are the blessings they shower upon us.

The greatest inconvenience in our work has been the open drain which pours an inky stream past our excavations. Our shaft was sunk some 20 feet away, but one day there suddenly bubbled up at the bottom a horrid black spring which compelled us to seek our clue from another point. The odious slime oozed in at another tunnel, which we had to saturate with diluted carbolic acid for our own safety, though the boys declared they preferred the other odours. I suppose we are gradually becoming inoculated, for this season both Mr. Dickie and myself have kept free from fever. However, we have taken the precaution to sleep in town.

JERUSALEM, *June 8th*, 1897.

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## NOTE ON THE SEAL FOUND ON OPHEL.

By Professor A. H. SAYCE.



THE seal reads :—

(1) לְיִשְׁמָעֵאל  
*l a ' m s h i l*

(2) בְּרִיָּהוּ  
*u h y r b*

“Belonging to Ishmael, Bar-yahu.”