

## THE ANCIENT HEBREW INSCRIPTION IN THE POOL OF SILOAM.

### I.

SINCE the publication of the last *Quarterly Statement* much new light has been thrown upon the ancient Hebrew inscription in the tunnel of Siloam. Dr. Guthe—who has succeeded in discovering remains of the old city wall which defended the entrance of the Tyropœon valley—has not only taken a gypsum cast of the inscription, but has also removed the deposit of lime which filled the characters, and has thus made their exact forms visible. He kindly allowed Lieutenants Conder and Mantell to take a squeeze of the inscription after the process of cleaning it had been completed, and Lieutenant Conder has forwarded to the Palestine Exploration Fund two tracings of the squeeze corrected by a careful comparison with the original text. I communicated a revised translation of the inscription based upon these tracings to the *Athenæum* of August 13th, and pointed out at the same time that the recovery of the exact forms of the letters obliges me to bring it down to a later period than the age of Solomon. Unfortunately the application of the acid, by means of which the lime was removed, seems to have injured some of the characters; at all events several of those which were clearly visible when I copied the text do not appear in the squeeze at all, and Mr. Piltner informs me that “Dr. Guthe’s repeated washings” have made others of them more indistinct than they were last February.\*

Since the appearance of my letter in the *Athenæum*, I have carefully examined Dr. Guthe’s cast at Berlin. An article on the inscription has also been published by Prof. Kautsch, in the last number of the “*Zeitschrift des deutschen Palaestina-Vereins*,” containing statements which it is matter of astonishment should have been permitted to appear in the responsible organ of a scientific Society. In his perhaps not unnatural annoyance at the appropriation by an Englishman of an important inscription which he had regarded as the special property of the German Association, he has forgotten the courtesy due to a sister Society which has been in the field for years before the German Palestine Association was founded, as well as the candour and fairness we might expect from a scholar. Personal controversy and international jealousies are always undesirable, more especially when they involve two societies which are working for a common end, and I should have taken no notice of Dr. Kautsch’s remarks were it not for two or three assertions which concern the credit of the Palestine Exploration Fund.

Dr. Kautsch seems particularly indignant at my having charged him with being in too great hurry to vindicate the German Palestine Association. But I must again bring the same charge against him. At any rate, in no other way can I explain, for instance, his interpretation of my statement as regards the money sent by the English Palestine Exploration Fund for lowering the water in the pool of Siloam. As the Secretary of

\* Lieut. Conder’s interesting letter published in this *Statement* makes the fact quite plain.

the Fund is prepared to prove, Dr. Chaplin was authorised to draw £25 for the purpose, that being the sum estimated as necessary to complete the work. Similarly Dr. Kautsch more than once sneers at me for finding a *birah* or "castle" in the inscription. If he had taken the trouble to read my article, he would have seen that I put a query after the translation, that I regarded it in my notes as more than doubtful, and that I finally withdrew it in the postscript in favour of Dr. Neubauer's conjecture! Dr. Kautsch further discovers that my copy of the inscription added next to nothing to his knowledge of it, and was but a very slight improvement upon the copy he had published in the preceding number of the German Journal. Other Semitic scholars will not be disposed to agree with him, as scarcely any Phœnician letters or Hebrew words can be recognised in his facsimile, and the only complete sentence Dr. Kautsch was able to give was derived from my letters in the *Athenæum* of February.

I need say no more on this distasteful subject, but will turn to the disputed readings as to which Dr. Kautsch and myself still differ. In line 5 he follows Mr. Shapira in reading *במאתים . ואלף*. Apart, however, from the grammatical difficulty already urged by Dr. Neubauer against Mr. Shapira (*Athenæum*, August 6th, p. 176), neither Lieut. Conder's squeeze nor the Berlin cast show any trace either of *ם* or *ך*. On the contrary both have a point in the place where Dr. Kautsch puts his *mém*. This was very evident on the Berlin cast, as M. Halévy and others agreed with me in seeing. Consequently we must read *מאתי*, for which I can find no other possible rendering than that which I have already suggested. There is certainly room for a *waw* before *אלף* in the break in the rock which occurs here, supposing this to have been subsequent to the engraving of the inscription, but I satisfied myself when on the spot that such was not the case, the break having existed before the letters were cut. The actual length of the tunnel, however, precludes Dr. Kautsch's reading, which would make it much longer than it really is.

In line 2, Dr. Kautsch reads *אמת* instead of *אמה*, and takes credit to himself for having doubted the philological "monster" *אמה*. But Lieut. Conder's tracings, as well as the cast, again testify against him. I see no sign of a *tau* in them, whereas they both have what looks like the lower part of a *hé*. At the time I copied the inscription, however, the whole *hé* was distinct, and in a matter of this kind, one, a large part of whose life has been passed in copying inscriptions in comparison with which the inscription of Siloam is as clear as daylight, may be allowed to speak with some confidence. Dr. Kautsch further disputes the *pé* I have read in the following word, and puts a doubtful *nán* in its place. The *pé*, nevertheless, was perfectly evident last February. Dr. Kautsch will not admit of any *הן* at the beginning of the inscription, apparently because it was copied by Mr. Pilter. I can assure him, however, that at least two letters exist here, though I was not able to make out their exact forms myself. His *ים* for *יום* "day" is ingenious, but not probable.

The translation which follows I have already given in the *Athenæum* of August 13th (p. 208) before the appearance of Dr. Kautsch's article. It has been obtained by a comparison of Lieut. Conder's squeezes with my own copy of the inscription.

- 1 הן . (ה)נקבה : וזה . היה . דבר . הנקבה . בעוד  
 (החצ)ב(ם . ה)עלו
- 2 הגרון . אש . אל . רעו . ובעוד . שלש . אמה . להפ.....(?)  
 מא . קל . אש ק
- 3 רא . אל . רעו . כי . הית . זו(?)דה . בצר . מימן . קמ(ו).....(?)א .  
 הכו . בים . ה
- 4 נקבה . הכו . החצבם . אש . לקרת . רעו . גרון . אל .  
 (ג)רון . וילכו
- 5 המים . מן . המצ . אל . הברכה . במאתי . אלף . אמה . ו...  
 6 ת . אמה . היה . גבה . בצר . על . ראש . החצב (זה)

(1) "Behold the excavation! Now this is the history of the tunnel. While the excavators were lifting up

(2) the pick, each towards the other; and while there were yet three cubits to be broken through . . . the voice of the one called

(3) to his neighbour, for there was an excess(?) in the rock on the right. They rose up . . . they struck on the west of the

(4) excavation, the excavators struck, each to meet the other, pick to pick. And there flowed

(5) the waters from their outlet to the Pool for a distance of a thousand cubits; and (three-fourths?)

(6) of a cubic was the height of the rock over the head of the excavation here."

The word **זדה** in line 3 seems to be connected with **זוד, זוד, זודן**, the radical meaning of which is rather "excess" than "boiling over." Lieut. Conder's tracings, however, give **זבה** instead of **זדה**, which may be related to **זוב** "to flow." We must notice the spelling **הית** for **היתה**. The defective **מימן** for **מימין** is parallel to **אש** for **איש**; Dr. Kautsch's **ים** for **ימן** is far from likely, and no point occurs after the *mém*. In line 2, **להפ** must be a hiphil' infinitive, perhaps from **פיץ**, though the meaning of the latter does not suit the context very well.

The squeeze shows that my copy was substantially correct, except in line 5, where I read **מוציא** instead of **מוצא**, and in line 6. Here, however, I find that my first copy gave the right reading, which I corrected erroneously in my second and third.

But as regards the *forms* of the letters, the removal of the line proves

that I had gone far astray. My copy represents them as they appeared when blurred and hidden by the deposit which had formed over them, and, as is now clear, had wholly metamorphosed their true shapes. It now possesses only an historic interest, as showing faithfully what the inscription looked like when it was first discovered. As I stated in the *Athenæum* (August 13th), it is no longer possible to assign it to so early a date as the age of Solomon. The looped *zayin* disappears, though the origin of the loop formed by the line is evident. The letter has two small tags at the right hand ends of its horizontal lines ( $\mathcal{I}$ ), which, by the way, are omitted in the facsimile published by Dr. Kautsch, and the calcareous deposit overflowed from the upper of these into the lower.

But while I must surrender the Solomonic date of the inscription, I find myself unable to accept Dr. Isaac Taylor's counter-hypothesis (see, however, his letter in the *Athenæum* of September 24th). We all agree that the age of an inscription must be determined by that of the most recent forms of the characters which it contains. But the question is what this age precisely is. Dr. Taylor's arguments, if strictly pressed, would make the inscription as late as the post-exilic period. We must remember, however, that the age of the shekels to which he appeals is doubtful, and furthermore that they are the product of an antiquarian revival which endeavoured to imitate faithfully an older style of writing. It is safer, therefore, to compare the inscribed seals. Nor can I admit that the three-barred *kheth* is later than the two-barred one, although the latter is found on the Moabite Stone. But I believe that the inscriptions of Mesha and of Siloam represent two different forms of the Phœnician alphabet, the one being north Canaanite, and the other south Canaanite. A comparison of the characters of the Siloam inscription, as they now lie before us, with the alphabets given by Euting, proves that the inscription must fall between the eighth and sixth centuries B.C. This being so, I see no reason for rejecting Dr. Neubauer's ingenious suggestion mentioned in my previous article (*Quarterly Statement* for July, p. 153), which would refer the excavation of the tunnel to the reign of Ahaz. The force of my argument from the fact that, while the Pool of Siloam is given specific names in the book of Nehemiah, it is called simply "the pool" in the Siloam inscription, remains undiminished.

A. H. SAYCE.

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## II.

<sup>1</sup>AIN KARIM, July 16th, 1881.

ON the 15th instant, Lieutenant Mantell and I again spent three hours in the narrow passage leading to the Pool of Siloam, endeavouring to render more certain the decipherment of the interesting text which has lately been made so much more legible by the use of hydrochloric acid in remov-

ing the lime deposit from the rock. We are indebted to the courtesy of Dr. Guthe for exceptional facilities, and I hope that our joint production may be of some value in the determination of the true translation.

Our method was to produce a *facsimile* founded on a careful squeeze, and distinguishing the sculptured strokes from natural cracks or dents, by pencilling the former on the squeeze itself. We then compared the whole again with the text, reading letter by letter, and throwing the light on each letter in turn from every side. I have had no opportunity of comparing the result with Dr. Guthe's copy; and Professor Sayce's pamphlet on the subject has not reached me. There may, however, be advantages in thus forming an entirely independent copy, and I should be glad to have my attention directed to any points in our tracing (of which I enclose two copies) which may appear doubtful or incorrect. If Professor Sayce would kindly indicate any portions of the inscription which require re-examination, we will take a further opportunity of visiting the spot. Meantime, although the plaster cast has been ordered, and will be sent to England as soon as possible, it seems to me that in many instances it will be only possible to distinguish intentional and natural lines and strokes by examination of the text itself.

The following remarks occurred to me in the course of our work, and are here noted as being possibly of some use to those who have not seen the inscription.

The text consists of six lines, occupying a space of 23 inches by  $7\frac{1}{2}$  inches, on the lower half of the tablet. The letters are from half-an-inch to three-quarters of an inch in height. The first and second lines are injured on the right, and a large deep crack extends all down the tablet near the left hand extremity, breaking the three upper lines, and partly mutilating the fourth. The first line is illegible to the left of this fissure, the surface being rough and covered with cracks. The fifth line does not extend the whole length of the longer lines, occupying only about 16 inches.

There appear to have been originally about 180 letters, of which 130 are now more or less clearly recoverable. The text is thus not quite as closely written as the famous Marseilles tablet. The letters are carefully formed, and some of the minor peculiarities, such as the small hooks at the right hand extremities of the two horizontal strokes of the *Zain*, are repeated in each repetition of the letter. The size of each letter is also much the same on each repetition; the vertical lines are broad, but not deep, the horizontal strokes are narrow, but very sharply cut. The *facsimile* first published gives quite a false impression of the regularity and finish of the execution of the inscription.

All the letters of the Aramaic alphabet are represented with exception apparently of the *Teth* and the *Samech*, and perhaps also of the *Gimel*. The *Aleph* seems to approach much more closely to the form found on the early Jewish coins than to that on the Moabite Stone. The *Vau* also appears to have three short strokes as on the coins. The peculiar form of the *Zain* is very carefully reproduced on each repetition. The *Cheth*, which occurs at least twice, seems to have a form intermediate between that on



the coins and that on the Moabite Stone. The *Mem* and the *Nun* are drawn with square strokes, and long tails. The *Ain* has invariably a pointed ending towards the right. The form of the *Tzadi* is very peculiar, and quite different to that on the Moabite Stone, as is also apparently the shape of the *Koph*.

The letters are quite sufficiently well formed to make these differences apparent, and they may, I should suppose, serve as indications of the date of the text.

I enclose what I hope may be found to be the correct transliteration of the letters most clearly recoverable, into square Hebrew forms. It seemed very doubtful whether any letter ever preceded the *Nun* in the first word נקבה. In the second line the reading אמה seems probably correct, on account of the space between this word and the next, but the last letter is unfortunately partly destroyed. The word following seems quite clearly to read לה. The last words of the third line appeared to us to read ביימה and not בירה. The top of the letter is, however, damaged, so that it was difficult to determine between מ and נ, though the tail was too distinct to allow of its being easily read as ר.

The fifth line is the most perfect and most easily decipherable of the whole text, but we were unable to determine the existence of a *Yod*, shown in Professor Sayce's first published letter, the word apparently reading מוציא as in the Bible (2 Chron. xxxii, 30). The *Tau* in the word במאתי is not easily seen, though traces appear to exist. In the sixth line the two last letters of the first word, which has, I believe, been read תאהה, are also very indistinct. We have recovered twenty letters in this line. I am not as yet aware whether any of these form additions to those copied by Professor Sayce.

A point on which a learned opinion seems necessary is the form of the *Vau* and the *Caph*. The word which occurs three times in lines Nos. 2, 3, 4 respectively, has for its last letter a form somewhat resembling the *Vau* of the coins. In the word ברכה occurring in the fifth line, the form of the *Caph* is different from that above noticed, as the letter has a tail below the line. The same form occurs twice in the fourth line, and seems closely to approach the *Caph* of the Moabite Stone. The straighter form which I have supposed to be the *Vau* occurs eleven times at least in the text, and in one case (מוציא in the fifth line) is rendered *Vau* by Professor Sayce, while the form which I have taken to be *Caph* occurs only four times, and is so rendered by Professor Sayce in the word ילכו in the fourth line. If the distinction is a correct one, the word thrice occurring should read רעוי. The difference was, however, probably not visible before the inscription had been cleaned. The occurrence of the *Vau* would naturally be more frequent than that of *Caph*, and the letters thus noticed are in most instances very clearly cut.

CLAUDE R. CONDER, *Lieut. R.E.*

## III.

5th August, 1881.

HAVING received on 1st instant, the *Quarterly Statement*, containing Professor Sayce's pamphlet on the inscription, and the notes of Dr. Isaac Taylor on the same, we revisited on the 4th instant the rock-cut channel, and again spent three hours in examining the text.

The result is that after several independent readings, we do not feel able to make any alteration in the copy which I sent home on the 19th ult., with the exception of one doubtful letter in the first line. It seems to us that this copy may be taken as representing all the letters clearly traceable in the present condition of the inscription; and although, when guided by Professor Sayce's copy, we were able in some cases to distinguish traces of other letters, we were not always able to make these agree entirely with the forms which he has given.

We are able only to add one letter to those given by Professor Sayce, namely a *Koph*, which appears pretty distinctly at the end of the second line. We still are obliged to omit 12 letters which are no longer traceable (to our eyes), and our copy differs in 18 letters from that of Professor Sayce, notably in two passages which occur in the third and the sixth lines. It must be remembered that I speak of the present condition of the text, as we had no opportunity of examining it very minutely before it was cleaned with acid. Dr. Guthe's copy, taken before this operation was performed, may however show letters not now traceable, although, as far as we can judge, the inscription has not been in any way damaged by the removal of the lime deposit.

In our recent visit we were obliged to stand each for an hour and a-half knee-deep in water; and we could not but admire the accuracy of Professor Sayce's results, obtained under conditions even more unfavourable than those of our last visit. The published copy is however not a *facsimile*, the spaces between the letters not being always the same as those given by the squeeze, and the form of many of the characters not being exactly that given by the text. The inscription occupies a space 26 inches long by 8 inches in height, the top being 14 inches from the upper surface of the tablet, and the bottom of the sixth line 5 inches above the lower border of the tablet, which is 27 inches square.

As regards the forms of the letters, I may add a few notes to those in my former communication.



The *Aleph* is written throughout in an uniform manner, and the shape does not appear to us to be exactly that given by Professor Sayce, which resembles the *Aleph* of the Moabite Stone, but rather the form of an inverted F with a spur—such as is found on Jewish coins.

The *Vau* appears also to be written throughout with a head formed by three strokes. We are unable to find a single instance in which the head of the letter remains, and in which only two strokes occur. In all the best preserved specimens the central stroke has at the end a cross stroke or *shoe*, which makes it specially conspicuous.



The *Zain*—as now seen very clearly, has also an uniform character, and is not formed as shown on Professor Sayce's copy, no curved line occurring to join the horizontal bars. The hooks at the right hand end of these latter I have already noticed in a former letter.



The *Tzadi* also does not seem to be formed as shown in Professor Sayce's copy. The letter is only found five times on the inscription, and in three cases it is imperfect. In the two perfect instances there is no loop joining the bars, but the latter resembles a W inverted with *shoes*.



These peculiarities have no doubt become clearer since the inscription was cleaned. The length of the stroke of the *Lamed*, and its inclined position, are also details which seem worthy of notice.

The form of the *Mem* is also an important consideration. I am not sure whether my copy sent home does not show the second *Mem* of the fifth line to have the zigzag form. I have however now carefully inspected this letter, which is well cut, and feel convinced that there is not a single instance of the zigzag form on the inscription. The cross strokes are very sharply cut, and although at a first glance the letters seem to have a W form for the head, yet when minutely examined they all prove to be cut with a bar and cross strokes. The *Nun* is also formed in a similar manner throughout.



We may now proceed to consider the differences which appear in the copy made from a squeeze by Lieutenant Mantell and myself, as compared with Professor Sayce's copy. The results, which are given below, are derived from four independent readings of the inscription, two taken by me, and two by Lieutenant Mantell. The position of the letters in our tracing recently sent home is obtained by means of the squeeze, and this serves in one or two instances to check the readings, and to determine the number of letters missing with tolerable certitude.

*First Line.*—At the commencement of the inscription the original surface of the rock is still preserved, though somewhat cracked. The first *Nun* is very imperfect, and we were quite unable to trace any distinct letters preceding it, though indications of what may have been a *He* might be conjectured to exist.

It is very doubtful whether one or two dots follow the word נקבה.

There are so many small holes in the stone that the dots between the words are in a great many cases very doubtful.

The *Daleth* in the word דבר is not very clear, but its form and size resemble those of the *Daleth* immediately beneath it in the second line, the horizontal stroke being very slightly curved.

The reading בעוד given by Professor Sayce appears to us to be still legible, but the third letter only is distinct, being a large and well formed *Vau*. The first and fourth letters seem to be unusually small.

The *Vau* at the end of the line has no head, and never apparently had one, the rock being quite smooth. We thought that we could distinguish traces of *Lamed* and *Ain* preceding it, as read by Professor Sayce, but their existence seems extremely problematical. There is room for two such letters, but to the right of them is a hole, and we were unable to trace the *Beth* shown by Professor Sayce immediately to the left of the great crack.

With these exceptions, the reading of the text in this line is remarkably clear, and (save as to the form of the letters) is the same as given by Professor Sayce. Our copy, however, supports Mr. Piltner's reading נקבה, and after carefully re-examining the first letter of this word, we felt sure that it could never have been a *Mem*.

*Second Line.*—The traces of a *He* will be found in our copy at the beginning of this line, and after minute examination, we were able to find the remains of a *Gimel* following it, and to distinguish a *Resh*, well formed, but much worn, to the left—thus confirming the reading דגרון. The last two letters, and the dot are quite clear.

After the word רען, there is a dot and a very clear *Vau*. Between this and the *Daleth* there is room for two large or for three smaller letters—as shown by Professor Sayce. The letters which he shows we were however unable to recognise, and the first two seemed to us most to approach בע, though so indistinct and confused by cracks as to be very doubtful. There would also seem to be the tail of a letter *Mem*, *Nun*, *Caph*, or *Pe* to the left of those two.

The *He* in the word *Amah* is, as I have previously noted, almost indistinguishable, from a crack in the rock. The next two letters are clear, but beyond these, where Professor Sayce shows פה, we are only able to trace what looks like the head of a *Vau*, and the loop of either a *Beth* or a *Resh* following it.

Beyond the great crack in this line, there is a *Koph* as shown by Professor Sayce, and to the right of this three strokes which seem most probably to have belonged to an *Aleph*. The *Lamed* after the *Koph* seems to us quite clear, as well as the *Shin* and the second *Koph* with a dot after it (this last letter is not given by Professor Sayce).

In all the distinct and several of the doubtful letters of this line, we are therefore able to confirm the readings of Professor Sayce.

*Third Line.*—The first *Aleph* should be preceded by a *Beth*, but there is now a small deep hole in the rock where this letter (marked as doubtful by Professor Sayce) would have occurred, and no trace of it is visible.

After the distinct word רעו we make a great difference from previous copies. It is to be hoped that our reading may render the translation of this puzzling passage easier. The words, according to us, should stand היה : ודה . רעו . כי . הית . The *Caph* and the *Yod* seem very clear. The double stop after the *Tau* is not however very certain. Lieutenant Mantell was inclined to think that an *Ain* might have existed here, which Professor Sayce also shows with a query. The *Dalet* in the last word of the group is also not quite certain. There is a horizontal stroke beneath it, but the rock is smooth and well preserved, and no trace of a vertical stroke exists. Nor would the shape of the *Beth* thus formed, if it existed, be the same as that of other *Beths* in the inscription.

Professor Sayce has divided the letters מימן further on in this line into two words by a dot, but we were unable to make certain of this division. The two letters which follow are much defaced, and the rock is covered with a network of small cracks in this part, which would make the cast almost entirely unintelligible. I was inclined to think that I could trace the *Koph* shown by Professor Sayce, and that it may have been followed by a *Beth*. Lieutenant Mantell would however give a *Resh* with part of the tail of another letter.

It will be for others to decide which reading suits the text best, and whether the words נקבה . מים can have originally been written here.

Beyond the great crack on the left, we read with Mr. Pilter ובימה ; and after a very close examination we could clearly determine that the last letter but one is not a *Nun*, but certainly a *Mem*, with the horizontal stroke and cross-bars. The only letter which we are unable to distinguish to the right of this word looks like the remains of an *Aleph*. There may have been a *Lamed* between this and the *Vau*, but we regard both these letters as highly problematical. There is room for a third letter before the *Vau*.

*Fourth Line.*—The second word is read חנני by Professor Sayce ; but the first letter of the word seems to us clearly to be a *He* and not a *Cheth*. There is a deep crack in the stone at this point, which, before the deposit was removed, would have given the left stroke of the *Cheth*, but as now seen, it appears to be clearly a natural and not a sculptured line. The surface of the stone being uninjured, we could ascertain that there had never been any “horn” on the left at the end of the bars of the *He*.

By the aid of the copy we are able to distinguish the *Ain* preceding the *Lamed* in the sentence גרון . על . גרון . The first *Zain* is however imperfect, and the second *Gimel* cannot be distinguished. The *Vau* succeeding these words is fairly clear, but only the middle stroke of the head can be seen, with its characteristic *shoe* on the end of the stroke. The final *Vau* at the end of the line we could not see clearly, but a trace of its vertical stroke may perhaps be recognised.

*Fifth Line.*—The second *Mem* has the same form as all the others in the text. We are quite unable to find any remains of the *Yod* given by Professor Sayce in מוצא, nor does there seem to be any space for it

between the *Tzadi* and the *Aleph*. The *Tau* in **במאתי** seems to us to be very doubtful, though strokes exist which may have belonged to such a letter. It should be noted that between this word and the next there is more space than is shown in Professor Sayce's copy. The dot is at some distance from the *Yod*, but even then there is fully room for another letter before the *Aleph*. The surface of the rock is however injured in this place. The last two letters of this line appear to us to read **ין**, though the last may be a *Mem*, as it is very imperfect and indistinct.

*Sixth Line.*—The third letter read *Cheth* by Professor Sayce is very indistinct, and may have been a *He*. The letters **יהיה** appear to us to be now quite distinct, and unmistakable, although Professor Sayce reads quite differently. The letters **גבה** also seem to us to be distinct, and the letter which follows seems more probably a *He* than a *Cheth*. The *Tzadi* which follows is imperfect, and the *Resh* or *Beth* next in order cannot be read as now seen. The final letter of the inscription should apparently be *Beth*, but the surface of the rock is here so damaged as to make it impossible to distinguish any of the three letters which Professor Sayce places after the last *Tzadi*, for there is a hole in the stone at this point.

Such is a summary of our observations, which have been pursued entirely without consideration of anything beyond the present appearance of the text. The main results which seem likely to be of some service are those which concern the forms of the letters, and the difficult readings of the third and sixth lines.

CLAUDE R. CONDER, *Lieut. R.E.*

#### IV.

I HAVE been favoured with a tracing of the squeeze of the Siloam inscription. In the last *Quarterly Statement* of the Palestine Exploration Fund I argued, in reply to Professor Sayce, that the Solomonic age of the inscription was on palæographic grounds quite untenable, and that it must be placed at least two centuries and a half later. In the *Athenæum* of August 13th, Professor Sayce surrenders his former opinion, and asks whether I still venture to uphold my own. In reply to this challenge I am bound to acknowledge that a date so early as the middle of the eighth century can no longer be maintained.

I argued for the earlier date on the ground that Professor Sayce's copy exhibited transitional forms of certain letters, notably of *aleph* and *mim*. In some instances the Moabite or ninth century forms were used, in others the sixth century or Eshmunazar forms. In the tracing all these earlier forms vanish. Both *aleph* and *mim* appear as we find them in the seventh century Phœnician inscription at Abu Simbel, while other letters, notably *koph* and *tsade*, approximate to sixth century forms. I cannot, therefore, now maintain that the inscription is earlier than the seventh century, nor do I think it can be later than the sixth. The closing years of the

Jewish monarchy might suit very well all the conditions of the problem, and it does not seem improbable that the conduit may have been constructed in preparation for one or other of the closing sieges, or actually during the last siege, after the aqueduct from Gihon had been cut. This would give 587 B.C. as the date of the inscription. See, however, Ecclesiasticus xlvi, 17; and 2 Chron. xxxii, 30.

ISAAC TAYLOR.

## V.

THE discovery of this inscription has excited no more attention and critical curiosity than it deserves. It speaks to us in the primitive Hebrew, the language of the past, and narrates a matter of the highest topographical interest, in the simplest forms of ancient orthography then in use. It will be our duty to interpret these forms, with all their defects, so as to have a correct conception of that little morsel of topographical history which the engraver of this inscription intended posterity should know and place on record. The following is the inscription:—

### TRANSLATION.

Behold the boring (tunnel). This is the history of the tunnel. While the excavators lifted the pick, each toward his neighbour, and while there were 3 cubits to the mouth (height of tunnel at the spot here described), the excavators came together (יחדו = *yichdo*, coming together) each unto his neighbour. They then measured (מדדו) and discovered (יערו) = *ya-arah*, discovered, became obvious) in the rock, that there was a *clearly-defined* (בן = *manah* in its ancient uncontracted form, meaning to point out, clearly define, and count out by reckoning up the measurements) *crookedness* (קמטין = *kumetoo*, wrinkled, crooked, corrugated, not going straight) in the direction (בירדו = *barah*, direction, leading; *beth* is a preposition in this word) of the boring (*nakavah*). The excavators then eagerly worked, and each *met* (likrath) his neighbour, pick to pick. The waters then advanced (*wy-yalachoo*) and flowed from the outlet towards the pool, from a distance of 1000 cubits from the *described boundary* (תארו) = *taah*, boundary pointed out and described) of the tunnel they excavated at the head of the excavation here.

#### I. INFERENCE.—*Two branches.*

We infer, as a radical conclusion, that two gangs of men were employed in the excavation, and that they started from two opposite ends of the tunnel, and met somewhere in the length. Now the question we are about to raise is one that has never yet been assumed, nor has it ever been suggested in any publications on the subject. It has always been

assumed that the entire aqueduct from Virgin's Fount to the Pool of Siloam was one continuous construction by two gangs of men. We hold that the two gangs of men were not employed on the whole, but only on the Siloam branch which runs south. And that the two gangs formed one whilst constructing the branch running west from the Fountain. We hold the theory that the Siloam branch alone is the excavation referred to in this inscription, and that the upper or head branch of the Fountain running west is not included in this narrative. A careful reading of its clauses, and the general context also, confirm this theory. The last clause especially cannot be interpreted otherwise.

Then, again, the word *רִאשִׁית*, in line 6, is not applied to the *lower end* of the tunnel, or to the Siloam Pool, it is applied to the other end of the tunnel where the excavators *began*; and this end the narrative calls the *raish*, *רִאשִׁית* = "head of the excavation here." The "head" of the Siloam branch is therefore meant by this word. Certainly the "lower end" must mean the tail end, and not the head of a tunnel or stream. If, therefore, the word be admitted, it must refer to the *head* of the Siloam branch of the aqueduct. This much then is certain without further discussion. In fact, Professor Sayce has himself noticed this inherent difficulty. He says: "I must confess that the meaning of 'lower part' would be more suitable to the Siloam end of the tunnel than to the other, to which it refers."

Now a careful reading of the last clause will prove, beyond a doubt, that the double gangs of excavators worked together first as one body, and as one gang, in excavating jointly the Virgin's Fount first, giving it a wider, more open, and spacial appearance as an entrance. And this was the *first* excavation of these men, and was regarded as the *head* of the tunnel. This was carried directly west about 231 feet, with a roof of 6 feet, roughly estimated by Captain Warren. This was the first excavation to which the narrator refers, when he says:

"The waters advanced and flowed from the outlet towards the pool, from a distance of 1,000 cubits from the boundary of the tunnel *they excavated at the head* of the excavation here."

The inference is fairly drawn, that a tunnel had previously been made at the *head or beginning* of the Siloam branch, by these same men; and that this tunnel had a given limit or boundary. Now this *first* tunnel could be none other than the Virgin's Fount branch, which runs almost due west 231 feet, and 6 feet high. And the *boundary* referred to would be this limit of 231 feet. The Siloam branch must, therefore, begin from this limit, and the 1,000 cubits must be counted from this boundary of the first tunnel. After cutting this first branch at the *head* of the excavation in Siloam, the gang of men divided themselves into two independent gangs for the greater convenience of carrying out the *débris* of the cutting. It being intended that the two gangs should meet at some intermediate point. Thus we have fairly established the fact, that the last clause of this inscription conclusively proves that the tunnel referred to is that Siloam branch of the aqueduct on which the two gangs of men only were

thus engaged to meet each other ; the inscription cannot refer to any other but the tunnel made by these men meeting together.

## II. INFERENCE.—*The Cubit.*

Metrologically the inscription seems to fix the length of the Hebrew cubit, or *ammah*. The tunnel is 1,708 feet in length, according to Captain Warren. If this be the length of 1,000 cubits intended by the narrator, then the cubit will be equal to 20·496 inches. But the place where these two gangs of men met was 3 cubits high = 5·124 feet, and there is no such place in the whole length of the tunnel, except at the long vault in the Virgin's Fount branch. Hence the cubit cannot be 20·496 inches.

Then, again, we have seen that the two gangs met in the Siloam branch somewhere. The heights have been given by Captain Warren. For the first 350 feet the height sloped down from 16 feet at the entrance to 4 feet 4 inches, width 2 feet. At 450 feet the height fell to 3 feet 9 inches. At 600 feet the height was 2 feet 6 inches. At 850 feet it was only 1 foot 10 inches, and at 900 feet it was reduced to 1 foot 4 inches high. Just at this point of the narrowest cutting the height suddenly rises to 4 feet 6 inches, which height continues for a length of 150 feet, when at a distance of 1,050 feet, the height is again reduced to 2 feet 6 inches, and at 1,100 feet it was again only 1 foot 10 inches. At 1,150 feet the height averaged 2 feet to 2 feet 6 inches ; at 1,450 feet the Siloam branch begins to turn towards the Virgin's Fount branch ; and at 1,477 to 1,480 feet, the height suddenly rises in the open vault of the Fount branch to 6 feet.

Thus it will be seen the highest point in this Siloam branch is a space of 150 feet in length, where it averages 4 feet 6 inches. Now, if there be any likely spot where the two gangs met it will be at this high cutting. At 850 to 900 feet the height sinks down from 1 foot 10 inches to 1 foot 4 inches, then suddenly rises into a cutting of 4 feet 6 inches. In like manner at the other end of this same Siloam branch, from this central space of 150 feet with a height of 4 feet 6 inches, the other end also tapers off and lowers down to 1 foot 10 inches. Now, does it not seem reasonable to suppose that when the men got to a point where they expected to meet each other, they would widen their tunnel in order that the chances of meeting each other would be greater? And that where we find this space of enlargement at the middle of an aqueduct, there is the spot where they endeavoured to meet? We think it reasonable to make this inference. Professionally, as a civil engineer, we think this a very reasonable supposition, especially where the engineers were not supposed to be equal to the sappers and miners of modern times.

Let us summarize a little. If the Virgin's Fount branch be almost due west for about 230 feet, to the end of the passage with 6 feet in height, the Siloam branch will be  $1,708 - 230 = 1,478$  feet in length. But in this case the 1,000 cubits will be = 1,478 feet, or 1·478 feet to a cubit, which is equal to 17·736 inches per cubit. Let us test this value also. The

narrator of the inscription says the gangs were working, when they met, with a tunnel equal to 3 cubits; but the greatest height of this Siloam branch is near the middle, and equal to 4 feet 6 inches = 18 inches to a cubit.

Now, in an article on the "Sacred Cubit—Test Cases," October, 1879, *Quarterly Statement*, we then suggested that the ancient cubit was 17.70 inches, or  $\sqrt{3.14159} \times 10 = 17.7245$ ; or the full cubit rod of what Ezekiel calls "a cubit and a handbreadth" (ch. x. 5), consisting of 7 handbreadths = 20.6786 inches. And it would now appear that this Siloam branch of 1,000 cubits was = 1477 feet in length, or 17.724 inches per cubit; whilst the height of the place of meeting of the excavators was 4 feet 6 inches = 3 cubits of this length, as the narrator declares in the inscription. Hence the cubit used by the engineer and workmen was 17.724 inches in length. When the prophet Ezekiel said:

"A cubit is a cubit and a handbreadth."—EZEK. xliii, 13.

"In his hand a measuring reed of 6 cubits, by the cubit and a handbreadth."—EZEK. xl, 5.

The *extra handbreadth* was simply a handle by which to hold the cubit rod whilst measuring: the cubit was 6 handbreadths only, but the cubit-rod was 7 handbreadths. Hence almost every cubit rod found has measured 20.6786 inches with its *extra* handbreadths, and this simple fact has led to the conception that a cubit was 7 handbreadths = 20.6786 inches. The Egyptian cubit-rods were constructed similarly; they were a cubit and a handbreadth in length = 20.6786 inches, or 17.724 inches to the cubit.

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## VI.

I HAVE been much interested in the paper contained in the *Quarterly Statement* upon "the ancient Hebrew inscription discovered at the pool of Siloam," and particularly so in the idea that the discovery may define the length of the Hebrew cubit. My object in writing to you is to point out that further examination of the tunnel may possibly lead to the discovery of exact and definite data from which the exact length of the cubit measure used in its construction may be mathematically demonstrated. In addition to the tablet (or smoothed portion of rock) upon which the inscription is cut, Mr. Sayce says he "came across small portions which had apparently been smoothed, as well as hollows or niches in the face of them all." I suppose these niches are of triangular shape like the one said to be opposite the tablet. If so, I am inclined to form a different theory as to the formation of the triangular nich opposite the tablet than that which Mr. Schick suggests. A theory

which will also account for the existence of the other niches which are found at intervals in the walls of the tunnel.

To construct a tunnel from both ends, the starting point must be definitely marked somewhere, and careful measurement must be made along the course of the tunnel as the excavation proceeds. Now if the niches occur at regular intervals along the tunnel, it is more reasonable to suppose they each mark off a measured length, so that instead of remeasuring the whole distance whenever the amount of work done is required to be known, a measurement from the last mark would be sufficient. If the niches are large enough to hold a lamp, a double purpose may have been served in their construction. The triangular point would serve to indicate distance, and the light would serve to light the tunnel at intervals, by which facility in the removal of materials would be gained. Now suppose this theory be correct, what more natural thing than to inscribe upon the wall of the tunnel the length thereof near the last niche? Probably the ornamental finish described by Mr. Sayce as found under the middle of the bottom line may be a mark intended to direct attention to the marks on the opposite side of the tunnel. The character of the finish is a remarkable one, however, being composed of three figures, two like the triangular niches in shape, and one just like a surveyor's mark.



It is even possible that the inscription and the finish are intended to mark the exact spot from which the thousand cubits are measured. If another inscription is discovered at the other end of the tunnel much uncertainty will be removed, but without such an inscription a careful measurement of the distance between the niches may lead to remarkable results. As to the upper part of the tablet upon which the inscription is found being without lettering, this may arise from an intention to engrave upon it the name of the king who ordered the tunnel to be cut, or some other record, an intention never carried out. Or it may have been so left to draw attention to the other tablet formations which Mr. Sayce describes.

H. SULLRY.

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## LIFE, HABITS, AND CUSTOMS OF THE FELLAHIN OF PALESTINE. By REV. F. A. KLEIN.

(From the "Zeitschrift" of the German Palestine Exploration Society.)

### CONTINUATION.\*

THE clothing of the Fellahin is extremely simple, but at the same time comfortable and suited to the climate. Their hair is worn quite short

\* The first part appeared in the *Quarterly Statement*, April, 1881.