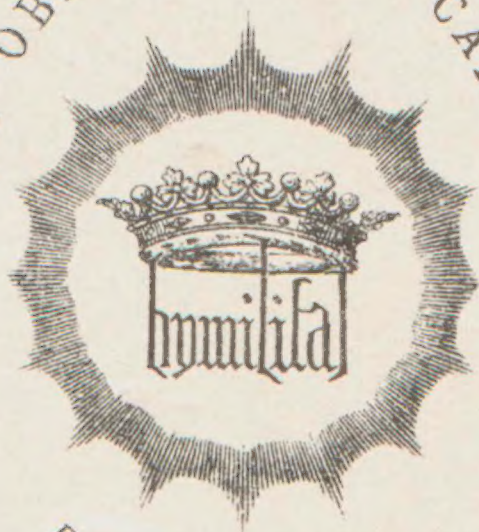


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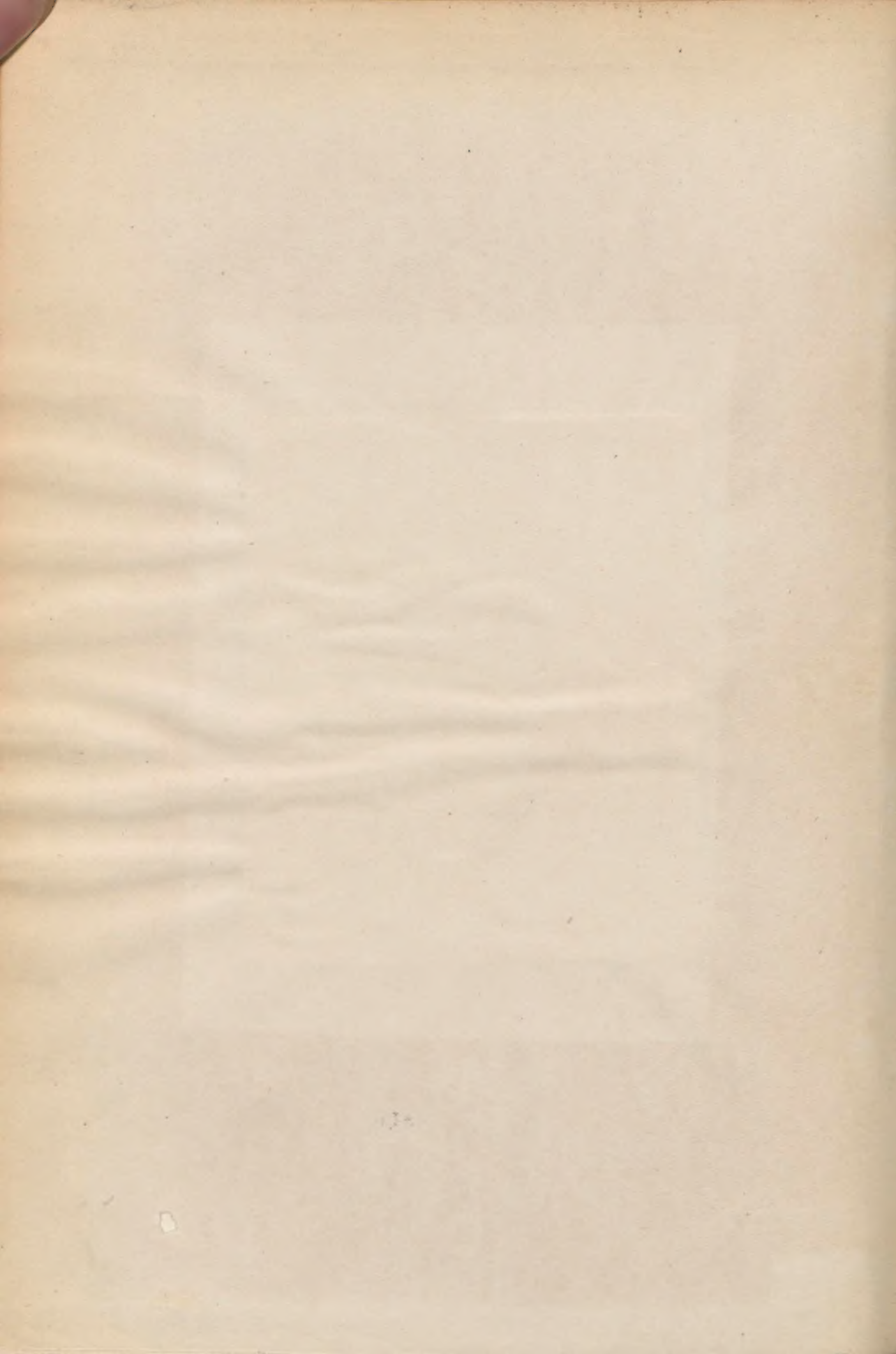
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Local Societies	..	..	..	..	37 14 0
Maps and Memoirs	..	..	..	..	115 11 10
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THE  
PALESTINE EXPLORATION FUND

NOTES AND NEWS.

An important change has been made in the executive branch of the Society. Mr. Walter Besant, who has for some time been practically an Honorary Secretary, has now formally resigned his post as Secretary and been elected by the Committee their Honorary Secretary. He finds that other work, which he cannot refuse or postpone, now so much presses upon him that he can no longer, as heretofore, give the time and attention necessary for the proper management of the affairs of the Fund. He proposes, however, for the present to continue his services as adviser, and can generally be found at the Society's offices in the afternoon by appointment.

Mr. George Armstrong, who has been connected with the Society almost continuously since the year 1871, has been appointed Assistant Secretary. Mr. Armstrong went out to Palestine in November, 1871, in order to commence the Survey. In 1875 he came home with Captain Conder, and remained at home drawing the maps and working out the observations while Col. Kitchener finished the Survey of Western Palestine. In 1881 he went out again with Captain Conder in order to survey the Eastern part of the country. Since his return he has been employed in the office as draughtsman. Most of the maps, drawings, and illustrations which have recently appeared are Mr. Armstrong's work. He will continue this part of his work. His appointment will give great satisfaction to the many friends of the Fund who have made his acquaintance.

The first practical effect of his appointment will be that all cheques and postal orders *should be now payable to his order*. They should also be crossed to Coutts and Co. A better plan, and one which is much more convenient for the Committee, as it ensures safety and saves clerical labour, is for every subscriber to fill up a form and give it to his banker, instructing him to pay on the 1st of January his annual subscription to the Society.

The year 1887 was marked by many important discoveries:—

- (1) First in importance, perhaps, must be placed Herr Schick's discovery of the Byzantine pavement (*see p. 17, infra*), which in the opinion of most cannot be anything other than the open space made and paved by Constantine in front of his group of churches. It is of less importance, but it is still interesting to ascertain that on this pavement stood the vaulted street, long lost, described in Crusading accounts. A fuller note on this discovery appears in this number.

Next must be mentioned the Sidon tombs. Professor Hayter Lewis has

given an account of these, which will be found in its place, together with Hamdi Bey's own paper on the subject, republished by permission of the Editor, from the *Revue Archeologique*. In this place we may only point out that no more valuable and interesting find of this kind has ever been made. For drawings and photographs of the tombs we must now wait until Hamdi Bey's promised work on the subject appears.

- (3) The district of Jaulan, the Golan of Manasseh, which has been surveyed, is 39 miles in length at its longest points and 18 in breadth. It comprises an area of 560 square miles. On the best map of Palestine there are found about 150 names. On Schumacher's there are 600, being the names of ruined towns, springs, ancient highways, remnants of oak forests, perennial streams, great fields of dolmens, with some remarkable volcanic features. The volcanic mountain, Tell Abu en Nida, rises to the height of 4,123 feet, and that called Tell Abu Yusef to the height of 3,375 feet. Herr Schumacher has drawn upwards of 152 plans and sketches of the country. He has collected a great variety of information on the manners and customs of the people. He has made special plans of the hot springs, &c., of Amatha, the Zaphon of Joshua xiii, 27, and of Kulat el Husn-Gamala, Susitha and Fik.

The district of Northern Ajlûn, also surveyed, contains 220 square miles, a population of 10,460, and shows on the map 334 names of places. There are in the Memoir detailed plans of 100 places—churches, theatres, vaults, mausoleums, temples, walls, columns, capitols, street pavements, sarcophagi, caves, cisterns, birkets, aqueducts, and ornamental work; there are collections of mason's marks, Greek inscriptions, drawings of dolmens and stone walls; and there are detailed plans of Umm Keis (Gadara) and Beit Ras (Capitolias).

The district contains about a thousand dolmens scattered over extensive fields; the fertility of the soil is inferior to that of the Hanan; the water supply is chiefly derived from cisterns; there are everywhere patches of forest, now chiefly oak, though the remains of oil presses show that there were previously olives. Herr Schumacher gives also an account of the inhabitants, who are chiefly Moslems.

- (4) A capital in white marble, found in the Temple area, and engraved for the January (1887) *Quarterly Statement*, has proved of the highest interest for architects. It is of Ionic-Byzantine style, and is said by Mr. P. Pullan, one of the best authorities on the subject, to be a work of the eighth or ninth century.
- (5) The Recovery of the ancient wall of Tiberias with its Acropolis. It is now proved that the Herodian city was no mean little Galilean village, but a noble city, with a great wall three miles in length, and a stately citadel.
- (6) The attempted reading of the Hittite Inscriptions by Captain Conder. There have been many attacks made upon his method, which is put forward by the Committee not as the true solution of the problem, but as Captain Conder's solution. He is himself confident that in the main his method will be adopted.
- (7) The publication by Mr. Guy le Strange of the catalogue of Arab writers who have spoken of the Dome of the Rock and the Church of the Holy Sepulchre. So many loose statements have been made as to what Arab historians have said upon this subject that it was most desirable to get

once for all an exact statement of what has been written. Had this been done before, a great deal of controversy might have been saved.

- (8) Herr Schick has discovered what he believes to be the remains of Herod's amphitheatre (*Quarterly Statement*, 1887, p. 161).
- (9) Herr Schumacher has sent home his Survey of Pella and the adjoining district. This will be printed in the same manner as the Survey of the Jaulan, and will be presented to subscribers. The memoir on this interesting place (where the Christians retreated on the outbreak of the troubles with the Romans) contains—(I.) a plan of the ruins, valley, &c., on the scale of six inches to the mile; (II.) about a dozen photographic views, with upwards of 40 plans and sketches; (III.) plans of the ruined tower Kh-Fahl, the Acropolis, two temples, the mausoleum, the cemetery covered with sarcophagi, certain curious caves, the great Basilica, a mound with other caves having stone doors, hot springs, and one Greek inscription. There are also 83 pages of description. We have also to thank Herr Schumacher for sending many notes of objects of interest observed by himself from time to time.

This is a very fair record of work for the year. As for 1888, it remains to be seen what will be done in the way of discovery. As regards publications, we have already announced that we intend to give to subscribers Schumacher's "Survey of the Jaulân" and his "Survey of Pella and Northern Ajlûn," so printed that they may be bound up separately in volume form uniform with Conder's "Tent Work."

We have received, but must keep over for the present, Dr. Post's narrative of his scientific expedition in the Trans-Jordanic region in the spring of the year 1886, with an account of the flora in the region round Damascus. This will be published immediately. Many of the plants are new.

Subscribers will please note that publications announced as nearly ready are often delayed by some cause for which the Secretary is not responsible. There has been, for instance, a great deal of delay about the Catalogue of Photographs. This is now ready. And about the List of Old Testament Names. This is also now ready. And about the New Testament Names. This list is in the printer's hands. And about the Index of the "Survey." This now wants only the Hebrew portion, which is daily expected.

The same remarks apply to the Pilgrim's Text Society. Two works are in the press and almost ready. We hope to be more expeditious in our productions this year.

The "Memoirs of Twenty-One Years' Work" is now in its third thousand. Subscribers are earnestly requested to use this book as a means of showing what the work has been, and what remains to be done. Copies are given to every subscriber who wishes to have one, and additional copies can be procured at a great reduction in the price, *by subscribers only*, by writing to the central office.

Will all the subscribers to the Palestine Fund remember—(1) that it helps the Committee very much if subscriptions are paid early in the year? (2) Next, that it saves a great deal of trouble if they are paid to Coutts & Co. direct by a Banker's order? and (3) That whenever they are due it saves a great deal of labour if they are paid without waiting for a reminder? The clerical staff of

the Society is very small, and it is greatly desired not to increase the management expenses, and not to overburden the work of the office.

The following books are now published uniform in size and appearance:—Conder's "Tent Work;" Conder's "Heth and Moab;" Schumacher's "Across the Jordan;" "The Memoirs of Twenty-One Years' Work;" Conder's "Syrian Stone Lore." Subscribers can have the whole set, together with Hall's "Mount Seir," for 25s. carriage free.

Mr. Armstrong has prepared a list of the photographs belonging to the Society arranged alphabetically according to those Bible names which are illustrated by views. This list is now ready. Those who wish for a copy may send in their names.

The long-promised List of Old Testament Names, with their identifications, is now ready.

The income of the Society, from September 13th to December 22nd, 1887, inclusive, was—from subscriptions and donations, £461 10s. 0d.; from all sources, £498 5s. 11d. The expenditure during the same period was £415 4s. 4d. On December 22nd the balance in the Banks was £315 12s. 10d.

Subscribers who do not receive the *Quarterly Statement* regularly, are asked to send a note to the Secretary. Great care is taken to forward each number to all who are entitled to receive it, but changes of address and other causes give rise occasionally to omissions.

While desiring to give every publicity to proposed identifications and other theories advanced by officers of the Fund and contributors to the pages of the *Quarterly Statement*, the Committee wish it to be distinctly understood that by publishing them in the *Quarterly Statement* they neither sanction nor adopt them.

The only authorised lecturers for the Society are—

- (1) Mr. George St. Clair, F.G.S., who has lately returned from his Eastern tour, and is giving Lectures for the Society in all parts of Great Britain. His subjects are—

- (1) *The Buried City of Jerusalem*, and General Exploration of the Holy Land. Numerous diagrams.
- (2) *Buried Cities of the East*. Numerous diagrams.
- (3) *Sight-seeing in Palestine*. Lantern views, where local help can be obtained.

Address: G. St. Clair, Bristol Road, Birmingham; or at the Office of the Fund.

- (2) The Rev. Henry Clary, Vicar of St. Thomas's, Portman Square. His lectures are on the following subjects:—

*The Survey of Western Palestine, as illustrating Bible History.*  
*Palestine East of the Jordan.*  
*The Jerusalem Excavations.*

*A Restoration of Ancient Jerusalem.* Illustrated by original photographs shown as "dissolving views."

- (3) The Rev. James King, Vicar of St. Mary's, Berwick. His subjects are as follows:—

*The Survey of Western Palestine.*  
*Jerusalem.*  
*The Hittites.*

*The Moabite Stone and other monuments.*

- (4) The Rev. James Neil, formerly Incumbent of Christ Church, Jerusalem.



## THE SARCOPHAGI OF SIDON.

THE chief portion of the following appeared in the "The Times" of December 8th, 1887 :—

During a recent visit to Constantinople I was enabled, by the kind introduction of friends, and by a letter from the keeper of the Greek and Roman antiquities at the British Museum, to obtain interviews with his Highness Edhem Pasha (late Grand Vizier), and with his Excellency Hamdi Bey. They received me with great kindness and courtesy, showed to me numerous and very beautiful photographs of the sarcophagi, and explained to me such details of the colouring, &c., as could not be there shown.

One of the interviews with Hamdi Bey was at the Museum, where some of the sarcophagi are placed, uncovered, and I could, therefore, see the style of carving of their decorations, which is in an absolutely perfect state.

Of the remainder, and of the sculpture and painting, I can judge only by the photographs and the descriptions given by his Excellency Hamdi Bey personally to myself, and which are to a large extent in his own words. They may form useful addenda to the very admirable account given in the last *Quarterly Statement*, and also to Hamdi Bey's own description in the last number of the "Revue Archéologique." I did not see these until after my return to London. The shaft was about 16 feet by 13 feet, and 50 feet deep to the floor of the tomb at its base. In chambers leading out of it, of which he gives plans and sections in the "Revue," were found the following :

Three Phœnician anthropoid sarcophagi, two of these being in white marble (one male and the other female), and the third in black marble (female).

Seven sarcophagi of Greek design of different epochs, carved out of Greek marble blocks.

Three of these are similar, and are simply in the form of pedestals, without any figure sculpture, but with beautifully moulded and enriched cornices and bases, which much resemble those of the sarcophagus in the British Museum brought from Crete, and numbered 44a. The covers are coped, and with pediments and acroteria. The fourth is of the peculiar tall Lycian form, surmounted by a curved roof with gables, of which we have two good examples in the British Museum. But, in place of the usual panels in and beneath the gables, the Sidon tomb has sphinxes and other sculptures, which are purely Greek. (It is to be noted that although the Lycian tombs at the British Museum have the usual panels, there are carved in them winged sphinxes of the well-known Greek form, some sitting and others recumbent.) On one of the long sides there are splendidly sculptured two cars with four horses each in full career. On the other side is a hunting scene. The fifth sarcophagus (not in the Lycian form) is equally well sculptured with Assyrian subjects.

The sixth represents a Greek Ionic temple in antis, but with three-

quarter columns only between the two antæ, and three-quarter columns to the sides. Between each two columns or antæ is a female figure showing signs of deep affliction. In all there are eighteen of these statues. The temple rests on a stylobate, having a finely moulded base and surbase, the dado being enriched with figures, partly sculptured and partly painted. The cover represents the roof of a temple, and in the pediment at each end is a fine group of sculpture. As a curious variation from the temple form, there is along each side, surmounting the cornice, a tablet, on which is carved a funeral procession. Such a decorative feature is not unusual in sarcophagi of late date, one such being in the British Museum, and many in the Louvre; but they are usually without any mouldings, and I can call to mind no example of such a feature surmounting the cymatium in any temple.

All the above sarcophagi show large remains of coloured decoration, and, as described to me, confirm Hittorff's theories as given in his work on Sicily.

The seventh sarcophagus is the grandest of all. It is out of one block of white marble, about 11 feet long, with a coped and pedimented cover, and having no columnar decoration, but with an enriched cornice and base, the panels between these, on each side, being filled with sculptures of marvellously fine execution. On two of the sides the subject is the chase; on the other two are represented combats between warriors both on horse and foot. One prominent figure reminded Hamdi Bey of that of Darius in the famous mosaic from Pompeii (and having seen this recently I quite agree with him), and certain characteristics on another of the principal figures induces him to assign it to Alexander.

In any case, there can scarcely be a doubt that the sculptures represent a battle between Greeks and Persians, and most probably between Darius and Alexander. The cover of this magnificent tomb is of the ordinary coped form, but is enriched with rows of heads on the eaves line and on the ridge—a very unusual style of finish, but which may be seen partly carried out on a small scale on one of the Greek sarcophagi figured in Sir C. Fellows's "Asia Minor." At each end of the eaves is a lion. This also reminds one of the lions' heads and fore paws sculptured in the roof of another Lycian tomb figured in the same work, and as may be seen in the tomb (No. 1) in the British Museum.

The architectural details of all these sarcophagi, so far as I can judge from those which I saw and from the photographs of the others, are of the Greek type of the best period, without a trace of Roman influence, and the sculpture appears to be of the highest class. It is altogether different from the bold style of the Pergamus sculpture, and much more nearly resembles the beautifully delicate carving of the Parthenon frieze, of which the horses, the figures, and the drapery of the Sidon monument strongly remind one.

Hamdi Bey thinks that it is probably by Lysippus or his school; but as to this only some one specially qualified by a study of ancient examples (and such a one no doubt he will consult) could give a definite opinion.

He will have to determine, to begin with, whether the sculpture is the product of an artist accustomed to work in marble, or whether it is not that of one accustomed to work in bronze. I can only venture to suggest, from certain details, that the latter is the case.

But it is not only by the sculpture that this monument has been adorned. It has been so, in the most careful and artistic way, with colouring, which was (and I trust still is) in a perfect state of preservation, and producing a charming effect, each of the different reds, purples, violets &c., being put on in various tints and gradations with great delicacy, gold being sparingly applied and with great judgment. The spears, &c., are of bronze. The flesh of the figures is not coloured.

To show the care which has been taken with this decoration, I may mention that the portions of marble which have been left untinted have been treated in three different ways—viz., (1) by the ordinary finish, (2) by being slightly roughened, and (3) by an exquisitely finished surface such as one finds in the finest Greek sculpture. The reader will, no doubt, have noticed the striking difference between the subjects of these sculptures and those on the grand Greco-Roman sarcophagi, which are so numerous in our Museum. I am fairly well acquainted with those in the Louvre and Vatican collections, and can say that, almost without exception, the sculptures on these (often beautiful) monuments represent mythological scenes. But the Lycian tombs, judging from the engravings in Sir C. Fellows's work, have often such realistic scenes of battle, hunting, and procession as are above described on the Sidon monuments.

As to the date of all these works, except the well-known Phœnician sarcophagus (to which I allude below), there is no guide whatever beyond what the sculptures tell. The absence of any inscription is not surprising, inasmuch as very few of the sculptured sarcophagi (chiefly Greco-Roman) left to us are inscribed, and I have Hamdi Bey's authority for saying that there is not a line, not a word, which could give a clue to the date, nor anything definite as to the persons for whom these splendidly adorned tombs were made.

How was it that a great sepulchre should have been hewn 50 feet deep in the solid rock, chambers carved out from it, these immense blocks of the finest marble brought from Greece, carved by the best Greek sculptors, painted (it would seem) by the best Greek artists, and then lowered into their resting-places in times of no great antiquity, and yet not a single record of any kind be left to give a clue to the names of those for whom such great works were done? Possibly in the careful study which Hamdi Bey is giving to the subject this question may receive an answer.

It will be months before the sarcophagi can be seen by any one, as it would be highly dangerous to expose them, however slightly, to the dust and damp of a Constantinople winter, as would be the case if they were uncovered before being placed in the building now being erected for their reception, and in which it is proposed to enclose them in glass cases as has been done with the Archaic statues recently found in the Acropolis at Athens. To preserve their colouring during their removal from Sidon

the greatest care had to be taken. The workmen were required to wear gloves, and the sculptures were protected by having cotton wool stuffed behind them most carefully and round them. This was done by Hamdi Bey himself, the whole then being covered by layer upon layer of soft material.

The last sarcophagus to which I shall allude is the famous one of the Priest and King Tabnite, the account of which occupies a large portion of Hamdi Bey's article in the last "Revue Archéologique." It is of black marble, the inscription on it showing it to have been the tomb of the son of Esmunazar, King of Sidon (I give the name as spelt on the tablet in the Louvre). But Tabnite's tomb differs in many important particulars from that of his father. Both are anthropoid, but Esmunazar's, of which we have a copy in the British Museum, shows the human form only in the head and shoulders, the lines of the sarcophagus being carved thence straight down in a tapering form to the raised tablet which marks the position of the feet. This is the case also with 10 out of the 11 other sarcophagi in the Louvre brought from Sidon, and in the only one (I believe) in the British Museum brought from the same site. But Tabnite's tomb has the flowing lines which may be seen in the numerous Egyptian anthropoid sarcophagi which are in the same collection and in our own Museum, and which give to some extent the outlines of the figures. One corner of this tomb has been cut off, thus giving it an irregular shape, and this part has been polished, and a band of Egyptian hieroglyphs, which passes round the block, is carved round this polished corner.

We can scarcely suppose that a king who could afford to have so splendid a tomb made for him would accept an imperfect block of marble for it, and it seems likely, therefore, that it was made originally for another person in ancient times in Egypt, and repaired and re-used at a later period for Tabnite.

The descriptions and drawings of this interesting tomb will form one of the most attractive chapters in the detailed and illustrated account of the Sidon monuments which Hamdi Bey is now preparing for publication. I should much liked to have given sketches of many of these sarcophagi, and I pointed out to his Excellency that by such rough memoranda the curiosity of the artistic world would be much more excited than by any description in writing, and that it would be a good preliminary announcement of his forthcoming book; but his particular wish, to which I, of course, yielded, is that he himself should be the first person to publish any drawings whatever of these splendid monuments; and considering the amount of care which he took in their preservation, every one will be glad to concede to him the full honour and credit of first conveying the description of them to the public in an authentic form. No doubt it would have been better to have retained them on their ancient site, if they could have been so retained with safety. But my experience in the East makes me confident that such a course would have resulted in the eventual destruction of these splendid monuments by Moslem fanatics and Arab dealers.

Athenæum Club.

T. HAYTER LEWIS.

ACCOUNT OF A ROYAL NECROPOLIS DISCOVERED  
AT SAIDA BY HAMDI BEY.

(*From the Revue Archéologique*).

I ARRIVED at Smyrna, on April 20th, 1887, with the object of taking part with my friend and colleague, Demosthenes Bey-Baltazzi, in the Archaeological Mission that had been entrusted to us. It was necessary that we should proceed to Saida to study a valuable necropolis recently discovered, and to draw up from its deep vaults the series of sarcophagi which are about to be described. On reaching Saida (April 30th) we immediately repaired to the ground; and I descended by means of a rope to the bottom of the large shaft which gave access to the large vaults containing the sarcophagi. This shaft, sunk through a thick layer of limestone, was 13 metres in depth. I visited the vaults, which were seven in number, in succession, and was struck by the value, beauty, and variety of the marble sarcophagi found therein. Out of the seventeen sarcophagi nine were covered with very beautiful many-coloured sculpture.

On the following day we made every effort to proceed with the work of extraction without hindrance; but this was anything but easy, the largest of them measuring 3m. 30 long and weighing nearly 15 tons.

With the friendly help of Sakeh Bey, Governor of Saida, who placed everything we required at our disposal, and the intelligent co-operation of Beshara-Effendi, chief engineer of the vilayet, a tunnel with a drop of 12 per cent. was bored, and all the sarcophagi were drawn out without any accident. The whole work occupied twenty-five days. This valuable necropolis is to be the subject of a detailed monograph. One part of the contents is on the eve of being sent to the Imperial Museum at Constantinople. A second necropolis was discovered by us. With the object of elucidating the description which I am about to make, I add to this memoir a plan and a general plan of both these monuments, which are placed together (see pp. 140 and 141).

At the north-west angle of the vault V of the first necropolis, and above the No. 10 sarcophagus (see plan), we perceived an irregular hole, which hardly admitted of the entrance of a man. As I wanted to know what it could be and where it might end, I had a ladder brought and was easily able to reach it, and to get halfway into it so that I could well examine the interior by the light of a lamp. I easily recognised a Phœnician tomb, which had been despoiled by the violators of the necropolis, by means of this little hole which they had made.

These greedy plunderers struck the walls of the vaults with an iron, and wherever they heard a hollow sound they divined the existence of a tomb or vault on the other side, which they proceeded forthwith to open. This one was entirely empty, but prior to our arrival at Saida some fragments of shapeless bronze had been found.

The question naturally presented itself as to which way the tomb had been dug and from whence the dead, whose bones I there saw, had been introduced. On entering I examined the upper part and was able to see and count five large slabs which closed it above and which were placed transversely on the tomb.

I communicated my observations to my friend Baltazzi-Bey, and we decided on May 22nd to open a shaft in such a way as to fall directly upon these slabs.

The next day, after having cleared away 1m. 20 of vegetable soil, we came upon limestone grit, then making our workmen proceed 2 metres further towards the north we continued to excavate, and on the 24th we could recognise the four walls of a large rectangular shaft bearing marks of a pick-axe.

The large sides from south to north measured 4 metres, the little sides 3m. 20; it must be mentioned that the walls of this well were hewn with care. It went down across a layer of very friable limestone grit, and was full of rubbish of the same sort, occasionally mixed with vegetable soil, the workmen found placed in a hollow in the side of the shaft a lamp in the form of a splayed and twisted patera, and resembling those which M. Renan had collected at Saida, and which, according to M. de Sauley, have been likewise met with in the tombs of the Kings at Jerusalem. At a depth of 5 metres we perceived the upper layers of a wall on the side looking north (see plan); evidently we had here a wall forming the entrance to a vault, and we were happy to find that it was perfectly intact.

0m. 50 lower, on the opposite wall, the upper part of a vault appeared, being precisely the one where the desecrated tomb was found. It was not walled, and we could see it was literally crammed with rubbish of the same nature as that which filled the well. The same day other lamps similar to the former one were found.

By May 28th we reached, at a depth of 7m. 50, the bottom of the well; here the layer of limestone grit (called in this country *ramle*) ended, and hard limestone appeared.

On the 29th, at an early hour, I descended into the shaft, accompanied by Beshara-Effendi, and some workmen; and I had a breach made in this intact wall by withdrawing some rows.

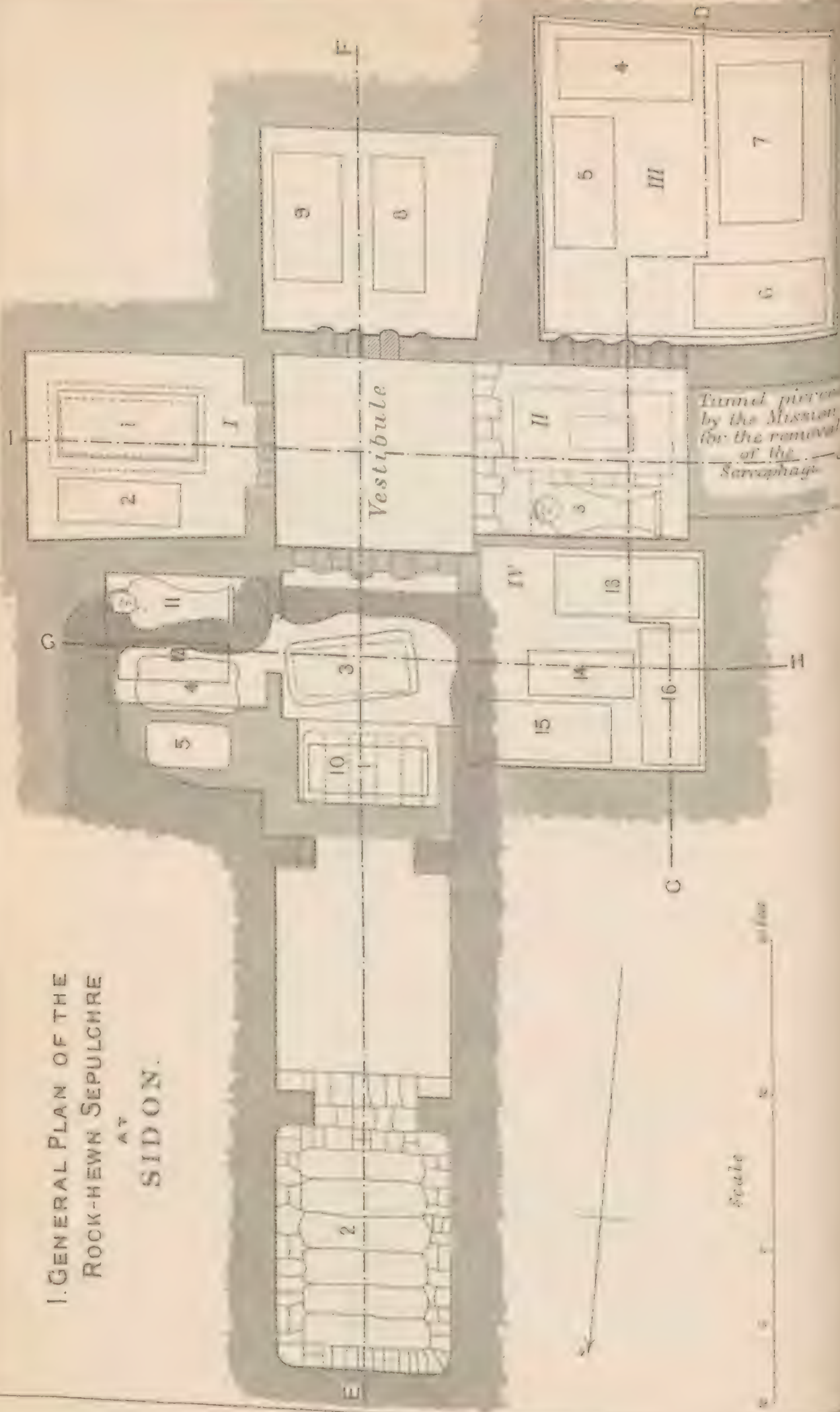
Then, by means of a magnesium lamp I saw that this vault did not contain any sarcophagus, that the ceiling was vaulted, and that it, as well as the walls, was faced with a thick plastering, which plastering had in great part fallen and completely covered the floor.

I also noticed on the walls of the vault large holes, which had been symmetrically bored at intervals, and which were intended for the reception of immense beams, by which, by means of ropes which were fastened on to them, sarcophagi or blocks of stone of immense size could be let down.

At the outset, therefore, I had reason to hope that once the vault was clear we should find slabs, and under the slabs some sarcophagi.



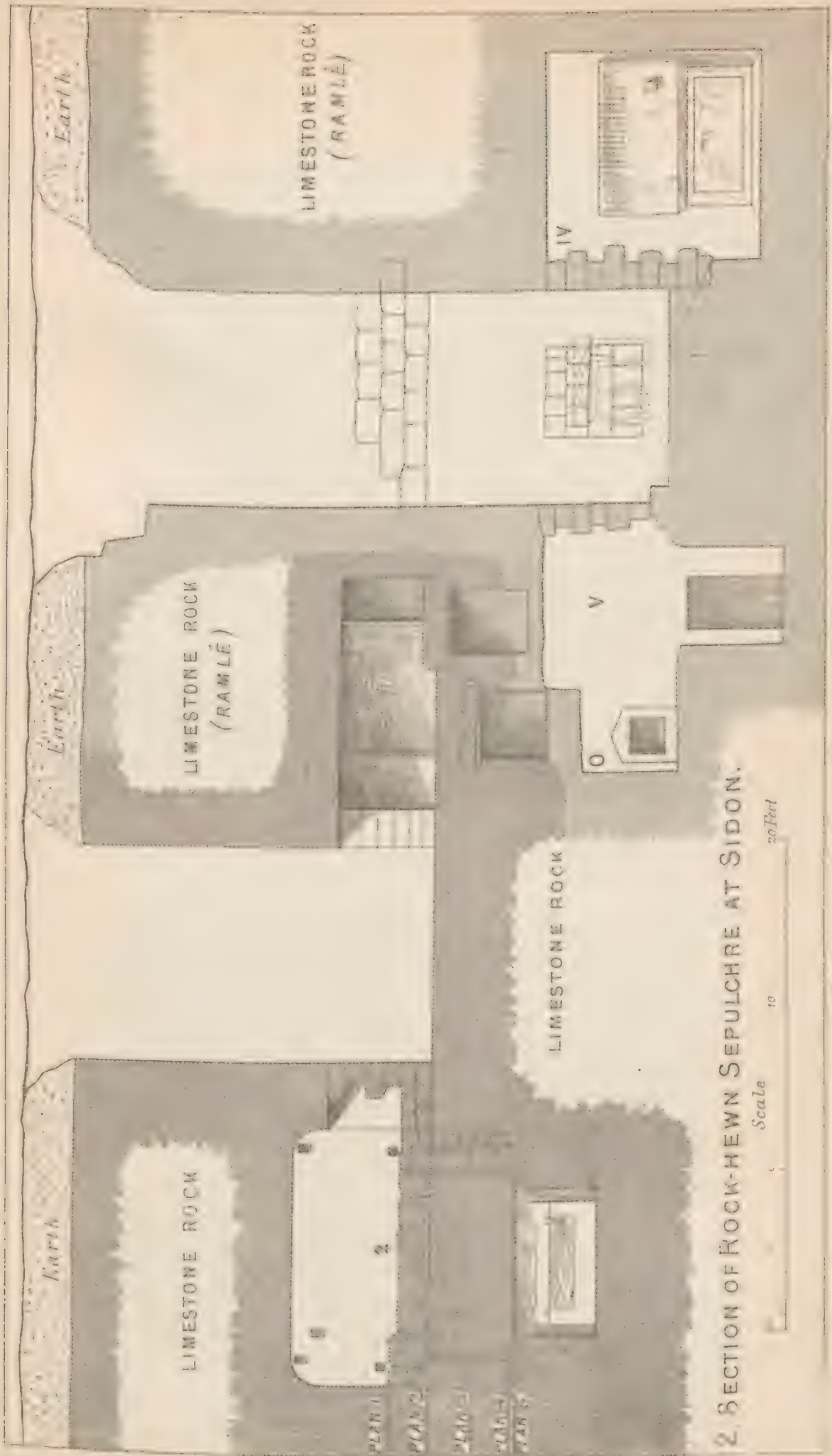
I. GENERAL PLAN OF THE  
 ROCK-HEWN SEPULCHRE  
 AT  
 SIDON.



*Tunnel pierced  
 by the Mission  
 for the removal  
 of the  
 Sarcophagi*

Scale  
 0 1 2 3 4 5 6 7 8 9 10  
 meters





2. SECTION OF ROCK-HEWN SEPULCHRE AT SIDON.

Scale 0 10 20 Feet



I had the door entirely freed from the wall, which blocked it up, and set the workmen to clear the vault.

The vault measured 4m. 60 by 3m. 40.

It was then that we discovered, in the north-west angle, two bronze candelabra and some terra cotta lamps, which were similar to the preceding ones, and which had been thrown down by the fall of the plastering off the walls and ceiling.

This plastering occasionally reached a thickness of 0m. 20, and was covered over with a thin gray-blue coating.

The candelabra are in good preservation, and have a fine patina; they are not of equal height. The largest measures 1m. 70, and the other 1m. 55. They are each composed of three parts, and were bound together by a stick running inside the stem; this wood has completely perished.

The vault being now clear of its incumbrances, I saw that it was paved with six immense blocks in a transverse direction of its length.

(Page 144, plan 1.)—These slabs were of limestone grit, and of different widths, varying from 0m. 50 to 0m. 80, with a length of 2m. 60.

The last at the further end of the vault was varied 0m. 18 above the others, and formed a sort of bench.

In removing the small hewn stones which edged the four sides, I ascertained that they were 0m. 65 thick, and themselves rested on other blocks placed in a reverse direction.

It took more than a day to break up and remove this first row of slabs.

In arrangement, the second row was quite different to the first. It consisted of an immense rectangular slab, placed in the middle of the vault, measuring 3m. 62 by 1m. 80, with a border of six slabs; these latter did not extend to the wall from which the plaster continued to fall (page 144, plan 2).

In removing the six blocks which served as a border, I was most astonished to find below a third layer, and to note that the middle piece reached still lower than this latter (page 144, plan 3).

The following day I had this third and last row of bordering removed, and the vault then contained nothing more than an immense rectangular monolith, with a length of 3m. 42, width of 1m. 70, and thickness of 1m. 60, cubing 9m. 30 (page 144, plan 4).

The monolith occupied the centre of the vault in its longitudinal direction.

It bore on the upper part of its thickness eight horse-shoe shaped grooves: three on each of its large sides, and one on the small one; the grooves were 0m. 12 in width, and of an equal depth. They had served to hold the cables used for letting down this colossal lid, at first to the bottom of the shaft, and afterwards into the vault.

It was perfectly obvious, from the grain of the stone, that this large block, as well as all the slabs surrounding it, had been brought from elsewhere.

The lid now being clear on every side, we had two lifting-jacks brought, and, setting them in action simultaneously, managed to lift it

on one side from Om. 10 to Om. 15, and it was only then that I was able to perceive, by means of a jet of magnesium light, that this monolith concealed a magnificent black marble sarcophagus, anthropoid in shape, admirably preserved and covered with inscriptions. It was only the day after the 30th of May that I began to have this monolith sliced off horizontally, so as to reduce two-thirds of its thickness, in order to be able to lift it and turn it up against the wall of the vault, so as to allow of the passage of the fine sarcophagus. This operation ended, we could finally examine at our leisure this almost unique and in every respect remarkable object.

Eleven lines of hieroglyphic writing in longitudinal lines covered the base of the lid, starting from the large collar, which ended in a large winged globe, having on its left and right other hieroglyphic signs. A Phœnician inscription, carefully engraved, covered in its turn the horizontal portion of the legs.<sup>1</sup> This inscription occupied seven and a half lines. As in the sarcophagus of Eshmunazar, the collar is fastened to the shoulders by two hawks' heads.

Here are the respective measurements of the lid :—

Length from head to foot	....	....	....	2m. 30
Width of shoulders	....	....	....	1m. 10
Width of feet	....	....	....	0m. 80
Thickness of feet	....	....	....	0m. 40
Length of hieroglyphic lines	....	....	....	0m. 70
Width	”	”	....	0m. 10
Length of Phœnician inscription	....	....	....	0m. 57

A circle of hieroglyphic writing runs outside the circumference of the sarcophagus, and is of the same form as that of the sarcophagus of Eshmunazar.

The trench in which this precious object was deposited is admirably hewn, peculiar care having been devoted to this result.

The edges and sides are remarkably clearly cut; a parallelepiped 2m. 60 by 1m. 20 by 1m. 50 deep. They had not forgotten to take the centre of each of the small sides by marking it with a red arrow before placing the sarcophagi exactly on the longitudinal axis. On the shoulder side it nearly touched the walls; and they had further filled in the small space that remained all round with small stones and a sort of mortar. All this rendered the opening and extraction of the sarcophagus very difficult. We, however, succeeded in doing this without any abrasion or mark resulting therefrom.

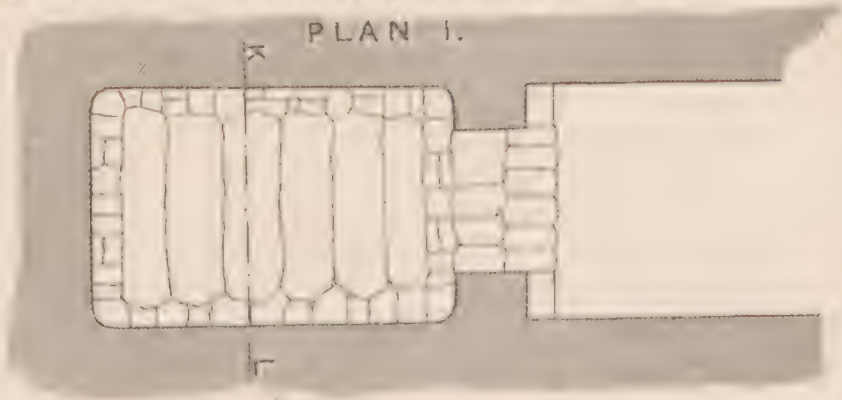
We first raised the lid, which we immediately placed in a temporary box until a passage should be prepared for it across the opposite vault and the violated tomb, No. 1 (p. 141), which the workmen were already clearing out.

The sarcophagus contained the body of a man in fairly good preserva-

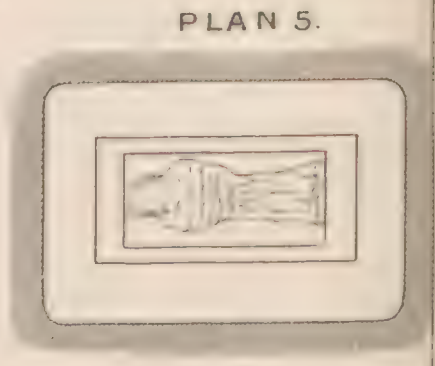
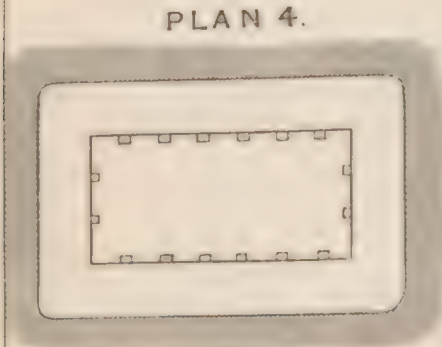
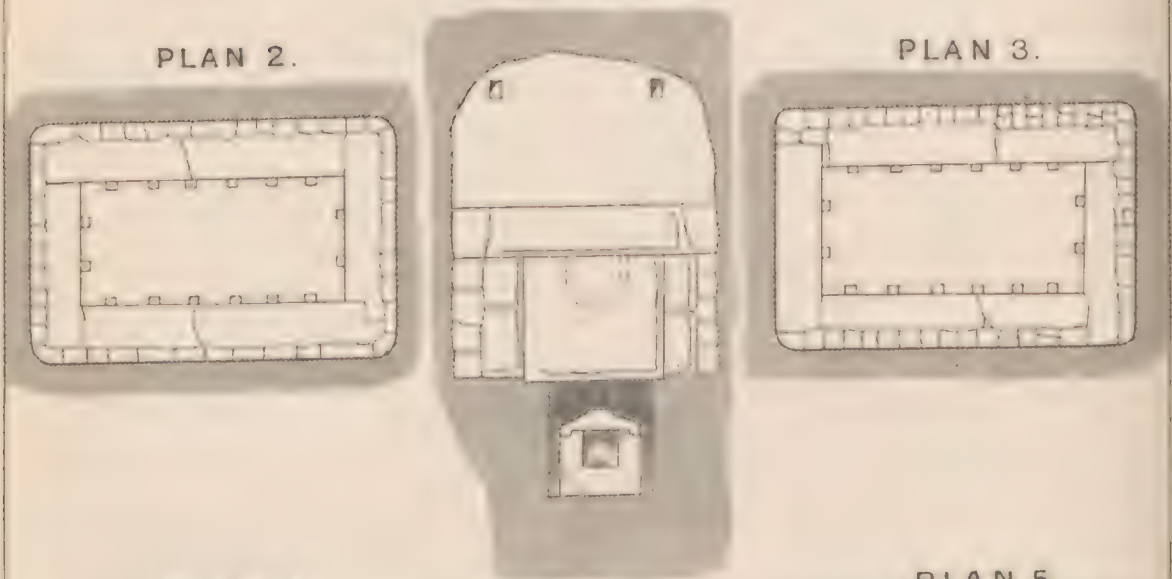
<sup>1</sup> This is the inscription whose translation was given in the last number of the *Quarterly Statement*.



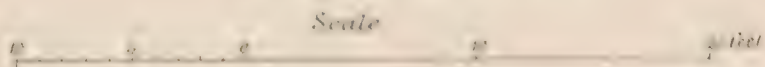
### 3. PLANS AND SECTION OF THE SEPULCHRE.



#### SECTION K.L.



GREAT STONE COVER  
OF THE  
SARCOPHAGUS



tion. In the entire upper part, emerging from a yellowish mud which filled the bottom of the sarcophagus, the flesh had disappeared. The breast was staved in; the sternum and the toes and fingers had disappeared. A fillet in very thin gold leaf, Om. 20 long, was on the left clavicle. I had the body brought out, stretched upon a plank, and carried outside. Murad Effendi, the municipal doctor at Saïda, charged himself with cleansing it, and putting it into a condition to allow of its being conveyed to Constantinople. All the muscles of the posterior parts are perfectly preserved, as well as the interior organs of the thorax and abdomen. The corpse was laid on a slightly concave plank, which occupied the bottom of the sarcophagus, and assumed its shape. This plank, in complete preservation, is of sycamore wood, and is 1m. 84 long, Om. 32 wide, on the side of the head, and Om. 21 on the side of the feet. It was furnished on every side with six silver rings, one of which still remains on the plank. They were fastened with nails, the points of which, after passing right through, were forced back by the blow of a hammer.

They fastened the corpse from head to foot firmly along this plank, upon which very distinct traces that the ropes have left are to be seen near the rings.

In another large anthropoid and perfectly preserved sarcophagus, which was given us to open, we likewise found the body extended on a plank of similar shape, but instead of rings they had been content to simply make holes with which to keep the body in place. I must mention that we found in a third sarcophagus, which was anthropoid and of white marble, the same kind of plank bearing bronze rings fixed in the same manner. In several other Phœnician tombs we collected from round the corpse, which was completely destroyed by the damp, numerous fragments of fillets. The Phœnicians, following in this the Egyptian fashion, endeavoured to mummify their dead, but they carried out this operation very badly.

In the tomb in question we did not find any trace of bandelets. It would appear, therefore, that the body was simply embalmed. I ought to add that in this sarcophagus we noticed the existence of a certain quantity of very fine sand, which we had likewise found in the three other anthropoid sarcophagi which had been given us to open previous to this.

Whilst we were occupying ourselves in extricating this fine royal sarcophagus from the deep trench in which it was found, several of our workmen had already cleared the vault from the south; we were then able to immediately open the second tomb. It was exceedingly badly constructed, and altogether similar to the one that the violators of the other necropolis had ravaged. In this tomb—the body as well as the plank to which it was attached had entirely disappeared—we collected the following objects:—

- 1 fillet of gold leaf.
- 1 gold collar.
- 2 gold bracelets.

- 2 gold symbolic eyes.
- 13 gold beads.
- 1 bracelet ornamented with coloured stones, with a catseye in the centre.
- 1 onyx cylinder, one end of which has a golden cage.
- 13 cornelian beads.
- 1 symbolic eye in cornelian.
- 7 small beads in blue enamel.
- 2 large silver *halkals*.
- 1 silver pin, the tip of which bears the head of a serpent.
- 1 smaller silver pin.
- 1 broken silver box.
- 12 slender silver rings.
- 1 bronze mirror, joined by wrists.
- Different ivory objects (broken).
- 7 bronze rings, belonging to the plank on which they had stretched and fastened the body.

The two tombs, No. 4 and No. 5 (p. 140), had neither slabs nor covers. The trenches were simply covered with earth and stones, nearly to the arch of the vault, and the entrance of this latter was walled. Except some fragments of bones which crumbled into dust directly they were touched, we found nothing. The southern vault, as well as the tombs which it contained, were of very defective workmanship. The piece of ground on which these tombs were discovered, is found in the plain below *Hilaleh*, between the aqueduct and the gardens. These latter, which border it, are called *Bostan-el-Mazara* (garden of the grottes). In fact, the entrance to two grottes running from west to east and uniting beneath our ground can be seen.

The ground is known by the name of *Ayaa*; this word is not Arabian. I was informed that the inhabitants of Meppo speak of a legendary Jewish queen who was called *Ayaa*.

Thus, a woman who gives herself airs in walking is said to walk like *Ayaa*.

I noticed here that in speaking Arabic they replace the letter *caph* by *ain*. Accordingly, instead of *Kaleh*, *Kassir*, *Karib*, they say *Aaleh*, *Aassir*, and *Aarib*. Assuming then the same corruption in the word *Ayaa*, we must seek to discover whether *Kayaa* has an Arabic signification. The ground plot of the necropolis is found 34 metres above the level of the sea, and is 1,250 metres distant from the same.

With the exception of tomb No. 1, which had been ravaged by the violators of the great necropolis, all the others had happily escaped the greed of the desecrators of the burial places. I must state, to my great regret, that these to-day are no less terrible than those of preceding ages. The same rapacity and vandalism continue their work of destruction, and, what is the more distressing, is that the so-called Europeans, representing certain great Powers at Saida, in their own interests and the most mer-



cenary spirit, head these devastations. We are assured that, not content with this clandestine speculation, they patronize a manufactory for articles of antiquity and false inscriptions, which is in a village in the outskirts of Saida. But in the interests of science, and so that archeological explorers should no longer be liable to be duped by them, I did not fail to take the most severe administrative measures in order that this deplorable state of things might be stopped. Finally, I must add that, in spite of Saida and other surrounding country having been ransacked, there still remain treasures to be discovered.

*Beirût, June 29th, 1887.*

## A PERSONAL EXPLANATION.

### I.

In the October number of the *Quarterly Statement*, p. 197, appears the following:—"Among other points he [Mr. Schick] shows that Dr. Merrill was misled when he stated that a rock scarp existed there."

This positive assertion of the Editor does me great injustice. In the first place I never stated that "a rock scarp existed there;" secondly, I have always maintained that *no rock scarp* existed there; thirdly, I can say, without boasting, that at the time I took more interest in this second-wall matter than any other European or foreigner. I was there every day, and frequently three or four times a day. I reported only what I saw and measured.

About 25 feet west from the line of the second wall there was a scarped wall from 10 to 15 feet in height; its top was 4 feet out of line with a vertical line drawn from the base of the same wall. What this had to do with the second wall I do not know. I never said that it had, or that it had not, anything to do with it. I mentioned and described simply a fact and never expressed any theory about it. The stones were faced like those of some large fine building. They were smaller than those in the scarped wall at the base of the present Tower of David. It may have been the wall of a building that in some general ruin inclined in towards the city, the bottom remaining in its original position. Among the ruins East of the Jordan I have seen walls perfectly intact but inclined as I have described this underground wall in Jerusalem to have been. Whatever may be the explanation of the existence of this wall at this point, I should describe it as "a scarped wall." Curiously enough, between this wall and the second wall there were no ruins, stones, &c., at least nothing that could be described as ruins, only *débris* of earth.

### II.

At the bottom of p. 219, Mr. Schick says:—"Dr. Merrill has, it appears, written what he was told by the masons;" and on p. 220, "the

chief mason . . . . told Dr. Merrill so, telling him what he wished to know."

If what is implied in the second of these two quotations were true, I should be unworthy to be reckoned among Palestine explorers. To do as therein implied would be to act in direct opposition to the rule that I have always conscientiously followed.

But as to the fact—I never had any conversation with any of the masons. The person whom Mr. Schick calls the "architect" (p. 220) I call, or have called, the "engineer;" with him I conversed. We never mentioned "scarp"—scarped rock or scarped wall. He made a plan of the building for me, on which is located the line of the second wall as he found it. This does not correspond with the line of the wall as it appears on Mr. Schick's plan (p. 217). The society to whom I gave a copy of that plan ought, for the sake of the truth, to publish it.

On Mr. Schick's plan there is an elbow in the eastern wall of the new building just opposite the street which runs in an easterly direction, and he makes the line of the second wall to run east and entirely free of that elbow. On the contrary, I am certain that the wall ran on the inside, that is, the western side of that elbow. It is so on the engineer's plan. Furthermore, the second wall actually appeared on the street leading north-west from that elbow, and at a point some yards distant from it. On Mr. Schick's plan it stops short of that elbow. Again, when workmen were excavating the street in front of Frutiger's bank for the purpose of laying a pavement, they were suddenly stopped, because they found that they had run into a large cistern, which belonged to that house occupied by the Sisters of Joseph. They were compelled, after a protest had been made, to fill up the street again. Considering how narrow that street is, and how wide the foundations of the second wall are, the wall, running where Mr. Schick places it, would interfere with the cistern; in other words, the second wall and the cistern cannot both occupy that space. Mr. Schick has made the north end of the wall run too far east, and, moreover, he has not shown so much length of wall as actually appeared, proved by my own measurements. These facts I am confident of. I am showing no discourtesy to Mr. Schick when I state what he himself freely admits, namely, that he has a theory to maintain, which is that the Holy Sepulchre is the true site of Calvary, and in order to save this theory the second wall must bend eastward from the elbow referred to. Personally I have no theory to maintain, and all that I am insisting on at present is that the remains of the second wall should be located where I actually saw them, and that as much length of it should be represented as actually appeared.

SELAH MERRILL.

Andover, Mass., U.S.A.

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EDITOR'S NOTE.—The plan referred to has been sent back to Dr. Merrill, and if he still desires it shall be published in the April *Quarterly Statement*.

## THE BYZANTINE PAVEMENT NEAR THE CHURCH OF THE HOLY SEPULCHRE.

JERUSALEM, *October*, 1887.

I. IN the year 1860, amongst the many Christians killed at Damascus and the Lebanon, there were a number of Roman Catholics and their churches, convents, and houses destroyed by the fanatical Moslems. France, the Western Power protecting the Christians, especially those of the Roman Catholic creed, demanded compensation. It was proposed by the Ottoman Port to give in exchange the so-called "Khankeh" at Jerusalem to the Catholics, for those destroyed at Damascus by the Moslems.

An order, therefore, came to Jerusalem, that the Governor should not only report at full length on the matter, but should also send exact drawings, or a model of the subject, and it came to pass, that I had to make this requested Model of the Khankeh, and its connection with the Church of the Holy Sepulchre. It was done in wood, and on the scale of  $\frac{1}{100}$ , and when finished, a document had to be drawn up signed by all the Patriarchs interested in the question, to state that the model was an exact one. In different colours the different proprietorships of all the parts were marked. The model, by the high assembly summoned before the Governor, was found correct, but, as only one side of the Church of the Holy Sepulchre was represented by it, that in which the Roman Catholics have their share, the Greek Patriarch found that the model was too much in favour of this party, and demanded that the other side, belonging to the Greeks, should also be shown. In consequence, a new and larger model was made, comprehending the whole church, and all connections round about it, with the streets. It was a long and difficult work, lasting for many months, but came out to the satisfaction of all. In the course of this work, I had to examine and measure every thing and in detail, and so I found that south-east of the Church there was an ancient "sook" or market, walled up and no more in use, except four larger rooms (vaults) used by Moslems as a turnery—ending (at the west) by a flight of steps leading up to their roofs and further on to the Greek Convent St. Abraham, to an upper story. A few years ago all this was broken down, and a new large building erected on the place.

East of this, there was a piece of ground, embraced by walls and filled up with earth of about 15 feet high, above the street. This was bought by the Russian Government in the year 1862. A larger piece north of it they had already bought in the year 1859, covered with a high hill of earth which became removed and found that there are ruins underneath, and left so for many years. But a visit of the Grand Duke Sergius had the effect that this place (the first one bought) was cleared and searched through very thoroughly, and as I had been requested to oversee the work and report

upon it I have done so. Report and drawings were then published in Russian, but afterwards also in the German language by the German Palestine Exploration Society ("Zeitschrift," 1885, page 245, and following).

The first mentioned piece of land, bought in 1862, was left at this time untouched, the reason for which I do not know. But during this year, 1887, it has been cleared, and ruins have been found, of which I sent a plan to the English Palestine Exploration Fund at the end of March.

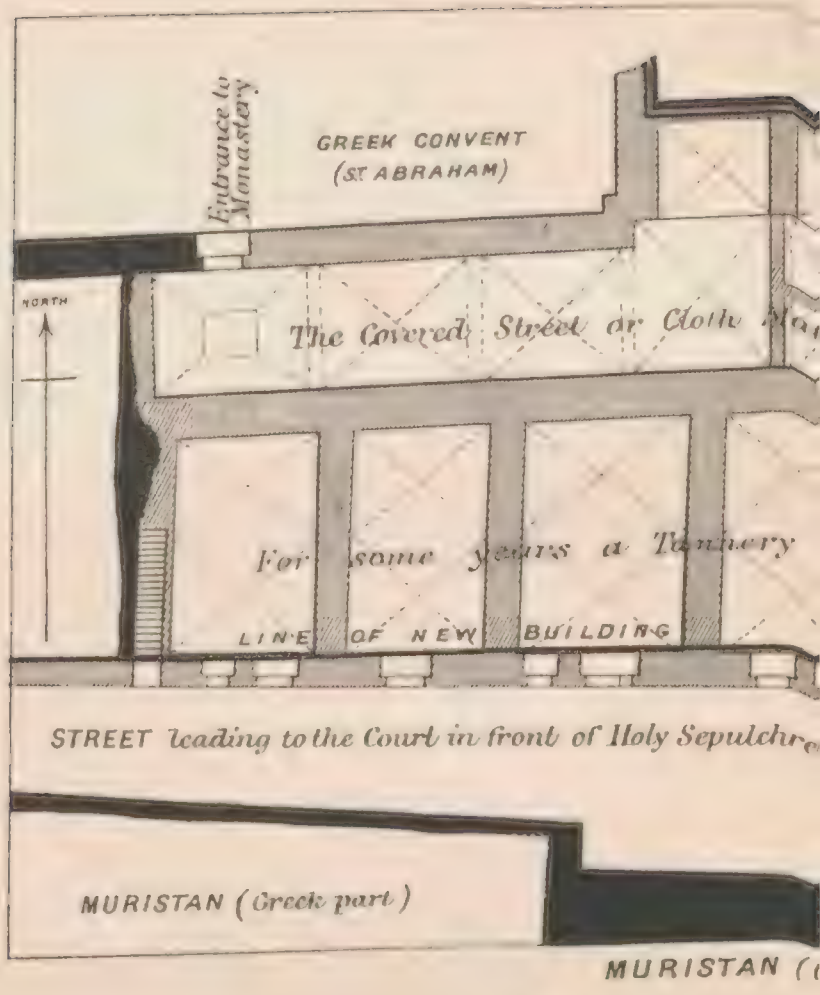
Recently these ruins were demolished and cleared away, in order to erect a new building of some ecclesiastical sort. By this clearing a pavement was found of very large, flat, and about 1-foot thick stones, just as it was found in the more northern part, extending on the same level southwards as far as the ruins which were done away, forming one court, all in the same level, about 2,470 feet above the Mediterranean. It was also found that the ruins were in ancient times shops, and that their walls, without any foundations, simply built on the mentioned pavement. So the pavement is not only much older than these shops were, but proves to have been here once a larger free and open place—a "forum," as I have it stated in my report to St. Petersburg, 1883; but I was at that time not aware that it extended so far south.

On looking at the last removed ruins, and the plans of them, comparing the latter with the plan of the shut-up market I mentioned above, and putting both together on an equal scale I found there had been two market-streets, and I thought it to be my duty to preserve the knowledge of them: I therefore send a copy to the Palestine Exploration Fund, and have to remark that what is dark shaded no more exists (on the larger western part a new building of three stories high stands, and on the eastern a smaller one; also a new building will be erected as already stated, according to the painted line in red ink).

As the ruins were not yet cleared, but full of earth, when the Greeks made their new building some parts of it came to stand over the property of the Russians below; and then, when the ruins were removed, the two upper stories of the Greek building at this place were in danger of tumbling down, so they propped it up with very large beams, and the Russians have left the arch on which the whole corner rests until the new masonry shall have been made up, and then no danger of falling will exist.

II. According to the "Assise de Jerusalem," by Count Beugnot (II., p. 531 ff.), there were in the thirteenth century several Market-streets in Jerusalem, viz., the "three streets" crossing the David's-street, and the one of Herbs going southward to the street of Mount Zion and the gate of Zion; another one to the arch of Judas. But besides these three, it is said that, when one is coming towards them from the north, one comes to the arched market (la Rue Couverte) on the right hand, going to the Monastery (not the Church) of the Holy Sepulchre. In this street the Syrians sold cloth.



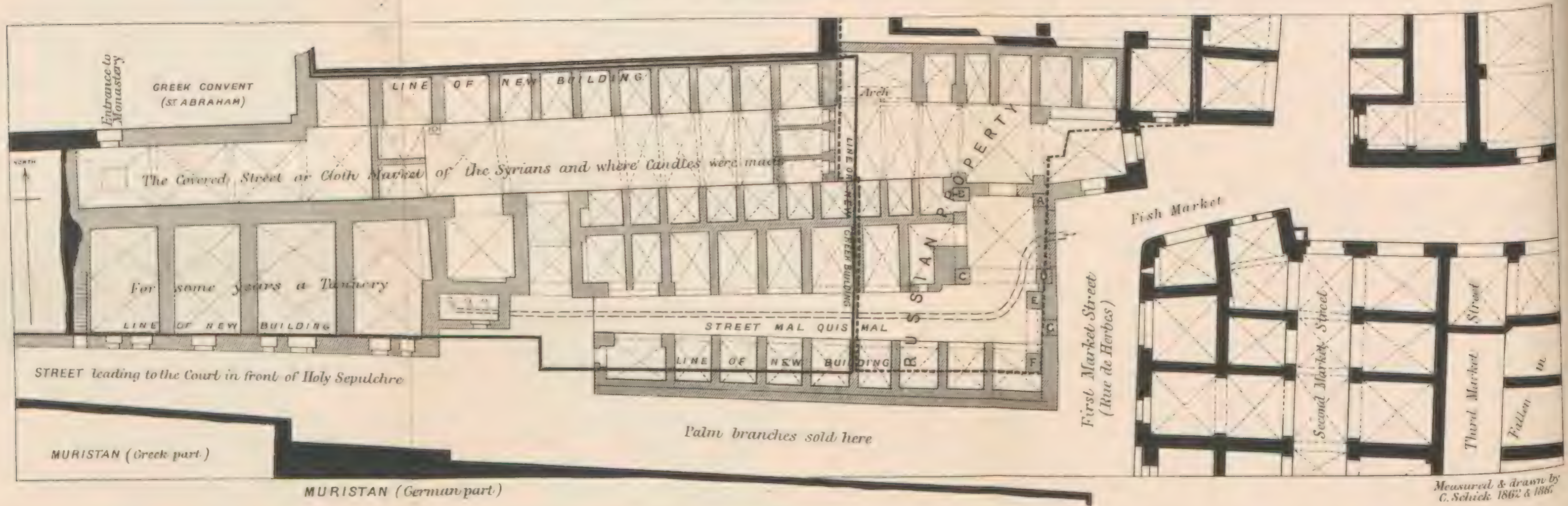
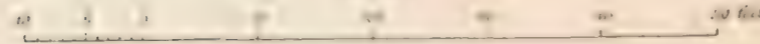


PLAN  
of the  
OLD BYZANTINE MARKET  
in  
JERUSALEM

Explanation

- Present Buildings
- ▣ Old Market now cleared away
- Line of New Buildings

Scale



Measured & drawn by  
C. Schick 1862 & 1886

Connected with this was the "Rue Mal-quis-mal" where meat was cooked and sold to the pilgrims. In the free place were sold fishes, and in a street south of it palm branches.

So I understand the description, and am convinced that in the longer and wider "arched street" with shops on both sides, is the Syrian cloth-market, leading to the Greek Convent of St. Abraham—and that the other, shorter and narrower one, also with shops on both sides, the "Mal-quis-mal" where meat, &c., was cooked for the pilgrims—as shown in plan, and now entirely removed (see I).

In case I am wrong in the interpretation, one more learned may correct me, and say what names these two market-streets had, and what was sold there. To me, it is enough to have pointed them out.

The masonry of the shops of these two streets was built in a very thin, light and easy manner, which proves it was not Crusading work, differing widely from such, and as these shops must have been built after the destruction of Jerusalem by the Romans I think it must be Byzantine work.

At the eastern end, there are six Crusading piers, erected at a later time as I could easily observe, the four northern, a, b, c, d, intended to bear a vault, and over it an upper room, e and f simply to bear one arch, very likely for a stair by which one might go up in the upper room, and to the roofs of the shops, and the northern street. The southern street (in which I entered the words "Mal-quis-mal") was never covered, but its southern boundary wall was strengthened by putting a second wall before the existing thin one, as shown in plan; and so it seems it was done on the east side: the piecing is of another time and description.<sup>1</sup> It seems also that between the piers, a and d, the roadway was upon, and in a later time (the Moslem) shut up.

Under the southern street a conduit for unclean water, or sewer, was found about two feet wide and 6 feet high, put in earth, having masonry on both sides, and covered with flat stones.

I have also to remark, that in later times the northern covered street was shut up in two places, first, towards the east (at the boundary between the Greeks and Russians) a wall with a door and windows to right and left was put in, and very likely made at the time into a room, shut up with a wall towards west. This, however, was, at some later time, altered again—door and windows were blocked up, and the room converted for three narrow shops—as I found them in 1862.

The second blocking up was more west, at the well-mouth, and made for two shops, as I found them, 1862. Behind it and the rooms of the turnery was, at that time, a kind of cellar or magazine belonging to the Convent St. Abraham. As there the roof had some opening so light and air could come in—now it is entirely altered.

The well mentioned is a very large one, forming at the ancient Jerusalem a kind of ditch, into which it was converted, later on, very

<sup>1</sup> Perhaps the remains of a connection with the three market streets.



likely in Hadrian's, or more probably in Constantine's, time, when the Church of the Holy Sepulchre was built.

Now the well is full of silt, as it seems, for centuries never cleansed, and always dirty water from the streets, and even worse places, is running in. On my asking the proprietor of it—the Greek Archimandrite or Captain of the Church of Holy Sepulchre—why it could not be cleaned, he said: “It would cost too much—a very high sum—we must wait for a later time.”

The new building opposite—in south—is going on, of which I will report in due time

As far as I know, there exists no other plan of the ancient and now removed market except the one I send you to-day made by me.

C. S.

## JERUSALEM.

October 26th, 1887.

1. In the adjoining, I send you a plan of an ancient market at Jerusalem, during my stay in Jerusalem—broken away—which, I think, may have some interest in studying the town in the Christian area. In the accompanying Notes I have tried to give explanations, and what else I found necessary to remark. When on both sides the new houses are done—if I am still alive—then I will send you a general plan of the entire neighbourhood; to-day I could do it only very imperfectly.

I am glad to be in a situation to report that I have got permission to dig in the ground of the Dominicans, near Jeremiah's Grotto, and to follow up the aqueduct. But am sorry to say the work goes rather slowly, and is more expensive than I suggested, as I find the aqueduct was filled up on purpose by the Crusaders, who used large stones for it instead of earth, and have removed the flagging stones on the top, so there is no empty parts, but all full, and often there are found larger stones, which must be broken in pieces. We traced it for about 45 feet; it does not go in a straight line, but has sharp angles. It is 2 feet 9 inches wide and 16 feet deep, entirely cut through the rock. But what I am suspicious about is the level of its bottom, according to my levelling, about 25 feet higher than the one ending on the town wall. However, I will go further on with the clearing, as, even if it is not the Birch Aqueduct as expected, something else of interest may be found. I will use up the money I have in hand, and then send you an account of the expenditure, stating everything in detail.

3. *The Wady Yasul Tomb.*—In my last I have written to you to try to get leave from the Pasha for a proper digging. The owner of the place wished expressly not to do this, and he himself went on to break through the rock from another side, following a cleft in the rock, but it proved that there is no real room or an artificial chamber, but simply a cavity by nature, allowing me, by proper lighting, to ascertain in a fuller

degree the exactness, the size, and form, &c., of the suspected sarcophagus; it proved not to be one at all, but simply a play of nature, the one visible side of which is like a sarcophagus covered with a sloping lid; the other side has nothing of the kind, and forms, with the rest of the rock, one piece, so I find further expense useless. The natives, and the proprietor of the ground, disbelieve this, my statement, and intend to break farther in to come nearer to it, which I am sure is useless, and am rather sorry that I have troubled myself and you so much about it, but it is, as when a hunter by going about become weary, and bringing no prey home. The explorer becomes very often disappointed, and is, therefore, the more glad when he finds something.

4. During my long life, and especially since I have been in Jerusalem (1846), I have made not only studies on the topography of this remarkable city, but also on the Temple. In doing so I found that many difficulties cannot be overcome, or the questions answered, as long as one deals only with words and plans; but when a model is made of the state of things the solution is very often easy, and near at hand. So I began to make a model of the Temple, and the mountain on which it stood: but having begun, I found it wants such arrangements to show and illustrate the whole history of this remarkable site. After many years' labour, I have so far ended the work that I could show it to travellers, and many of them have seen it, and all have told me that I should write and print the explanation to it, and every one would like to get such one. The writing I have done, and as I know the German language better than the English, I have done it in the same, but found no one undertaking the printing, but became advised to print, on my own account first, the last part—a description of the Haram, or the place of the Temple as it now is.

It was consequently printed here in Jerusalem, and also the pictures made, and the binding: it is now finished, so I take the liberty to send by this post also a copy to your Society, or the Library of the Society, and beg humbly for a favoured acceptance. Some people say it should be translated into English, but I doubt the value of the book for so doing; it will interest only a few people. Very likely the value of it will be recognised after my death, and perhaps my children may then sell the model. I am now about to study the wall of Nehemiah, chap. iii, and to write an architectural history of Jerusalem, of its walls and mode of building, during the many centuries from the beginning in Abraham's time, down till to-day; maps or plans will illustrate it. But I see I have to work a long time—I am now at the time of David and Solomon.

5. The restraints the Turkish Government makes against the Jews coming to Palestine are becoming gradually severe. When coming, they are allowed only to stay one month, and then have to return; when not returning themselves they are sent back by the police, and such desiring to become Turkish subjects could formerly do so without much difficulty, now a very high tax has been imposed.

6. The idea of making a railway to Jaffa has risen up again, and, as it

seems, with more hope; it will be an undertaking by subjects of the Turkish Empire.

The plan I have seen; it was simply a copy of the large map of the English Palestine Exploration Fund, the trace of the line put in, and all names in Turkish characters, and stated the number of souls in all the town and villages for about 12 miles on both sides of the line. It will go down the Wady Replaim, Bettis, Iswain, Sarar, &c., with a station at Arlouf, on the foot of the mountain, then goes down to Ramleh, Lydda, and Jaffa, reaching the sea north of the town. The road will have only one line, and a very narrow one, so that curves may be made, and it is hoped to bring in more than the interest of the outlay, which some people doubt.

C. SCHICK.

## STATUES AT ASKALON.

JERUSALEM, *September 21st*, 1887.

In my last I told you of some statues discovered by the Governor at Askalon, and what I did in the matter. To-day I wish to tell you some more about and submit some drawings. From Jaffa I get the answer that they do not know anything about the statues, and no photographer there had photographed them. By chance I heard that it was a Jew—a youth in the Israelite Alliance School here—which I soon found out. He showed me his plates, but had no photographs, and to prepare such for me he has first to get permission so to do from the Pasha. I was afraid this might lead to a negative result, so the man allowed me to expose his glasses to the sun, put on my prepared paper, so I get the enclosed figures, to which I make the following remarks:—

Nos. 1 and 2 are taken from the smaller statue, if we may call them so, but they (both stones) are high relief on a flat stone of white marble. The photographs are not good, as the figures were lying in a pit about 10 feet deep and in a lying position. It was tried in vain to put them upright, or at least at such an angle that the instrument would fall in a right angle on them. It could not be effected as the man told me, although the Pasha had ordered the fellahin to do so—as they had no instruments at all. So the view fell in a slanting angle on them, hence appearing too short. Nos. 1 and 2 are one and the same object, the camera only put on two opposite sides. No. 1 shows the whole figure, even to the forefoot (marked †), but No. 2 from the opposite side, taken on a larger scale but not the whole figure. The man said it is in size that of a real human body. The face is greatly injured, and on the head is a curious cover. It has wings and two arms, of which one is entirely broken away, the other also injured. The slab is said to be about 6 feet long, about 2½ broad, and 6·9 inches thick, besides the figure, which projects about 1 foot, on some places even more. The young Jew said: “It looks like a woman





and the peasants there knew of it for a long time, but considering them as idols kept them buried."

The other one seems to be of much more interest, and is also much larger. As the camera was so very small—the plates only  $5\frac{1}{2}$  inches wide and 7 long—it could not be taken in one time, but had to be made in two pieces, Nos. 3 and 4. The stone is about 10 feet long, a little more than 2 feet broad, and about (without the figures) 10 inches thick; on its bottom, where it forms a pedestal in two sets much thicker, as it will be seen on No. 3. On the pedestal no inscription was found. The kneeling figure Atlas cannot be in full human size—although the Jew told me so—but he said also, his eyes and whole face in an expression at his load (on the shoulder) to be very heavy—the mouth open so that he could put in his four fingers, the left arm injured. His load is a ball or globe, but behind not round but one with the slab on it stands an angel (or genius in full human size, arms and countenance greatly injured—all which is mentioned one and the same stone. So it seems these stones formed once a kind of pilaster in a temple, etc.

The Jew told me, when the figures are taken out he will go down again with a larger camera, and then he hopes to give better photographs. As the matter now stands nothing can be done, and it seems the Pasha is waiting for orders from Constantinople.

No. 5 was tried to take a view from a little of the side, and in one piece it helps only to a little better understanding of the other view (Nos. 3 and 4).

The site on which these figures were found and now lying underground is, according to the description of the young man, inside the ancient town of Askalon, about the middle. As I had no plan at hand when I conversed with him I could not fix the place, but will try to see the place in the Memoirs, and then speak again with the young man about the site—of which I will report in my next.

C. SCHICK.

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## PALESTINE ACCORDING TO THE ARAB GEOGRAPHERS AND TRAVELLERS.

DURING the course of the present year, it is hoped to bring out a work containing all the information to be found in the books of the Arab Geographers and Travellers who have written about Palestine and Syria. My original intention was to have limited the translations to Palestine proper, but the boundary line was not easy to fix. Palestine is but a province of Syria in the Muslim administration, and further remembering that the description left us by the Arab geographers of the various cities in the northern province of Syria is of great interest for the Crusading period, of which some of them were contemporaries, I have deemed it advisable to include in my work everything that had to do with Syria (As Shām), in its widest sense, from Farsus and Malatia on the north to

Rafh and the Tih Desert on the south. The eastern and western limits are fixed naturally by the Mediterranean and the great sand-sea of the Arabian desert.

As is well known, the Muslims did not begin to write books till fully two centuries had elapsed after the Era of the Flight; and our earliest geographer (who is, by the way, of Persian nationality) composed his book in the year 250 A.H., or about the middle of the ninth century A.D. From this period, however, down to the end of the fifteenth century of our reckoning, the names of authors follow each other at very short intervals, and we have over a score of writers, all Muslim, and nearly all writing in Arabic, who have undertaken to describe for us the various provinces of Syria and Palestine.

The accompanying list will give an idea of the mass of material that is available. It must, however, be premised, that in every case we have not to do with the result of personal observation and original information. The Arab writers plagiarised each from his predecessor to a very remarkable degree. Each tried to make his work as complete as possible by incorporating therein all he could gather from previous reading, as well as from personal observation when he had himself visited the places described; and this constant plagiarism, though it decreases the amount of fresh information, is very valuable for purposes of comparison, and for rectifying mistakes of copyists and filling in lacunæ.

#### LIST OF GEOGRAPHERS AND TRAVELLERS.

	A.D.
1. Ibn Khurdâdbih, wrote about....	864
2. Belâdhurî....	869
3. Kudamah....	880
4. Ya'kûbî ....	891
5. Ibn al Fakhî ....	903
6. Ibn 'Abd Rabbih....	<i>circa</i> 913
7. Mas'ûdî ....	943
8. Istakhrî ....	951
9. Ibn Haukal ....	978
10. Mukaddasî ....	985
11. Nâsiri Khusrau ....	1052
12. Idrisî ....	1154
13. 'Ali of Herat ....	1173
14. Ibn Jubair ....	1185
15. Yakût ....	1225
16. Dimashkî ....	<i>circa</i> 1300
17. Abu 'l Fidâ ....	1321
18. Ibn Batûtah ....	1355
19. The author of the "Muthir" ....	1351
20. Shams ad Dîn Suyûtî ..	1470
21. Mujîr ad Dîn ....	1496

It may perhaps be interesting to give a cursory note on each of the above mentioned writers, that our readers may have some idea of what manner of men they were, and of the nature of the work each performed.

1. Ibn Khurdādbih the first name on the list, was, as before noted, a Persian by birth; as in fact his father's name shows, for *Khurdād-bih* signifies in old Persian "Good gift of the Sun," or as the Greeks would have said, "Heliódorus." Ibn Khurdādbih was born about the commencement of the third century of the Hejrah (corresponding to the ninth of our era) and flourished at the court of the Abbaside Caliph Al Mu'tamid at Bagdad. Under his government Ibn Khurdādbih held the office of Chief of the Post in the province of Jibāl, the ancient Media, and with a view, doubtless, of instructing his subordinates, compiled the Handbook of Routes and Countries which has come down to us as one of the earliest of Muslim geographical treatises.

2. The work of Belādhu'ri is of an entirely different order, and only in a very secondary sense geographical. His is the earliest historical account we possess of the "Conquests" of the Muslims. He was born at Bagdad, and receiving his education there during the days of the great Al Mamūn, lived to enjoy the favour of the Caliphs Al Mutawakkil and Al Musta'in. He wrote his great "Book of the Conquest" about the year 869 A.D., and died in 922. His work is unfortunately almost barren of geographical description, the names of the places only being given and nothing more; all detail is confined to the ordering of the battles and the accounts of those who took part in the action.

3. Kudāmah, who wrote a small book on the Revenues of the Muslim Empire about the year 880 A.D., was of Christian origin, but like most of his compeers found it to his advantage to embrace Islam. He occupied the post of accountant in the Revenue Department at Bagdad, and we know nothing further of him but that he died in 948. His work on the revenue contains some interesting geographical notes.

4. Ya'kūbi (also called Ibn Wādhih) was both historian and geographer. In his history, which was written as early as the year 871 A.D., he clearly states that the Dome of the Rock was the work of the Caliph 'Abd al Mālik, and gives the reason that prompted him to construct it.<sup>1</sup> His geography was written some twenty years later than his first work, or about the year 891. It unfortunately has not reached us in a perfect state, but the section relating to Syria is in tolerably good preservation. The work is curious, for it gives notes on the settlements made by the various Arab tribes who had migrated into Syria, otherwise it is little more than a bare list of provinces with their chief cities, and only interesting for the information of what were great towns in those days.

Of Ya'kūbi's biography but little is known. It would appear that he was born in Egypt, passed the earlier part of his life in Khurasān and

<sup>1</sup> A translation of this passage and of some others giving early notices of Jerusalem will be found in my paper in the *Quarterly Statement* for April, 1887.



the further east, and came back to spend his latter years on the banks of the Nile in the land of his birth.

5. Ibn al Fakih, the author of a very curious geographical miscellany, was a native of Hamadân, in western Persia, and flourished during the Caliphate of Al Mo'tadhid at Bagdad. He wrote his work about the year 903 A.D., but unfortunately we only possess it in the form of a somewhat arbitrary abridgment made by a certain 'Ali Shaizari, of whom little more is known than his name. Ibn al Fakih gives us a careful description of the Haram Area at Jerusalem, and is also, so far as I know, the first Arab author who notices the great stones at Baalbek, of which he notes the measurements.

6. The next name on the list is that of a Spanish Arab, Ibn 'Abd Rabbih, born at Cordova in 860, and died in the same city in 940. He composed an extremely interesting historical work, extending to three volumes in the Cairo printed edition, giving us details that are found nowhere else of the life and manners and customs of the pre-Islamic Arabs and others. The book is named "The Collar of Unique Pearls," and in it there is a chapter describing in great detail the appearance of the Haram Area at Jerusalem. Whether or not the author ever visited the Holy City I have been unable to discover; but if his description is not from his own observations he must at least have borrowed it from someone who was capable of making good use of his eyes.<sup>1</sup>

7. Mas'ûdi is the author of the most entertaining historical work to be found in the whole range of Muslim literature. His "Meadows of Gold" begin with the Creation, and tell us all the Arabs knew of universal history down to the year 943, when the work was written. Mas'ûdi was born in Bagdad towards the end of the eighth century of our era. In his youth he travelled widely, visiting Multân and India, and passing through Persia a second time on his way to India and Ceylon, whence he returned to Bagdad *via* Madagascar. He travelled through Palestine in 926, and spent some time at Antioch; then went and settled in Egypt about the year 955, where he died a year later, at Fostat, now called Old Cairo. Spread up and down his numerous volumes of historic lore are many geographical notes, which are of considerable value, especially when it is remembered the early period at which the author wrote, his powers of observation, and his great learning.

8, 9. The names of Istakhri (wrote 951) and Ibn Haukal (wrote 978) must be taken together, for the latter, who is by far the better known of the two, only brought out an emended and somewhat enlarged edition of the work of the former, giving it his own name. We have here to deal with the first systematic geography of the Arabs. It is not a mere road book, such as was Ibn Kurdâdbih's, or a revenue list, as Kudamah's, but a sober description of each province in turn of the Muslim Empire, with its chief cities and notable places. Istakhri, a native of Persepolis, as his name implies, wrote his book to explain the maps that had been drawn

<sup>1</sup> See the translation in *Quarterly Statement* for April, 1887.

up by a certain Balkhi, about the year 921, which maps are unfortunately not extant. Of Istakhrî and Ibn Haukal all that we know is that they were both by trade merchants, and that they travelled far and wide in the pursuit of commerce. All further biographical details are wanting.

10. Of Mukaddasi I need say little here, having already given details of his life and work in the preface to my translation of his account of Syria and Palestine, recently published by the Palestine Pilgrims' Text Society. He wrote in 985, and his description of the Holy Land and its cities is the more valuable from his being himself a native of Jerusalem, as indicated by his name, Al Mukaddasi, the Hierosolymite.

11. Rather more than half a century later than Mukaddasi, and about half a century before the first Crusade, the Persian traveller, Nâsir-i-Khusrau, passed through Palestine on his way to Mecca. He was in Jerusalem in 1052, and his description of the Holy City and the Haram Area is most minute, and extremely valuable, as being the last we have of the holy places before the coming of the Crusaders. Further details I need not give here, since before long I hope to bring out a translation from the Persian original of the Palestine section of his diary, to be included in the same series that has published Mukaddasi. The British Museum possesses a minute but very beautiful MS. of his work, and by its aid I have been able, I think, to emend many of the obscure passages in the edition of the French *savant*, M. C. Schefer.

12. The geographer, Idrisi, is perhaps better known in the west than any other Arab writer on this subject. As long ago as 1592 the text was printed in Rome. His geography was written in 1154, at the request of the Norman king, Roger II, of Sicily, at whose court he resided. Idrisi was born at Ceuta, but of Spanish Arab parents. He travelled much, for he relates that he has seen the English and French coasts, and has lived at Lisbon. His description of Palestine is excellent, and that of Jerusalem in particular is interesting, for he wrote of it as it was during the occupation of the Crusaders. It would not, however, appear that he himself visited the Holy Land, and his information, therefore, must have been derived from the accounts that he obtained at the Court of Roger from books, and from those who had travelled in that country.

13. Another Muslim who has left us a description of sites in Palestine during Crusading times is 'Ali of Herat, who wrote in 1173 a small work on "The Places of Pilgrimage." Its most interesting section is that describing Hebron, wherein he gives an account of a visit to the Cave of Machpelah.<sup>1</sup> 'Ali of Herat, though of Persian origin, wrote in Arabic. The text of his work has not, as far as I know, ever been printed; but the Bodleian possesses a good MS. copy. 'Ali died at Aleppo in 1215.

14. In 1185, two years before Saladin reconquered Jerusalem, the northern part of Palestine was visited by the traveller Ibn Jubair, a Spanish Arab, born at Valencia in 1145. Ibn Jubair set out on his

<sup>1</sup> I have given a translation of Yakût's version of the story in my paper on Suyûti.—J.R.A.S., vol. xix, 1887, April.

travels from Granada in 1183; he came first to Egypt, went up the Nile, and then across the desert to Aidhab, on the Red Sea, whence he reached Mecca, and subsequently Medina. Thence he crossed Arabia to Kufah and Bagdad (of which he has left a most interesting account), and travelling up the Tigris bank, crossed from Mosul to Aleppo, travelled down to Damascus (of which he has also given a detailed description), and thence on to Acre, where he took ship, and ultimately landed again on Spanish soil at Carthage in 1185. Unfortunately for us he did not visit Jerusalem. He made two other journeys to the East subsequent to the one above mentioned, and on the return journey died at Alexandria, in Egypt. His description of the places he saw is lively and exact, although from the ornate style in which he wrote a literal translation of his diary would be tiresome reading.

15. For the immense extent of his labours and the great bulk of his writings Yakût has certainly the first rank among Muslim geographers. By birth a Greek and a slave, he was brought up and received a scientific education at Bagdad, in his master's house, who was a merchant. The details of his biography would take too long to recount here; suffice it to say that at various periods of his wandering life he sojourned at Aleppo, Mosul, Arbela, and Marv, and that he fled from this latter city (in those days renowned for its numerous libraries) in 1220 on the advent of the armies of Jenghis Khân. Travelling across Persia and through Mesopotamia, he ultimately reached Syria, and settled down at Aleppo, in which city he died in 1229. His great geographical lexicon, which describes in alphabetical order every town and place of which Yakût could obtain any information throughout the many kingdoms of the Muslims, was completed in the year 1225. It is a storehouse of geographical information, the value of which it would be impossible to over-estimate, and since no translation has ever been attempted of the articles therein relating to Palestine and Syria I hope to bring to light much that is new by giving an English version of what the great geographer has to say about the cities and sites of the Holy Land.

After the days of Yakût there is indeed very little new to be learnt from the Arab geographers.

16. Dimashki, born in 1256 at Damascus (as his name implies), wrote about the year 1300 a very jejune description of his native land. He was a contemporary of Sultan Bibârs, and his work is of some value in connection with the Crusading Chronicles. He died at Safed in 1327.

17. His contemporary, Abu 'l Fidâ, some time Prince of Hamâh, and a collateral descendant of the great Saladin, is a geographer of far higher merit. His chapter on Syria and Palestine is for the most part not copied from books, for as he is describing his native country he writes from personal observation. The work was completed in 1321. Abu 'l Fidâ himself was born at Damascus in 1273. He lived under the Mamlûk Sultans Kalaun, Lajûn, and Malik en Nâsir, and was made Governor of Hamâh in 1310, in which city he died in 1331.

18. Ibn Batûtah, the Berber, may well take rank with the Venetian,

Marco Polo, for the marvellous extent of his journeyings. He was born at Tangiers about the year 1300, and at the age of twenty-five set out on his travels.

Of these he has left us a full description, written in the year 1355. His route in the barest outline is all that can be indicated in this place. Starting from Morocco he visited in succession Tunis, Tripoli, and Egypt; going up through Palestine and Syria, he accompanied the Hajj to Medina and Mecca, went thence on through Mesopotamia to Persia, and returning, spent some months, first at Bagdad, and subsequently at Mosul. From Mosul he went again to Mecca, and from there travelled through Yemen, and so back to Egypt. From Egypt he took ship for Asia Minor, and afterwards visited Constantinople, the Crimea, Astrakhan, Khârizm, Tartary, Transoniana, Afghanistan, and finally reached India, where he spent a considerable time at Delhi. From India he sailed to the Maldivé Islands and Ceylon, taking them on his way to China; and on the return journey visited Sumatra. After long voyaging he again found himself at Mecca, and from the Holy City took his way home to Fez *via* the Sudan and Timbuctoo. He subsequently visited Spain; and died at Fez, at an advanced age, in the year 1377.

Ibn Batûtah's account of what he saw in Palestine is extremely curious, and his description of Jerusalem goes into considerable detail. Possibly it might be worth while to translate his Palestine route *in extenso*, and give it in the form of one of the "Pilgrims."

19, 20, and 21. The last three names on the list are those of the Jerusalem Topographers. The earliest of them, the author of the much quoted "Muthîr al Ghirâm"—which only exists in MS.—wrote in the year 1351.

His work forms the foundation of the description of Jerusalem, written in 1470 by Shams ad Din Suyûti,<sup>1</sup> and lastly, Suyûti *plus* the "Muthîr" has been incorporated by Mujîr ad Din, chief judge of the Holy City, in the detailed description he has given us of Jerusalem, written a quarter of a century later than Suyûti, in the year 1496. From a topographical point of view these three taken together correct one another, and the last of them describes the sites of Jerusalem very much as they stand at the present day.

A few words must now be added in conclusion to indicate the method it is proposed to follow in the work I hope, before very long, to lay before the subscribers to the Palestine Exploration Fund. A first chapter therein will be devoted to a general account—as found in the various Arab geographers—of Palestine and Syria; giving the political divisions of the country at various epochs, its products and peculiarities, its commerce, and, in short, all details that are of a general order. Next in place, as being by far the most voluminous, I propose to give the article on Jerusalem. It will contain a careful translation, with the needful notes,

<sup>1</sup> See J. R. As. Soc., April, 1887, for a full account and translation of the more important parts of his work.

of all that the Arab geographers have reported of the Holy City and its buildings. The descriptions of such travellers as Nāsir-i-Khusrau and Ibn Batūtah, as found in their diaries, will be here translated *verbatim*.

Special attention will, of course, be paid to the due arrangement in chronological order of the descriptions that have come down to us, of the buildings of the Dome of the Rock, and Aksa Mosque, and the Church of the Holy Sepulchre, in order that the history of these buildings, *during the last thousand years*, may, by the testimony of contemporary writers, once and for all, be set at rest.

Following the chapter on Jerusalem will come one that will give the various accounts of Damascus. After these two, I propose to arrange under the place names in alphabetical order everything that I have been able to gather from the above enumerated authors, concerning each of the several towns and sites in Palestine and Syria. Some of the articles will naturally be confined to a few lines; others, such as those dealing with Hebron, Tiberias, the Dead Sea, the Sea of Galilee, &c., will contain a considerable amount of translation.

Lastly, I propose to add a classified "road book" of the distances between the various towns, as given by the geographers (citing the authority for each), since by this means we are often enabled to identify sites of places now gone to ruin, and further, we gain an idea of the extent of traffic along these high roads during all the centuries of the middle ages. A full index will, as a matter of course, be added, and as an introduction, a chronological table, for reference, of the various dynasties that have held sway in Palestine, from the first Arab conquest down to its last conquest by the Turkish Sultan, Selim I, in 1518.

Maps and plans of the various edifices described will also be inserted, as required, to elucidate the text.

Of the translations from the Arabic, I should say that in every case they will have been made by myself from the original texts, printed or MS. Among the score of authors enumerated above, some few have been already translated (in part or in whole) into Latin, French, or German. Of previous translations I shall of course make my use, and take profit at the same time by the notes the editor, or translator, may have added to his text. A full bibliographical list of the texts used will be given, and in this it will doubtless be a matter of surprise for some, to note that of these score of Arab geographers, only one has been edited (untranslated, in the Arabic text) by an Englishman, and only one has been translated into English, and that, unfortunately, after a fashion that renders it utterly unreliable for any purposes whatsoever.

GUY LE STRANGE.

## IDRÍSÍ'S DESCRIPTION OF JERUSALEM IN 1154.

IN connection with Professor Hayter-Lewis' excellent paper on the Aksa Mosque (see *Quarterly Statement* for January, 1887), the following translation of Idrísí's description of Jerusalem in the year 1154 may be found of interest. Idrísí wrote at a time when Jerusalem was still in the possession of the Crusaders.

My translation is made from the Arabic text printed by J. Gildemeister (*Zeit. des Deutsch. Pal. Ver.*, Band 2, Heft 2, 1885), from a MS. copy lent to him by the Dutch Orientalist, de Goeje, which had been carefully collated with the MS. preserved in Paris and at Oxford.

GUY LE STRANGE.

*The Holy City.*—Baít al Mukaddas, a beautiful city of ancient foundation, lasting for ever. It was anciently called Iliyâ (Ælia). It stands on a mountain, and you ascend to it from all sides. In plan it is long, and its length stretches from west to east.

Bâb al Mihrâb<sup>1</sup> is on its western side; and this is the gate over which is the Cupola of David, Kubbat Dâûd—peace be upon him.

Bâb ar Rahmah<sup>2</sup> is on the eastern side of the city. It is closed, and is only opened at the Feast of Olive-branches (Palm Sunday).

Bâb Sihyûn (Sion Gate) is on the south of the city.

Bâb 'Amûd al Ghurâb (the Gate of the Crow's Pillars)<sup>3</sup> lies to the north of the city.

When you enter (Jerusalem) by the (Jaffa Gate) Bâb al Mihrâb, which as aforesaid is the western gate, you go eastwards through a street that leads to the great church known as the Kanisah al Kayâmah (the Church of the Resurrection), which the Muslims call Kumâmah (the Dughill). This is a church to which pilgrimage is made from all parts of the Greek empire, both from the eastern lands and the western. You may enter (the Church) by a gate at the west end,<sup>4</sup> and the interior thereof occupies the centre space under a dome which covers the whole of the church. This is one of the wonders of the world.

The church itself lies lower than this gate, but you cannot descend thereto from this side.

Another gate opens on the north side,<sup>5</sup> and through this you may descend to the lower part of the church by thirty steps. This gate is called Bâb Santa Maria.

<sup>1</sup> The Gate of the Oratory (of David), *i.e.*, the Jaffa Gate.

<sup>2</sup> The Gate of Mercy. One half of the so called Golden Gate.

<sup>3</sup> The "Damascus Gate" is at the present day known as Bâb al 'Amûd, "the Gate of the Piliar," what the "Crow" was I know not.

<sup>4</sup> No longer, I believe, in existence.

<sup>5</sup> Also closed at the present day by external buildings occupying the part north of the "Aisle of the Church of the Crusaders."

When you have descended into the interior of the church you come on the most venerated Holy Sepulchre. It has two gates, and above it is a vaulted dome of very solid construction, beautifully built, and splendidly ornamented. Of these two gates, one is toward the north, facing the gate Santa Maria, and the other is toward the south, facing which is the Báb as Salûbiyyah (the gate of the Crucifixion). Above this gate is the bell-tower<sup>1</sup> of the church.

Over against this,<sup>2</sup> on the east, is a great and venerable church, where the Franks of Ar Rûm (which is the Greek Empire) have their worship and services. To the east (again) of this blessed church, but bearing somewhat to the south, is the prison in which the Lord Messiah was incarcerated ; also the place of the Crucifixion.

Now as to the great dome (over the Church of the Resurrection), it is of a vast size, and open to the sky. Inside the dome, and all round it, are painted pictures of the Prophets, and of the Lord Messiah, and of the Lady Maryam, his mother, and of John the Baptist. Over the Holy Sepulchre lamps are suspended, and above the Place (of the Grave) in particular are three lamps of gold.

On leaving the great Church (of the Resurrection) and going eastwards, you come to the holy house built by Solomon, the son of David. This, in the time of the Jews, was a mosque (or house of prayer) to which pilgrimage was made, but it was taken out of their hands and they were driven from thence ; but when the days of Islam came, under the Kings of the Muslims, the spot came once more to be venerated, as the Masjid al Aksa.

The Masjid al Aksa is the great mosque (of Jerusalem), and in the whole earth there is no mosque of greater dimensions than this ; unless it be the Friday Mosque at Cordova, in Andalusia, which they say has a greater extent of roof than has the Aksa, but the court of the Aksa Mosque is certainly larger than is that of the mosque at Cordova.

(The Haram Area of) the Masjid al Aksa is four-sided, its length measures 200 fathoms (*bâ'*), and its breadth is 180 fathoms.

In that half (of the Haram Area) which lies (south) towards the Mihrâb (or prayer-nich) is (the main building of the Aksa Mosque), which

<sup>1</sup> Written in the Arabic *Kanbinâr*, Campanarium. This would go to prove the Tower of the Church of the Resurrection to be older than M. de Vogüe supposes (judging it on architectural grounds only), in his *Eglises de la Terre Sainte*, p. 207. The great south portal of the Church, the only one at present in use, and immediately to the north of which stands the Bell Tower, is the one, as I take it, here called the "Gate of the Crucifixion." It is noteworthy that in Idrisi's days the Church had three entrances, the one just mentioned, to the south ; one opposite, opening north (Gate of Santa Maria), and the West Gate, from which you could *not* descend into the body of the edifice.

<sup>2</sup> The Arabic has "opposite to her," *i.e.*, the Church of the Resurrection as I understand it. The Church of the Greeks is, I imagine, the present Catholicon, lying immediately east of the Rotunda of the Sepulchre, and to the present day belonging to the Greek community.

is roofed with domes of stone set on many rows of columns. The other half (of the Haram Area) is an (open) court, and is not roofed over.

In the centre of the (court of the) mosque rises the mighty dome known as the *Kubbat as Sakhrāh* (the Dome of the Rock).

This dome is overlaid with gold mosaic, and is of most beautiful workmanship, erected by the Muslim Khalifs. In its midst is the Rock (the *Sakhrāh*), which is said to have fallen down (from heaven). It is a mass of stone of the height of a platform, and occupies the centre under the dome.

The extremity of one of its sides rises above the floor to half a man's height or more, while the other side lies even with the ground. The length of the rock is near to equal with its breadth, and is some ten ells (*dhird*) and odd by the like. You may descend into the interior thereof, and go down into a dark chamber, like a cellar, the length of which is ten ells, by five in the width, and the ceiling is above a man's height up. No one can enter this chamber except with a lamp to light him.

The Dome (of the Rock) has four gates. The western gate has opposite to it an altar whereon the Children of Israel were wont to offer up their sacrifices.<sup>1</sup> Near the eastern gate of the dome is the church which is called the Holy of Holies;<sup>2</sup> it is of an admirable construction.

(The gate) to the south faces the roofed-in portion (which is the main building of the *Aksa*), which same was in former times the place of prayer of the Muslims. Since (the Holy City) was conquered by the Greeks (*i.e.*, the Crusaders), and it hath remained in their hands even down to the time of the writing of this book (in the year 1154 A.D.), they have converted this roofed-in portion (which is the main building of the *Aksa*) Mosque into chambers wherein are lodged those companies of men known as *Ad Dāwiyyah* (the Templars), whose name signifies "Servants of God's House." Opposite to the northern gate (of the Dome of the Rock) is a beautiful garden, planted with all sorts of trees, and round this garden is set a colonnade of marble, of most wondrous workmanship. In the further part of this garden is a place of assembly, where the priests and deacons are wont to take their repasts.

Leaving the mosque (and crossing the Haram Area) you come, on the eastern side, to the *Bāb ar Rahmāh* (the Gate of Mercy), which is now closed, as we have said before; but near to this gate is another, which is open. It is called *Bāb al Asbāt* (the Gate of the Tribes), and through it there is much coming and going. When you have passed out by the Gate of the Tribes you reach the limits of the archery-ground, and find there a large church, and very beautiful, dedicated to the Lady Mary, and the place is known as *Al Jismāniyyah* (which is Gethsemane).

At this place also is her tomb, on the skirt of the Mount of Olives (*Jalal az Zaitūn*). Between it and the Gate of the Tribes is the space of about a mile.

<sup>1</sup> What this was I am unable to discover.

<sup>2</sup> This must be the present Dome of the Chain, *Kubbet as Silsileh*.



On the road ascending the Mount of Olives is a magnificent church, beautifully and solidly built, which is called the Church of Pater Noster; and on the summit of the mount is another church, beautiful and grand likewise, in which men and women incarcerate themselves, seeking thereby to obtain favour with Allah—be He exalted! In this aforementioned mount, on the eastern part, and bearing rather to the south, is the tomb of ALAZAR (Lazarus), whom the Lord Messiah raised again to life. Two miles distant from the Mount of Olives stands the village from which they brought the she ass on which the Lord Messiah rode on his entry into Jerusalem. The place is now in ruins, and no one lives there.

From the Tomb of Lazarus you take the road down to the Valley of the Jordan (*Wādī al Urdunn*), and between the valley and the Holy City is the distance of a day's journey. Before reaching the River Jordan is the City of Jericho (*Arīhā*), lying three miles distant from the bed of the river.

On the banks of the Jordan stands a magnificent church, called after Saint John (*Sant Yûhannâ*), where the Greek monks dwell.

The River Jordan flows out from the Lake of Tiberias (*Buhairah Tabariyyah*), and falls into the Lake of Sodom and Gomorah (*Buhairah Sâdûn wa Ghâmûd*), and these were two cities of the people of Lot which God overwhelmed because of the sins of their inhabitants. The land lying to the south of the River Jordan is one continuous desert.

Now as to what lies adjacent to the Holy City on the southern quarter:—When you go out by the *Bâb Sihyûn* (the Gate of Sion) you pass a distance of a stone's throw and come to the Church of Sion, which is a beautiful church, and fortified. In it is the guest-chamber wherein the Lord Messiah ate with the Disciples, and the table is there remaining even unto the present day. The people assemble here (for the Festival of Maundy) Thursday.

From the Gate of Sion you descend into a ravine called *Wādī Jahannum* (the Valley of Gehenna). On the edge of this ravine is a church called after the name of Peter, and down in the ravine is the *'Ain Sulwân* (Spring of Siloan), which is the spring where the Lord Messiah cured the infirmity of the blind man, who before that had no eyes. Going south from this said spring is the field (*al Haki, Acceldama?*) wherein strangers are buried, and it is a piece of ground which the Lord bought for this purpose (!); and near by to it are many habitations cut out in the rock wherein men incarcerate themselves for the purposes of devotion.

Bethlehem (*Bait Lahm*) is the place where the Lord Messiah was born, and it lies six miles distant from Jerusalem. Half-way down the road is the tomb of Rachel (*Râhil*), the mother of Joseph and of Benjamin, the two sons of Jacob—peace be upon them all. The tomb is covered by twelve stones, and above it is a dome vaulted over with stone. At Bethlehem is a church that is beautifully built, of solid foundations, spacious and finely ornamented even to the uttermost, so that not among all other churches can be seen its equal. It is situated in a low-lying ground. The gate thereof is towards the west, and there are (in the

church) marble columns of perfect beauty. In one angle of the choir (*al haikal*), towards the north, is a cave wherein the Lord Messiah was born. It lies below the church, and in the cave is the manger wherein the Messiah was found. As you go out from Bethlehem you see towards the east the church of the Angels who told the good news of the birth of the Lord Messiah to the shepherds.

## THE PILGRIMAGE OF THE ABBOT DANIEL.<sup>1</sup>

Russian pilgrimages to the Holy Land date from the conversion of the Russians to Christianity towards the close of the tenth century. As early as 1022 A.D. allusion is made, in the life of St. Theodosius of Kiev, to the presence of Russian pilgrims in Palestine; but the first whose name is known is St. Varlaam, Abbot of the Laura of Kiev, who visited Jerusalem in 1062 A.D. The earliest extant record of a Russian pilgrimage to the Holy Land is that of Daniel, the Abbot, or Prior (*Ἡγουμενος*), of a Russian monastery, of whom nothing certain is known. It may be inferred from Daniel's reference to the river Snov, as a stream that possessed several of the characteristics of the Jordan, that he came from the province of Tchernigov, in Little Russia, through which the Snov runs; and he is supposed to have been the same Daniel who was Bishop of Suriev in 1115 A.D., and who died the 9th September, 1122 A.D.

Daniel was a contemporary of Nester, the oldest of the Russian annalists, and his narrative is one of the most important Russian documents of the commencement of the twelfth century; its intrinsic merits seem to have made it extremely popular, and there are no less than 75 MSS., of which the earliest dates from 1475 A.D. The date of the pilgrimage can be fixed with considerable certainty from Daniel's own statements. He mentions the Russian Grand Duke Michel Sviatopolk Isiaslavowitch (1093-1113), and Baldwin, King of Jerusalem (1100-1118); he also states that Acre belonged to the Franks, and as this city was taken by the Crusaders on the 26th May, 1104, the date must lie between 1104 and 1113. A closer approximation is, however, possible. Daniel tells us that he accompanied Baldwin on his expedition against Damascus, and M. H. Hagenmayer has shown (*"Ekkehardi Urangiensis abbatia, Hierosolymita,"* Tub. 1876, pp. 360-362) that this expedition must have been one of those undertaken by the king between 1106 and 1108. Again, Daniel speaks of the attacks to which pilgrims were exposed from the Saracens of Ascalon; and William of Tyre mentions one of these attacks on Christians passing from Jaffa to Jerusalem, which took place in the year 1107 (*"Des choses avenues en la terre d'Outremer,"* xi, 4, Paris, 1879, vol. i, 384). Lastly, it will be observed that, in the very minute description which Daniel gives of the

<sup>1</sup> This tractate forms the latest issue of the Palestine Pilgrims Text Society.

ceremony of the "Holy Fire," no allusion is made to the Latin patriarch, and that one of the bishops takes the place that Fulcher de Chartres assigns to the patriarch. Now, we know that there was no Latin patriarch at Jerusalem during Easter, 1107, for Dagobert left the city in 1103, and Ebreinar, his substitute, started for Rome towards the end of 1106. The Easter week which Daniel passed at Jerusalem must therefore have been that of 1107, and his pilgrimage was probably made during the years 1106-1107 A.D.

The wide field which Daniel's narrative covers--wider than that of any previous pilgrim--its fulness of detail, the light that it throws on the condition of the country a few years after its conquest by the Crusaders, and the evident good faith in which it is written, give it an importance and value that have not, hitherto, been sufficiently recognised. Daniel travelled extensively in Palestine west of Jordan; he visited most of the sanctuaries, holy places, and monasteries, and, having provided himself everywhere with the best guides, he wrote down a minute description of all he saw. According to his own account (p. 73) he described nothing that he did not see with his own eyes, and this is supported by the internal evidence of the narrative, for when he cannot visit a place, he frankly admits that he is dependent upon others for his information. Incidentally the Russian Abbot throws some curious light on the unsettled state of the country, and the dangers to which travellers were exposed, on the roads, in the earlier years of the Latin kingdom. At Lydda, on the high road from Joppa to Jerusalem, pilgrims pass the night in great fear of raiding Saracens from Ascalon; brigands frequent the road from Jerusalem to Jericho; on the forest-clad hills near Solomon's Pools, Saracen bands from Ascalon lie in wait for those journeying from Bethlehem to Hebron; the mountains south-east of Bethlehem are so full of brigands that Daniel and his companions have to travel under the protection of a Saracen chief. No one can proceed from Jerusalem to the Sea of Galilee without an armed escort; the Saracens of Beisan attack travellers as they ford the streams; impious Saracens massacre Christians going from Mount Tabor to Nazareth; and Lebanon cannot be visited on account of the infidels. We learn, too, that panthers and wild asses still found a home in the Wilderness of Judaea; and that lions in large numbers frequented the jungle in the Jordan Valley; whilst the date-palm, which has since disappeared, flourished in the semi-tropical climate of Jericho and Beisan.

Daniel's narrative derives additional interest from the fact that the writer was not only a member of the Russian (Greek) Church, but the abbot of a monastery, and, presumably, a man of some education and intelligence. It is written in a devout, believing spirit, such as might be expected in a Greek priest, and shows no trace of hostility towards the dominant Latin religion. Daniel was accompanied throughout his pilgrimage by a monk of the Greek Laura of St. Sabbas, "a very pious man of advanced age, who was well-versed in the Scriptures;" and he was a welcome guest at the numerous Greek monasteries throughout the country. His traditions are those of the Eastern Native Church, referred to by Sawulf

and others as Assyrian or Syrian traditions ; he is evidently well acquainted with the Apocryphal Gospels in their Greek forms, and he quotes from the Protevangelium of James, whence several of the traditions are derived. The relations between the Greek and the Latin Churches in Palestine appear to have been most friendly at this period, and the deference paid by the King of Jerusalem to the Greek clergy and the monks of St. Sabbas is specially noteworthy. The Greeks have charge of the Church of the Holy Sepulchre, and keep the keys of the Sepulchre gate ; and during the Easter ceremonies the Greek lamps are placed on the tomb itself, whilst those of the Latins are suspended above it. The description of the descent of the Holy Light, or Fire, agrees in all essential particulars with that of Fulcher de Chartres (1101 A.D.), who was present on the memorable occasion when the Holy Fire did not kindle the lamps till Easter Sunday. Both writers describe the flame as being of a ruddy colour, and mention that all present joined in the Greek cry, "Kyrie Eleison." Daniel says that the Greeks and Latins read the service for Easter Saturday together ; Fulcher, that the Franks first read each lesson in Latin, and that the Greeks then read the same lesson in Greek. In the Frank account of the ceremony the patriarch is said to have opened the door of the tomb ; in the Russian, one of the Latin bishops ; a difference explained by the absence of the Latin patriarch at the time of Daniel's visit.

Daniel is on the whole fairly accurate, but he occasionally falls into error, and some of his blunders betray an ignorance of Scripture not very creditable to himself or to his guide, the learned monk of St. Sabbas. Geographical errors, such as the location of Capernaum on the sea coast near Carmel, the identification of Lydda with Ramleh, of Casarea Philippi with Kaisariyeh (Casarea Palestina), of Samaria with Nâblus ; and of Bashan with Beisân ; and the statement that Decapolis was a town, may be set down to the general ignorance of the period. There are other blunders, however, for which far less excuse can be made, such, for instance, as the quaint account of the battle near Jericho, during which the sun stood still whilst Joshua conquered Og, King of Bashan ; the statement with regard to events said to have taken place at Beisân (p. 60), and the manner in which Mark i, 16-18, is mixed up with i, 19, 20 (p. 64). Little dependence can be placed on the distances and dimensions given in the text, the old Roman itineraries had fallen into disuse, and the former are only approximate, whilst the latter are in most cases erroneous either from corruption of the text or from having been hastily written down from imperfect information. In giving the direction of a place, Daniel usually refers to the position of the sun at the winter or summer solstice, which seems almost like a reminiscence of the remote days, when pointer stones were set up to mark the sun's furthest deviation north and south, and general rejoicing announced the day when the point of sunrise commenced to return northwards.

Daniel commences his itinerary at Constantinople whence he went by sea to Jaffa, visiting on the way Ephesus, Cyprus, and several other places. His voyage appears to have been uneventful ; he carefully par-

ticularises the localities where various saints and holy men were buried ; mentions the "holy dust" that rises each year from St. John's tomb, and the cross suspended in mid-air above Mount Trodos in Cyprus, and describes the way in which storax is collected on the mountains of Lycia. From Jaffa he travelled by Lydda, which he found deserted ; and Nebi Samwíl, identified with Armathem (Ramathaim Zophim), to Jerusalem. On the brow of Mount Scopus, in full view of the Holy City, he dismounted to pray, and then, full of exceeding joy, proceeded on foot past the church and tomb of St. Stephen to the present Jaffa Gate where, under the shadow of the citadel, all travellers entered Jerusalem during the rule of the Franks.

The Abbot took up his abode in the Metochia, or "Pilgrim House" of St. Abbas, near the Tower of David, which was then occupied by Greek monks who had escaped from a recent massacre at the better known Laura of St. Sabbas, now Mar Saba. Under the guidance of a monk of the Laura he visited the holy places, and his description of their condition before the Franks carried out any extensive building operations is of much interest. His narrative is fuller than that of Sæwulf, who visited Jerusalem four or five years before him, and he mentions several minor "holy places," such as the "Pit of Jeremiah," the "House of Uriah," and the compounds of Judas and Paul, which are not noticed by the Anglo-Saxon pilgrim. The description of the Church of the Resurrection, the Holy Sepulchre, and the group of holy places round it, is discussed in Appendix II ; that of the Church of the Holy of Holies, now the "Dome of the Rock," is chiefly noteworthy for the statement that the building was the work of a Saracen chief named Amor, evidently a corruption of the name of Omar, the conqueror of Jerusalem. The legends gathered round the tomb of the Virgin in Cedron, and the church on Mount Sion, which was supposed to be the house of St. John the Evangelist, are detailed at some length, and they afford an interesting illustration of the class of information given by the Jerusalem guides of the early part of the twelfth century to pilgrims who belonged to the Eastern Church.

From Jerusalem Daniel made two excursions : the first to the Jordan and Dead Sea, during which he visited Jericho, and the Greek monasteries in the Jordan Valley, and the Wilderness of Judæa ; the second to Bethlehem, Hebron, where the Crusaders had not yet built their church, and the monastery of St. Chariton. After returning to Jerusalem from Hebron he obtained permission from Baldwin to accompany the force which was about to march against Damascus under the leadership of the king himself. The route followed by the troops seems to have been by Bireh, Lubbán Náblus, and Teisaír to Beisán, where some of the events connected with our Lord's life, including the healing of the two blind men, are localised. From Beisán the army marched to two bridges near the sources of the Jordan, which, according to Daniel, were two streams called Jor and Dan, that flowed from the Sea of Tiberias. The bridges appear to have been, that close to the point at which the Jordan now leaves the lake, of which traces can still be seen, and that known as the Jisr es Sidd, now in ruins, a

little below the junction of the two streams, "Jor and Dan," which then ran out of the lake and made an island of Kerak. The only other known site of a bridge is that of the Jisr Mujámiá, a short distance lower down the river; but in that case we should have to suppose that the Jordan and the Yarmuk were the two streams mentioned. When Baldwin crossed the Jordan, Daniel went on to Tiberias, and spent ten days in visiting the holy places on the borders of the Sea of Galilee; he does not appear to have been able to leave the immediate vicinity of the lake, and was only able to see the environs of the Baheiret el Húleh, which he identifies with the Lake of Gennesareth, from a distance. According to the Russian Abbot the Jordan commences at its exit from the Sea of Tiberias, and he notices that portion of it above the lake merely as a large river flowing out of the Lake of Gennesareth. From Tiberias, Daniel went to Mount Tabor, where he heard the curious legends connected with the cave of Melchisedek; Nazareth, where the Latins had already firmly established themselves; Cana of Galilee, and Acre. After resting four days at the last place, he journeyed southwards by Haifa and Kaisariyeh to Náblus; and so on by Bethel to Jerusalem.

After witnessing the ceremony of the descent of the "Holy Light," in the Church of the Resurrection, on Easter Saturday, 1107 A.D., the Russian pilgrim commenced his homeward journey. He travelled by the Convent of the Cross; 'Ain Kárim, the home of Zacharias, and the birth-place of John the Baptist; and 'Amwás, which has been laid waste by the infidels, to Jaffa; and thence by Arsúf, Kaisariyeh, Haifa, Tyre, and Sidon, to Beirút. Whether he embarked at Beirút or at Suédiah, the port of Antioch, is uncertain; but in either case he followed the coast pretty closely, and after having been robbed by pirates, off the Lycian Coast, near Patara, eventually reached Constantinople in safety.

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#### NOTES ON THE *QUARTERLY STATEMENT*.

THE Statement for October, 1887, shows that the work of the Palestine Exploration Fund is not falling off. Mr. Petrie's valuable casts have convinced Dr. Taylor (and I believe Dr. Sayce) of the existence of a Turanian element in Egypt, and of the Mongol origin of the Hittites. But these are not new ideas. As regards Egypt, we may refer to Rev. H. G. Tomkins's drawings in the "Life and Times of Abraham." As regards the Hittites, the late Dr. Birch, in 1882, pointed out from Rosellini's drawings the Mongolian character of the Hittites, and after seeing these beautiful designs I published my adherence to this view in 1883 in "Heth and Moab." The basis of my Hittite theory is thus accepted at length by many competent authorities.

The great Sidon find is illustrated by many known antiquarian facts. The horse led in procession (p. 202) recalls the horses in Etruscan tombs.

Horses were sacrificed at tombs in many parts of Europe and Asia, the horse sacrifice in India being reckoned of primary value next to that of human beings. The griffins and sphinxes are common to Akkadians, Babylonians, Egyptians, Phœnicians, Greeks, and Etruscans. Dogs seem to have had special importance, among the Phœnicians as among the Zoroastrians, but dogs' skulls have been found in Etruscan tombs. The fawn for which the centaurs contend might be connected with the fawn torn in pieces in honour of Dionysius. The water libations recall the common custom of pouring out water at funerals, or upsetting it on the occurrence of a death (compare the idea mentioned by Shakespeare of death depending on the tide). Perhaps the rite was symbolic of the abbing life. The colouring of the sculptures indicates perhaps an early date, though painted tombs occur in Byzantine times. There are many painted figures in Phœnicia, and the early statues found recently at Athens were painted. So were early Greek temples, while the painted tombs of Egypt and of Etruria hardly need to be recalled. It seems to me that the chambers *above* the chief interment are not likely to be later than the lower tomb, but the sarcophagi may of course have been placed there afterwards. Anyhow, the cemetery is as early as the Persian period. The fish-scale ornament of the lids has been noticed in several cases in Palestine and beyond Jordan. The find agrees with what is already known of the progress of Phœnician art. It is interesting to hear that the same ship bore to the Constantinople Museum a new Hitite text. Hamdi Bey, whom I have the pleasure of knowing, is the best curator the Museum has yet possessed, and the Turks will take care of the antiquities, the value of which they fully understand.

As regards the "boat-shaped graves" (p. 236), I think they should be compared with the anthropoid sarcophagi of Phœnicia, and with the wooden mummy cases in Egypt. The form follows that of the human body. The representation of the recumbent figure on the lid of sarcophagi developed, in Etruria, into a complete statue like those of mediæval monuments, save for the costume.

*Lydda and Anti-Christ.*—The legend of St. George at this place was fully treated some time back by M. Clermont Ganneau, but I quite believe it is founded on the old story common to Akkadians, Babylonians, Aryans, &c.

Page 238. Is it not rather an extreme view to say that the Greeks "borrowed their religious system from Egypt?" It is known that there is a greater Aryan element perhaps coming from the north, as Canon Taylor has pointed out at the last meeting of the British Association. There is also an element of Babylonian or Akkadian derivation, and a Phœnician element in the mixed mythology of Greece. Charon was probably not connected with Horus, but with the Etruscan Charun, "the black (or evil) god" of death.

Page 240. The name Baal Zephon can hardly be quoted as evidence, seeing that as early at least as 1600 B.C. there was a large Semitic element in the Delta. The Egyptian dictionary is full of Semitic words, as old as

the time of the Hyksos at least. The Phœnician influence in Egypt, before the Exodus, is an established fact generally allowed.

*City of David.*—I mean no disrespect to those who hold another view, and especially none to H. B. S. W. (by whose corrections I have often profited), when I say that the papers to which he refers seem to me to be inconclusive. I do not see any contradictions in the sentences of mine which he quotes. Perhaps they are obscure. I do not think Jerusalem was as large in David's time as in Hezekiah's, or as large in Hezekiah's as it afterwards became; but I think David's Jerusalem was larger than a fourth-rate Fellah village of our own times. I have expressed no opinions as to the dates of books of the Old Testament, but no scholar supposes the Book of Chronicles to be as old as the Book of Kings.

It is quite possible, of course, that I may be wrong as to the application of the term "City of David," but this remains a matter of opinion in the present condition of exploration in Jerusalem; and I have of late been very fully occupied with matters from which I think results of greater value may spring than would result, even if we all agreed how to understand this much debated term; Elizabeth, Bessy, and Bess (p. 252) are forms or corruptions of one word, but Zion, Ophel, Millo, and Akra do not appear to be forms of one word. Solomon's palace on Ophel was not in the City of David.

C. R. C.

## THE MARASH LION.

IN the Proceedings of the Society of Biblical Archaeology, Mr. Rylands has just given some excellent copies of the Hittite inscription on this lion from the cast in the British Museum. I differ in a few cases from his copy of certain forms, but anyone who has seen the cast will know how difficult it is to make sure of some of the forms on this very crowded text, and the copy, as a whole, is very reliable.

Mr. Rylands seems to regard the text on the left side as the only Hittite text in which the first line begins from the left, but the same is the case in the fourth Hamath stone, which there is every reason to regard as complete, and also probably in one of the texts at Ibreez.

Mr. Rylands does not attempt any decipherment, but it is encouraging to see, in his general remarks, the influence of the publication of "Altaic Hieroglyphs." He says the lion stood at a corner, and compares it with the great Assyrian lion standing close by. He also speaks of "compound emblems" as occurring in the text. These remarks will not, I believe, be found in any other work before my book was published. Mr. Rylands does not allude to the curious "included emblem," which is unique.<sup>1</sup>

<sup>1</sup> These "included emblems" occur not only in cuneiform, but also in a good many cases in Egyptian; but in Hittite they seem very rare—another indication of the early character of the Hittite script.



His drawing of a demon head I have verified from the east and find very correct. Speaking of the emblem accompanying the oft-repeated *altar*, he confuses, I think, two distinct Hittite signs, viz., C, which is usually a suffix, and IC, which is always a prefix. It is the first which is found so often attached to the altar, and which compound I read *Bar-d*, but the altar occurs without this suffix C = *d* (or *ak*), and when alone probably reads *Bar*.

C. R. CONDER

### REPLY TO CAPTAIN CONDER'S NOTES ON ZION.

IF silence gives consent, the opponents of Ophel being the site of the City of David are convinced of their error, and it only remains for me briefly to notice Captain Conder's objections in *Quarterly Statement*, 1887, p. 105.

1. He asks, "Is it certain that the words City of David are always used with the same meaning" in the Bible. I answer, without hesitation, Yes, as no evidence placing it elsewhere than on Ophel has yet withstood investigation.

2. He takes "the field of burial of the Kings," "the Garden of Uzzah, near Solomon's Palace on Ophel," to be a different place from "the Tombs of the Kings of Israel," *i.e.*, of David and other kings. Here are several mistakes.

*a.* The "field" and the "garden" were distinct places. For Manasseh was buried "in his house," or "in the garden of his house, in the garden of Uzzah." This house or palace was that built by Solomon near the Temple (within the "enclosure of Herod's Temple," "Handbook," 340), but "the Sepulchres of David," which Captain Conder (106) takes to be equivalent to this "field of burial," were not only, as he admits, on Ophel, but also between the Pool of Siloam and the pool that was made (Neh. iii, 15, 16), and so certainly not north of the Virgin's Pool. In other words, Manasseh's tomb was at the north end of Ophel, so called, and Uzziah's towards the southern side, so that the two localities were quite distinct.

*b.* Captain Conder admits that the field of burial where Uzziah was buried was on Ophel, but 2 Kings xv, 7, states that he was buried with his fathers in the City of David. Therefore the City of David was on Ophel, and my position is proved by Captain Conder himself. This mistake of his, which I pointed out six years ago (1881, 95), seems to show that "disputants retain their opinions," probably because they do not carefully examine the evidence bearing on the question under discussion, even to comparing *Chronicles* with *Kings*.

But further, Uzziah was buried with "his fathers." As all the kings after David and Solomon downwards to Uzziah, with only one exception,

are all said (see H. B. S. W.'s table, 1882, 266) to have been buried "with their fathers," we have a distinct Biblical assertion that they were all buried together in the same locality, though not all in the same sepulchres.

Therefore, *volens volens*, Captain Conder is forced to admit (if argument influences him): 1, that David was as much buried on Ophel as was Uzziah, and (2) that the Sepulchres of David (Neh. iii, 16), need not mean anything else than the place where David was actually buried. The fact is the southern part of Ophel was the cemetery for good and bad kings alike down to the time of Manasseh.

3. When Captain Conder says that there is no doubt that Akra was west of the Temple, he makes a statement directly contrary to the whole testimony of Josephus, as I showed (*Quarterly Statement*, 1886, 26). Here, again, I must suppose that he has not read my remarks on his theory.

4. Captain Conder's energy seems to waste itself in opposing a theory which places David's capital on the little spur of Ophel. Let me say once for all, that (in these pages) no one has ever advocated such a theory. It is a chimera of Captain Conder's own invention. He has indeed attributed it to me and also to Professor Sayce, but both of us have distinctly repudiated it. My theory is, that even in the time of Joshua, Jerusalem occupied ground on both sides of the Valley of Hinnom (*i.e.*, the Tyropæon), being both in Judah and Benjamin, and therefore was not confined to Ophel, while Professor Sayce includes the temple hill in his Jerusalem of David's time, though wrongly, I admit. If, ceasing to fight with his own shadow, Captain Conder will turn his attention to the arguments of H. B. S. W., and to mine, perhaps we shall soon have the aid of his pen against other errors.

5. Captain Conder thinks that no engineer would be able to agree that a fortress could have stood on Ophel. I can forgive one of my cloth (Canon Tristram, 1885, 107; 1886, 34) falling into error on this point: but, O ye heroes of Rorke's Drift, what think ye of a R.E. rejecting Ophel as indefensible, when with time and stone without stint, a position that with a wall of 50 feet high would not on any side be overtopped within 400 feet, is condemned off-hand as untenable?

What, I ask, at a distance of 400 feet, had a stone fortress in David's time to fear from bows, slings, and javelins, and even all Jonathan's artillery? The answer must be, Nothing.

6. Access to the Gihon spring, Captain Conder takes to have nothing to do with the position of the castle (of) Zion, as other fortresses were often far away from the nearest spring. Exactly so, and all the other fortresses in the mountains were accordingly captured, while Zion for four centuries remained secure, and was only at last taken by treachery. Even Antiochus the Great could not take Rabbath Ammon, until its water supply was cut off. In opposition to Captain Conder I may quote the words of Sir Charles Warren in 1879: "The strongest point to my mind in favour of Ophel having been the ancient site of the Jebusite city is the fact of the one spring of water being found there. I have carefully noted the manner in which the Kafirs have located themselves close to water

in their various strongholds, and I think, that, unless there were very urgent reasons, the Jebusites would have located themselves near what is now called the Virgin's Fount."

It seems hardly fair that Captain Conder should bear the whole burden of fighting against the truth. Will none of those who hold somewhat the same opinions, as Canon Tristram and Sir C. Warren, or who spread his Jerusalem errors, as Mr. Henderson in his "Palestine," do justice to their views by trying to defend them in these pages? A little investigation would, I hope, reveal to them how greatly one is misled by taking Jerusalem sites on trust.

W. F. BIRCH.

## THE CITY OF DAVID.

### III. ZION, SOUTH, NOT NORTH OF THE TEMPLE.

Fergusson, followed by Thrupp (and Lewin partly), placed Zion rightly on the eastern hill, but wrongly north of the Temple.

Let me briefly point out the unsoundness of the arguments alleged in favour of this northern site.

1. He quotes Psalm *xlvi*, 2, "Mount Zion, on the sides of the north, the city of the great king." These words seem to me too ambiguous for any argument to be built upon them. Thrupp (*Jerusalem*, 19) refers to the Prayer Book version: "Upon the north side lieth the city of the great king," which, he adds, "may be taken as identical with the City of David." If Hebrew scholars will agree that the original words *must* mean that the city lieth on the north side of Mount Zion, and cannot mean that Mount Zion is on the north side of the city (as I interpret them), the supporters of the northern site are welcome to have this passage in their favour.

2. On this verse Fergusson quotes the Rabbis from Lightfoot as in his favour, but he errs with Lightfoot (as they are really against him), overlooking the distinction between *Zion*, the City of David, of the historical books of the Bible, and Mount Zion which always, in *I Macc.*, means the Temple hill (*xiv*, 27, compared with 48), if not in the Bible.

Lightfoot, with Psalm *xlvi*, 2, compares *Isaiah xiv*, 13: "I will sit also upon the mount of the congregation (*i.e.*, Mount Zion) in the sides of the north," and *Ez.* *xl*, 2, "He set me upon a very high mountain, by which was as the frame of a city on the south." He then quotes the Rabbis thus: "Aben Ezra, Mount Zion is on the north side of Jerusalem; Lyranus, Mount Zion is in the north part of Jerusalem; Kimchi, the Temple, was to be built on a mountain as before, and the City of Jerusalem is near it on the south;" and Lyranus again, "the Temple was in the north part, but the city in the south part." Lightfoot, however, not observing the above distinction, adds, "Behold! reader, Zion (he ought

to have said Mount Zion) on the north, in the Psalmist, and the city on the south part, in the Prophet." Elsewhere, Lightfoot makes the same mistake: "The mountain of the Temple will be found lying northward of Jerusalem," and he adds, "and Zion northward of the mountain of the Temple." See also prospect of the Temple: "Mount Moriah, this mountain seated in midst of Jerusalem . . . . on the south Jerusalem; on the north side lay Mount Zion."

Thus, while the Rabbis say that Mount Zion (*i.e.*, the Temple) was north of Jerusalem, and the city south of the Temple (*i.e.*, Mount Zion), and only refer to *two* places; Lightfoot goes wrong making *three* places out of the *two*, through not discerning that Mount Zion was identical with the Temple, as in 1 Macc.

Thus the appeal to the Rabbis is *against*, and not in favour of, the northern site for the City of David.

3. Thrupp says, "That the Acra of Antiochus (*i.e.*, the City of David, 1 Macc. i, 33) stood to the north of the Temple, can hardly admit of question. Josephus, who is a competent authority on this point, tells us that it overlooked, or rather, overlay the Temple." Unfortunately, however, for this argument Josephus shows that he is *incompetent*, for he contradicts 1 Macc. (his authority for these times), and makes Nicanor go *down* from the Acra to the Temple, although 1 Macc. says distinctly that he went *up*. This northern theory is simply baseless. I have shown that the Rabbis are not its friends but its foes; that when it rests on Josephus, he contradicts 1 Macc. vii, 33. For it to agree with the Bible, Neh. iii must be chopped into pieces and pieced afresh, and, according to Thrupp, "David" altered into "Solomon," in Neh. xii, 37.

But here, against Fergusson (Temple of the Jews, 53), I maintain that Neh. iii is an *orderly* (1879, 176) description of the wall. The order of the verses is as important as the order of figures in a sum. Against Thrupp (Jerusalem, 172) I maintain that the "the House of David" cannot mean the Palace of Solomon, which stood not on the south-western, but on the eastern hill, and with which David had nothing whatever to do.

Indeed, in his last book (Temples of the Jews), Fergusson is willing to accept Ophel as an alternative site for the Sepulchres of David which were in "the City of David," while Thrupp and Lewin are inclined to admit that this term afterwards extended to the part south of the Temple. For 2 Chron. xxxiii, 14, which Thrupp claims, I must refer the reader to *Quarterly Statement*, 1885, 104.

I have already proved directly that the City of David was south of the Temple (1885, 100, 208; 1886, 26). I must also now claim to have proved this by the exhaustive process, for as it has been shown that there is no proof that it was *west*, or *south-west*, or *north* of the Temple, it only remains for it to have been *south*, the only other possible site, and this has again and again been demonstrated to be the true site. Therefore Zion, the City of David, was on Ophel.

## IV.—ZION, NOT JERUSALEM IN GENERAL, IN THE HISTORICAL BOOKS.

This broad view, which allows every site to be right, except the correct one, needs but little notice. It meant to make things pleasant all round, by telling each combatant his site was true, and could be proved by sound argument.

(1) As I have shown that there is no evidence for the western or south-south-western or northern position for the City of David, while there is abundant evidence for the Ophel site, it is to be hoped we have heard the last of this greatest of imposters.

(2) It may be urged that the LXX in one passage substitutes Zion for Jerusalem (1884, 198), and that Josephus always substitutes Jerusalem for the City of David in speaking of the burial of the kings.

To this I would reply that Zion in the prophetic books often seems to be equivalent to Jerusalem, so that it might easily be interchanged for Jerusalem in the LXX, though possibly the translator in 1 Kings, viii, 1, may have made the change accidentally, or to show off his topographical knowledge.

Josephus, on the other hand, merely sacrificed precision by the alteration he made, and being perhaps perplexed thought this the best way out of his difficulty.

(3) It is urged that Josephus (*Ant.* VII, iii, 2) says that David called Jerusalem "the City of David." I ask—Whence did Josephus obtain this information? And if it is said he obtained it from 2 Sam. v, 9, then (in *Quarterly Statement*, 1886, 29) I showed how very far his paraphrase is from being true to his text.

I now claim to have proved beyond fear of refutation, that Zion, the City of David, was solely and entirely on Ophel.

Contradiction, without either argument or any attempt to meet the evidence I have brought forward, I take to reflect not on my theory, but on the intelligence of the opponent, as condemning a theory which he cannot upset.

To the map-makers I make my humble request that they will not for the future perpetuate a glaring and flagrant falsehood by ever writing the name, "the City of David," at Jerusalem, anywhere except on the hill south of the Temple.

W. F. BIRCH.

## NEHEMIAH'S NIGHT-RIDE.

THE topography of ancient Jerusalem is a very perplexing question, and in studying it, while nothing is more helpful than to compare the third chapter of Nehemiah with the twelfth, nothing is more vexing than to find that even the two accounts taken together are insufficient. They may, however, be supplemented, to some small extent, by Neh. ii. 13-15: "I went out by night by the valley gate, even toward the dragon's well,

and to the dung gate, and viewed the walls of Jerusalem, which were broken down, and the gates thereof were consumed with fire. Then I went on to the fountain gate and to the king's pool: but there was no place for the beast that was under me to pass. Then went I up in the night by the brook, and viewed the wall; and I turned back, and entered by the valley gate, and so returned."

I have always been inclined to fancy that Nehemiah left the city by the Jaffa gate, rode southward, made a vain attempt to ascend a re-entering angle at the Tyropoan valley, and retreating thence followed the brook Kedron northward, turned to the left at the N.E. corner of the city by the sheep gate, and thus got back to the Jaffa gate, after making the circuit of the city. But the valley gate may not be the Jaffa gate, and if Neh. iii, 13, means that the dung gate was only 1,000 cubits from the valley gate, it cannot be so. We have the dung gate bearing the same name still, and with the sewage flowing out near it. Taking this as a fixed point, the gate 1,000 cubits west of it is the gate of David. I will only assume, therefore, that Nehemiah left the city through some gate near the south-west corner. He then made towards the *dragon's well*. This we may probably identify with the Virgin's fountain, seeing that this fountain has been called the well of the dragon, and the well of the sun, and a common legend explains the intermittent flow of the water by declaring that a dragon lies within it who wakes and sleeps. When awake he stops the water, but when he sleeps it flows. (By the way, it seems worth remarking that in the myth of Cadmus the well of Ares was guarded by a dragon, which the hero killed.) Having come near to this well—towards it, but not unto it—Nehemiah bent his way northward to the dung gate. I conceive that the fountain gate and the king's pool, which he came to next, were situated in that part of the chine which is now within the city wall, and filled with *dibris*. In Nehemiah's time it was so far from being filled that the entrance to the sepulchres of the kings was visible, and so far from being on a level with the ground east and west of it, that pedestrians in passing from one hill to the other had to make use of the stairs that went down from the City of David (see Neh. iii, 15; xii, 37).

Two or three things deserve mention here:—(1.) Such a re-entering angle appears to be required in order to find room for the length of the wall as indicated in Nehemiah's descriptions, for without this the many places mentioned will seem to be too crowded together. It is because there is such a sinus that the first company, in chap. xii, forsake the wall, and make use of the stairs of the City of David, after which they get on to the wall again. They may forsake the wall and take the short cut, either to reduce their journey to the same length as that of the second company, or possibly because that inner part of the wall was not broad enough to walk upon, or was not yet completely repaired.

(2.) The passages favour the idea that the City of David was on the eastern hill. The stairs "go down from the City of David," yet the

company goes up by those stairs in a journey which seems to begin somewhere near the Jaffa gate, and end at the Temple.

(3.) The obstruction to Nehemiah's progress seems to be accounted for by the nature of the spot. There being two walls running parallel to one another for some distance along the sinus, the destruction or dilapidation of both would result in double heaps of ruins in a narrow space.

(4.) It will be observed that the greatest desolation is found on the south side of the city, as though the last assault had taken place on that side. Nehemiah surveys the southern walls and gates first—surveys them leisurely—mentions one spot after another, and the impossibility of getting along; and then hurries over his journey by the brook and round the north of the city homeward. The impression we thus get of greater destruction on the southern side is confirmed by the description of the work of restoration in chapter iii, where it would appear that a larger number of independent workers find occupation on the southern side than on the northern. It is generally assumed that because the northern part of the city afforded higher ground, from which the assault could be delivered more easily, that, therefore, the city would always be assaulted on that side, and the southern and south-eastern parts would not suffer much. But even supposing this to be so during the actual assault, the conqueror might take all the more delight in demolishing afterwards the walls which had defied him.

GEORGE ST. CLAIR.

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## SEPULCHRES OF THE KINGS.

Why should not excavations be made at Jerusalem with the direct object of finding the tombs of David, Solomon, and their successors? The area of search would be limited, for most of the kings were laid to rest "in the City of David."

1. We may assume that the tombs would be excavated in the hill-side. In a country so rocky as Palestine, the dead could not be buried in the soil as a general rule, for the soil would be absent and an excavation must be made. Tombs could be excavated in the side of a hill with less labour than from the upper surface, and would be more accessible.

In ancient Egypt tombs were built of brick and stone, or hewn in the rock, according to the position of the necropolis; and whenever the mountains were sufficiently near the latter was preferred (Wilkinson's "Ancient Egyptians," chap. x).

Tombs thus excavated in the hill-side may be seen at Jerusalem, on the eastern side of the valley of Jehoshaphat.

At the so-called Tombs of the Kings, north of the city—the most noticeable sepulchre at Jerusalem, and regarded as the tomb of Helena, Queen of Adialene—a trench is indeed sunk in the rocky level, and a large court also, open to the sky; but this artificial hollow is made for the

purpose of *obtaining* a hill-side where none existed, and the tombs are then excavated laterally.

The graves in the modern cemeteries at Jerusalem may be dug in the soil, but this exception is not to the point, because the "soil" is artificial *debris*, which has accumulated since the days of the early kings of Judah. Where the Mohammedan cemetery exists, under the east wall of the Haram Area, Sir Charles Warren found loose stone chippings and other rubbish to a depth of 70 or 80 feet; but on various parts of the rocky bottom the remains of stone walls, showing that the rock at one time formed the surface.

The Scripture statement that the kings were buried *in* the City of David is not inconsistent with the idea that the sepulchres were excavated from the outside; for the bodies, though carried out of the city for burial, and deposited in the rocky chamber, might very well be under the city streets, perhaps under the royal palace, and accessible by a shaft from the palace grounds.

2. The valley in which the tombs were cut would be some part of the Tyropœan, so that the area of search need not be very large. Much of the ground, fortunately, is accessible, either lying outside the walls, or covered only by cactus gardens within.

Certainly there is the moot question, on which hill was the City of David? and until this is decided we cannot tell whether we should keep to the eastern or the western side of the valley in our search. The Egyptians preferred western hills for their tombs, because they afforded a face to the east. The necropolis of Thebes was on the western side of the Nile. The temples built in front of a pyramid, for the worship of the king, and the *mustabds* erected above ordinary tombs have their entrance always from the east. We cannot be sure that the Hebrews would follow this example, but their temple on Mount Moriah opened to the east.

In the excavation made by Queen Helena, also, the portico is on the west side, and so, of course, is open to the east. On the other hand, some of the tombs on the eastern side of the Kedron Valley open to the west.

3. It is quite feasible that the tombs and the sarcophagi, perhaps even the bodily remains, should be found. They are not yet 3,000 years old, and we have recovered and identified the mummies of Egyptian monarchs of much older date. Wilkinson reminds us that the custom of embalming bodies was not confined to the Egyptians. "The Jews adopted this process to a certain extent, 'the manner of the Jews' being to bury the body 'wound in linen clothes with spices,' as Lazarus was swathed in bandages." We have no historical account of the sepulchres having been disturbed. While the Kings of Judah were in power the tombs of their ancestors would be safe, and after the accumulation of *debris* in the valley the mouth of the cave or excavation would be covered and hidden. Besides, even when tombs are rifled and bodies stolen, stone coffins remain, and inscriptions abide to tell us of the past—as we see by the sarcophagus of Cheops in the heart of the Great Pyramid. Think of the



intense interest that would attach to the discovery of David's tomb, with an inscription in the oldest form of Hebrew ever found!

4. Might not this question be submitted to a committee of experts who should decide upon the most promising points for probing the ground?

GEORGE ST. CLAIR.

## THE SAMARITANS.

I. *Their Numbers.*—There appears to be some mistake abroad concerning the actual number of the Samaritans, and this, of course, affects the question of the probable survival of this interesting people for a longer or a shorter time. In Dean Stanley's "Lectures on the Jewish Church," Part I, Appendix II, mention is made of "the whole community—amounting, it is said, to 152, from which hardly any variation has taken place within the memory of man." This was during the Prince of Wales' visit to Palestine in 1862, and it does not lead us to expect any early decline. But Captain Conder, in "Tent-work in Palestine," assures us that year by year the Samaritans are dying out. "Clinging to Shechem and the Holy Mountain, they are the last left of the nation which in the fifth and seventh centuries spread far over Palestine and Egypt." "In 1872 the little community numbered 135 souls, of whom no less than 80 were males. The Moslems say that the number is never exceeded, and that one of the 80 dies as soon as a child is born. By the defection of Jacob Shellaby with his family they have been reduced to a total of 130 souls."

A decline of 17 souls in ten years—reducing the numbers from 152 in the year 1862 to 135 in the year 1872—would bring the numbers down to 110 in 1887, if the decline continued, and end in the speedy extinction of the race. On a recent visit to Nablus I made inquiry on this point, and my questions were put to the High Priest himself. His reply was that his people numbered from 96 to 100, but this (he said) was without counting certain women and children, who might bring up the number to 165. If these women and children were included in Dean Stanley's estimate, there would appear now to be some increase in the number of souls; but if they were not taken into account either by Dean Stanley or Captain Conder, it would seem that the decline of the little community is proceeding at an accelerated pace.

II. *The Ancient Copy of the Law.*—Travellers have spoken of the great difficulty they experienced in obtaining a sight of the most ancient Samaritan roll. In 1865 it was considered a great favour, I believe, shown to Sir Charles Wilson, that he should be allowed to photograph it for the Palestine Exploration Fund. Captain Conder describes the difficulties raised, in a later year, when he and Mr. Drake visited the Synagogue. The High-Priest Amram first brought out the latest scroll—written in black ink on parchment, rolled on two rollers, and enclosed in

two cylinders of brass—and affected to be surprised when Mr. Drake asked to see the next. They did see the next, which was of older appearance, also in a brass case, with huge knobs to the rollers. The High Priest and his nephew Jacob now declared that there was no older scroll, but Mr. Drake knew that there was, and eventually they succeeded in seeing it. It is kept in a silver case, and purports to have been written by “Abishuah, son of Phinchas, son of Eleazar, son of Aaron the priest, in the thirteenth year of the possession by the children of Israel of the land of Canaan and all its boundaries.”

Captain Condor found that the priests manifest the greatest reluctance to showing this sacred relic; it is a Samaritan Fetish, and is only seen by the congregation once a year, when elevated above the priest's head on the Day of Atonement.

I suppose, therefore, that the priests have adopted a new *ruse* to throw the curious off their guard, and that I and my companions were too credulous on our recent visit. We were shown first a book of the Law in volume form, which was said to be 750 years old. Next, an older looking copy, a *roll*, asserted to be 1,260 years old. Lastly, a roll in a silver case, which we were assured was written by Abishua, the great-grandson of Aaron, 3,472 years ago. I only carried in my mind that the first and second copies usually shown to travellers were comparatively modern, and I must insist on seeing a third; I did not remember that all three were to be *rolls*. And when the High Priest declared on his word that the third book which I had seen was really the oldest they possess, I thought probably he was to be trusted. I was a little surprised that he should sell me a photograph of himself, holding this roll open; but I supposed that a good deal of reticence might have disappeared since 1865, and *backsheesh* was year by year proving more potent.

I may mention that the silver case which contained the oldest copy of the Law shown to us was covered with engraved symbols, among which I noticed the cherubim (which appeared to have the head and wings of a bird): “Aaron's rod,” which was quite a tree, and very much like the conventional tree of mythology; and the “flames from the altar,” which had a conventional form, such as is seen in hieroglyphics. This silver case, we were told, was 300 years old.

GEORGE ST. CLAIR.



THE  
PALESTINE EXPLORATION FUND

NOTES AND NEWS.

With this number is completed the "Survey of the Jaulân," by Herr Schumacher. The work was originally executed for the German Palestine Exploration Society, and published in their "Zeitschrift." We have been enabled to translate it by the kind permission of the Committee of that Society, and have obtained from Herr Bäderer all the blocks for the illustration of the work.

It has been printed with large margins, so that while it is uniform with the *Quarterly Statement*, and may be bound up with that journal, subscribers may detach it and have it bound in the same form and size, and with a similar cover, as Captain Conder's works.

The Committee will be happy to exchange bound copies for the unbound copies presented with the *Quarterly Statement*, at the price of 1s. 6d. each, to cover binding and postage.

With the July or the October number will be presented Herr Schumacher's Survey of Pella, the city to which the Christians fled on the outbreak of the troubles in Jerusalem. There are many drawings and plans to accompany this memoir.

Herr Schick follows up his paper on the discovery of Constantine's Pavement with Notes which demand careful attention. Sir Charles Wilson has added remarks upon these Notes, which separate theory from fact. It is greatly to be hoped that the Russian Society will carry on this work, which is upon their own ground. The discovery of the two pavements, the supposed ditch of the second wall, the granite columns, open up questions of the highest importance.

The List of Old Testament names and identifications was issued last year. That of New Testament names, which contains the references in Josephus to the New Testament places, is nearly ready. It will be issued before the end of April. Subscribers can have copies of the latter, separate, at 1s., and of the two together, in paper cover, for 3s., and bound for 3s. 6d., by application to the office only. To the general public the price of the book will be 6s. 6d.

Meantime, with the view of clearing off the MSS. which await publication, the Committee have resolved on issuing an edition in form similar to, and uniform with, the "Survey of Western Palestine," of the following works:—

1. Conder's "Survey of Eastern Palestine," so far as completed. The MS. is very voluminous, containing as much as will make a volume equal in size to those of the "Memoirs" in the "Survey of Western Palestine." None of it has been published; the drawings are very numerous, and of the deepest interest to the student of prehistoric monuments, as well as for the illustration of the Bible.
2. The Archaeological Mission of M. Clement-Ganneau, with the drawings of M. Le Comte.  
These drawings are many hundreds in number, and executed in the finest style. They figure a vast number of monuments and ruins not in the "Memoirs."
3. The Flora and Fauna of the Wady Arabah, by J. Chichester Hart, Esq., accompanied by many drawings of plants, &c., in the best style.

The editions will be limited to 500. The first 250 subscribers will pay seven guineas for the three volumes; subscribers to the "Survey of Western Palestine" will be privileged to have the volumes for this sum. The price will be raised, after 250 names are received, to twelve guineas. The Committee are pledged never to let any copies be subscribed under the sum of seven guineas. Mr. A. P. Watt, 2, Paternoster Square, is the agent.

The Director of the Palestine Pilgrims' Text Society promises the following works for the year 1888:—

The Pilgrimage of the Abbot Daniel—now ready.

The Norman-French Description of the Holy Land and of Jerusalem—ready in May.

The Travels of Nasîr-i-Khosrau, translated by Mr. Guy le Strange—in June.

Arculfus de Locis Sanctis, translated by Rev. R. Macpherson—in June.

Two Letters, from Sir Joseph de Lancy, Knight Hospitaller, to King Edward the First, endorsed "News from Syria," and from the King to Sir Joseph.

The Report and Balance-sheet of this Society for the last year are now ready. Readers will note that the library it is forming of pilgrims, geographers, and historians is quite unique, and cannot be procured except by subscribing to the Society.

The friends of the Society are earnestly requested to use the "Memoirs of Twenty-one Years' Work," as a means of showing what the work has been, and what remains to be done.

An announcement was recently made in the papers to the effect that among the Sidon sarcophagi, was one containing the body of Alexander the Great. So far the news is not confirmed, and there seems every reason to doubt the fact, unless the details given by the historians are all wrong.

Subscribers are very earnestly asked:—(1) To pay their subscriptions early in the year—say in January. (2) To pay them direct to Coutts and Co. by a banker's order. (3) If they would rather choose their own time, to send us their subscriptions without being reminded. The Clerical Staff of the Society is small; it is most desirable not to increase it; and if these simple requests be attended to a great saving of clerical labour, postage, and stationery is effected. For instance, there are, say, 3,000 subscribers. If every one of these waits to be reminded, and has to have a receipt sent to him, the Society has to spend £25 a year in postage, and to write 6,000 letters, merely to ask for and to acknowledge the receipt of the subscriptions.

The following books are now published uniform in size and appearance:— Conder's "Tent Work;" Conder's "Heth and Moab;" Schumacher's "Across the Jordan;" "The Memoirs of Twenty-One Years' Work;" Conder's "Syrian Stone Lore;" Conder's "Altaic Inscriptions," and Schumacher's "Jaulan." Subscribers can have the whole set, together with Hull's "Mount Seir," and Names and Places, for 32s., carriage free.

Mr. Armstrong has prepared a list of the photographs belonging to the Society arranged alphabetically according to those Bible names which are illustrated by views. This list is now ready. Those who wish for a copy may send in their names.

The income of the Society, from December 14th, 1887, to March 21st, 1888, inclusive, was—from subscriptions and donations, £492 3s. 3d.; from all sources, £971 12s. 1d. The expenditure during the same period was £864 15s. 5d. On March 23rd the balance in the Banks was £328 6s. 6d.

Subscribers who do not receive the *Quarterly Statement* regularly, are asked to send a note to the Secretary. Great care is taken to forward each number to all who are entitled to receive it, but changes of address and other causes give rise occasionally to omissions.

While desiring to give every publicity to proposed identifications and other theories advanced by officers of the Fund and contributors to the pages of the *Quarterly Statement*, the Committee wish it to be distinctly understood that by publishing them in the *Quarterly Statement* they neither sanction nor adopt them.

The only authorised lecturers for the Society are—

- (1) Mr. George St. Clair, F.G.S., who has lately returned from his Eastern tour, and is giving Lectures for the Society in all parts of Great Britain. His subjects are—

- (1) *The Buried City of Jerusalem*, and General Exploration of the Holy Land. Numerous diagrams.
- (2) *Buried Cities of the East*. Numerous diagrams.
- (3) *Sight-seeing in Palestine*. Lantern views, where local help can be obtained.

Address: G. St. Clair, Bristol Road, Birmingham; or at the Office of the Fund.

- (2) The Rev. Henry Geary, Vicar of St. Thomas's, Portman Square. His lectures are on the following subjects:—

*The Survey of Western Palestine, as illustrating Bible History.*  
*Palestine East of the Jordan.*  
*The Jerusalem Excavations.*

*A Restoration of Ancient Jerusalem.* Illustrated by original photographs shown as "dissolving views."

- (3) The Rev. James King, Vicar of St. Mary's, Berwick. His subjects are as follows:—

*The Survey of Western Palestine.*  
*Jerusalem.*  
*The Hittites.*

*The Moabite Stone* and other monuments.

- (4) The Rev. James Neil, formerly Incumbent of Christ Church, Jerusalem.

## TREASURER'S STATEMENT.

Subjoined is the Balance Sheet for the year 1887. It will be observed that under the head of Management only £407 5s. 7d. has been expended; this is much less than heretofore in consequence of the Secretary having drawn no salary. Under the new arrangement Mr. Armstrong becomes Assistant Secretary. The management expenses will amount to about £500.

The amount spent on Exploration shows that the work of the Committee is still actively carried on.

The Society has agents in the country who neglect no opportunity in pursuing those investigations, the results of which are given to subscribers in the *Quarterly Statement*.

The income of the Fund from the sale of their books now amounts to a considerable sum. The great excess of expenditure over receipts under the head of "Printers, &c.," is due to the cost of the *Quarterly Statement*, the publication of which is necessary for the very existence of the Society. It also includes the postage of the *Statement* for the year.

## BALANCE SHEET FOR YEAR ENDING 31st DECEMBER, 1887.

RECEIPTS.				EXPENDITURE.			
	£	s.	d.		£	s.	d.
Balance, 31st Decem-ber, 1886 .. ..	322	11	0	Management .. ..	407	5	7
Donations, Subscrip-tions and Lectures..	1,572	9	11	Exploration .. ..	647	14	0
Maps and Memoirs ..	280	10	4	Printers and Binders ..	942	4	0
Books .. ..	369	10	3	Maps and Memoirs ..	337	3	7
Photographs .. ..	5	1	5	Balance, December 31st, 1887 .. ..	215	15	9
	<u>£2,550</u>	<u>2</u>	<u>11</u>		<u>£2,550</u>	<u>2</u>	<u>11</u>

In other words, the total expenditure was £2,334 7s. 2d., of which exploration took 27·7 per cent.: publication, 54·8 per cent.: and management 17·5 per cent.

As regards the present financial position of the Fund, we have already this year lowered the liabilities in the account of printers, binders, and lithographers by nearly £500—under this head we have a debt which is always being diminished and always increasing.

The debt of £850 has been reduced by £150.

The accumulated mass of memoirs which has been so long waiting for publication will, it is hoped, be all issued before the end of the year in an edition limited to 500 copies, uniform with the *Survey of Western Palestine*.

But new materials are always coming in, and subscribers who ask what the Society is now doing are reminded that it is not the accumulation of facts alone that is wanted but their publication.

WALTER MORRISON,  
*Hon. Treasurer.*

## NEW EXCAVATIONS IN JERUSALEM.

## I.

*Jerusalem, February, 1888.*

IN October, last year, I sent the Palestine Exploration Fund some drawings, with notes, of the old "Market" to the south-east of the Church of the Holy Sepulchre. They were published in the *Quarterly Statement* for January, 1888, page 17, and I now send plans and sections of what was found to the north of the old "Market."

Plan No. 1.—At the bottom, on the left side, is part of the present *Sâk*, or Market. North of it is the street, *Khan ez-Zeit*, running to the Damascus Gate, or *Bib el-Amûd*. Along this street there are shops; and at the north end of the plan are steps, and a raised road, passing over arches westwards to the Coptic and Abyssinian Convents. Near these steps are three granite columns, broken, but still *in situ*; a fourth was removed about twenty years ago, when a door was broken through the wall to make a wood-store. There are also some remains of a pier or stone jamb; and this, with the columns, formed in the Byzantine period the "Propylæum" of Constantine's Church; the columns probably extended farther north, but this cannot be ascertained on account of the buildings.

The wall which now closes the space between the columns was apparently built by the Crusaders. The open area between the columns and the east wall of Constantine's Church was vaulted as it is now. At the south end of the vault, which shows traces of restoration, there is an old wall, partly Jewish, but principally Byzantine.

At the bottom of this wall there is the ancient "threshold" (*see* Sect. 2); it is one stone, with a tread little more than one inch high, for the folding doors to shut against. The "threshold" of an ancient door is certainly Jewish, and in the Byzantine time it was used again as a door; but it opened (unexpectedly) outwards, proving that the open Propylæum could be shut up against the court of the Church. The lower part of the western wall of the Propylæum is of Jewish masonry, with drafted stones; higher up it is of Byzantine masonry, which can be well seen in the houses to the north; it formed the east wall of Constantine's Basilica. The southern wall of the Basilica was also built on old Jewish masonry, which forms a slightly obtuse angle with the east wall. This angle and the lowest course of stones in the wall are Jewish; the stones of the upper courses are smooth, smaller, and Byzantine. On the north side of this wall stone corbels were inserted at a later time (perhaps by the Crusaders), in order to vault the space. In the parallel wall to the north there are similar corbels. The Byzantine building, according to Eusebius, had no vaults or arches, but was roofed with timber, &c. South of the southern wall of the Basilica is a fine platform,<sup>2</sup> paved with very large

<sup>1</sup> The old market has been pulled down and no trace of it can now be seen.

<sup>2</sup> About seven feet above the surface of the street *Khân ez-Zeit* to the east. The rock is very near the surface of this upper platform.



flat smooth stones. On the north part was an open passage beside the Church; on the southern part a cloister or covered passage. From this raised platform, broad steps lead down to a similarly paved platform, nine feet below, and to the old gate. (*See No. 3.*)

Some traces of rock-hewn steps can still be seen. In the Russian part of the vault, on the site of the Propylæum, a pavement was found, formed of large stones, from 1 foot to  $1\frac{1}{2}$  thick, more than 3 feet long, and 2 feet 6 inches to 2 feet 8 inches wide, nicely and exactly laid, with good joints; the upper surfaces are very smooth, as if originally polished. This pavement extends southwards to the street *Eld-Dabbaghin*, or as far as the place was cleared of ruins, stones, and earth; it probably extends further south, and perhaps also to the east. It has a fall towards the south, so that the water could run into the rock-hewn sewer, or, further south, to the masonry sewer. (*See Nos. 1 and 2.*) About the middle of the pavement is the so-called "Greek Arch," known for many years and figured in books about Jerusalem.<sup>1</sup> The north pier is apparently Byzantine, built of smooth and well-cut stones, which are much damaged by age. The south side is formed by a column with a block capital, unlike the one on the pier. This has puzzled everyone, and given the impression that it is a reconstruction and not the original arch! Yet the column may be genuine with a wrong capital upon it. In this case the column must have stood in the centre, and the whole have formed a double arch. So the Russian Archimandrite understood it, and he intended restoring the arch according to his view. He built a new pier to the south, prepared a Corinthian capital, &c.; but, on closer examination, I found there had been only one arch, and no column. It is quite clear that the northern pier was once broader (as shown in Nos. 1 and 2). No 2 gives, in elevation, the number and size of the stones where the joints do not run through.

I have shaded the older or Byzantine portion, and am convinced that the southern pier originally had the same form and size, and that the Corinthian capital, which carries one side of the arch, stood on the southern pier, like the one on the top of the northern pier. In the Byzantine portion there are five courses of stones from the pavement to the spring of the arch; I cannot tell the thickness of the missing abacus, but the curve of the arch can still be seen (in No. 2). In place of the abacus there is now a stone, with mouldings on its face, which I think must have been the key-stone. The key-stone certainly had some ornament; it was probably broken by the falling of the arch, and then chiselled to fit its present place. In accordance with these indications, I have restored the arch in No. 3. The arch probably had an attic, which I have not attempted to restore. The entrance to the passage is 12 feet 8 inches wide, at the centre it is 14 feet wide, and it is 13 feet deep. It was once arched over, and I think it was a monument of some event; very likely

<sup>1</sup> *See* Sepp, "Jerusalem and the Holy Land," i, 226, where it is called an ancient town gate.

of the passing of our Lord to Calvary. It formed at the same time an entrance to Constantine's Church, for a road ran westwards from it, along the side of the southern cloisters of Constantine's Church, which stood at a higher level, to the present south court of the Church of the Holy Sepulchre. It might thus be considered part of the Propyleum mentioned by Eusebius. The column is of reddish limestone, and so is the cracked unfinished capital; but the basement is of white marble, which has apparently been used a second time. Another similar basement was found in the rubbish near the side of the column.

As the Russians found no cistern on their property, and water was required for any building erected upon it, they resolved to make a new cistern. North of the "Greek Arch" the rock was known to be everywhere near the surface, and as it would have been difficult to dig a cistern there, they determined to try the ground to the south. They removed the Byzantine pavement, and finding at first earth and stones, they were able to dig down 5 or 6 feet, they then came to hewn stones, lying in disorder as if they had fallen down on the destruction of a wall or building. They removed the stones until they had made a pit more than 20 feet deep, about 45 feet long, and 28 feet wide. As they had then obtained the requisite size for the cistern, and further excavation would have been dangerous on account of the loose stones on the three sides, and the proximity of the new Greek building, they did not dig deeper. They built the walls of the new cistern, and at the bottom ran in dissolved lime until all the empty spaces between the stones were filled up.

On the east side they found an ancient wall, running north and south, nearly under the present boundary wall of their property. Under the pavement the wall consisted of two courses of large smooth Byzantine stones resting on five courses of rather smaller stones, with dressed joints and rough faces. Each course is set back a few inches, as shown in Section 2A. This wall of seven courses stands on bad rubble masonry, built with small stones of all sizes and forms; what is lower down I do not know. When this wall was discovered it was rumoured that the ancient town wall had been found; this is only to a certain degree correct. It is now quite clear: first, that there was a trench here, and if this were the ditch of the town wall, the latter must have stood on rock, or above a rock-scarp, and not on rubble; secondly, the wall is not Jewish but Byzantine, with some Jewish stones built into it. Towards the south the stones are much smaller, and it seemed as if there had been a reconstruction. I cannot tell what will be found farther south, nor the real lie of the rock at the bottom of the trench, but I have embodied my views in the sections. Some of the over-turned stones in the ditch are really Jewish, with the draft on their faces, and these are the largest; the others are of different size, but all smaller and with smooth faces, I therefore call them Byzantine.

In the wall there was a door-like opening—the outlet of the sewer from the old market; I tried to clear it out, but after 5 or 6 feet found it walled up. Perhaps when the new pavement of the street is made by

the Municipality it will be opened. I think, farther east, it is rock-hewn, as a little east of this wall the rock rises above the ground. As the rock is near the surface beneath the "Greek Arch," and no rock was found 12 or 15 feet from it at a depth of 22 feet beneath the pavement, there must be a rock-scarp in the interval such as I have shown in Nos. 2 and 3. I asked the Russian Archimandrite to order the foreman of the workmen to clear away the stones for about 10 feet more towards the north, and told him he would certainly find a rock-scarp, and so have no need to build a wall there for the new cistern, whilst the cistern itself would be so much the larger. I also told him I was convinced he would find rock-cut tombs or other caves in the rock-scarp. I asked him, when the walls of the new cistern had reached a height at which there was no longer any danger, to sink a shaft in the centre of the cistern, so as to ascertain the real lie of the rock, and I offered to pay the expenses myself. The answer was that they could not do anything without an order from St. Petersburg.

The Archimandrite considers this proposed excavation interesting, and thinks my suggestions are right, but he has first to report upon it to St. Petersburg; the excavation may therefore still be made. The caves in Nos. 2 and 3 are shown as I think they will be found.

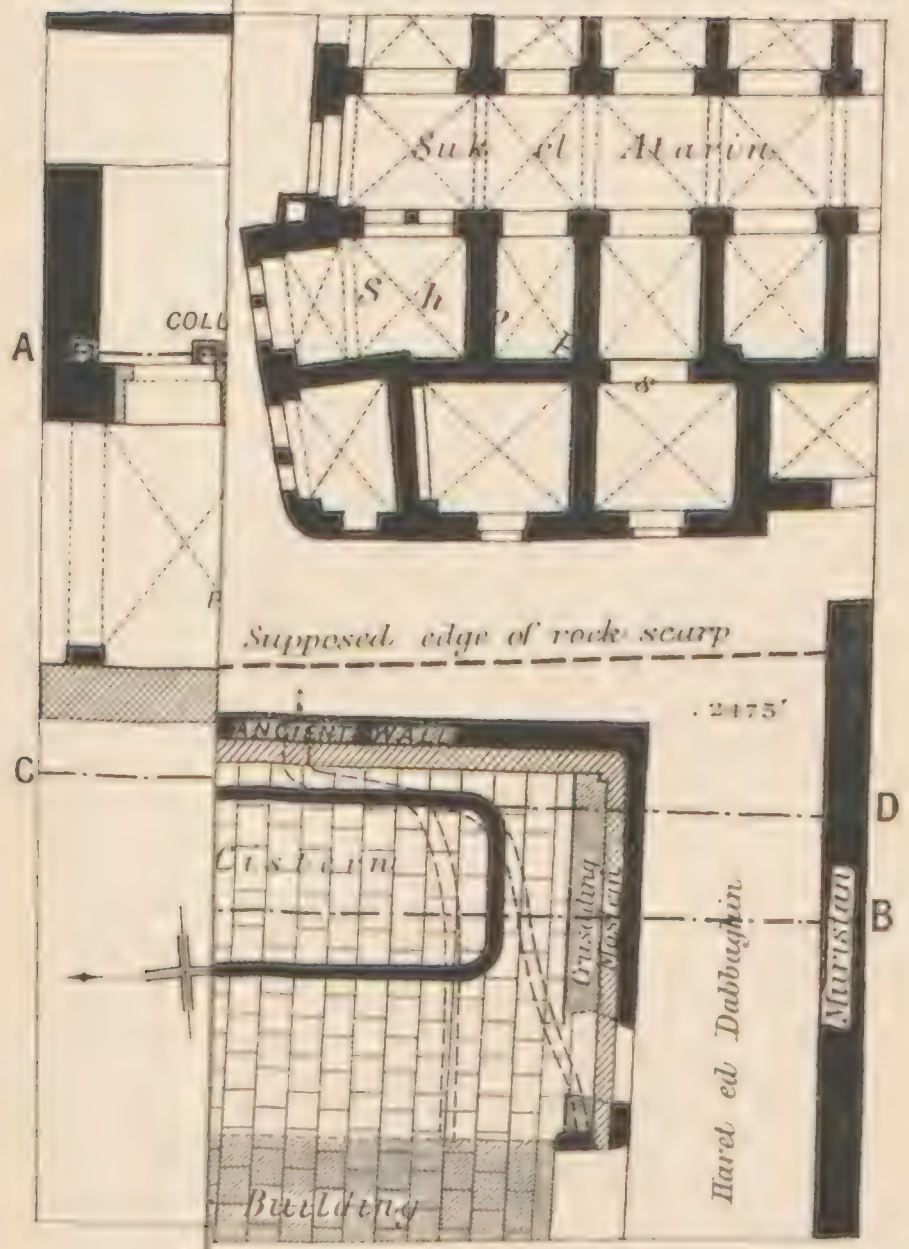
The internal measurement of the new cistern is about 40 feet by 13 feet; it is not arched but covered with iron rafters, as shown in No. 3.

The southern boundary wall of the Russian property proved to be made up of three walls; in the centre there is a thin Byzantine wall of finely hewn stones, probably standing on the pavement; this is strengthened on the inside by a Crusading wall, which stands on earth and goes down but a few feet beneath the surface. On the outside it is supported by a Moslem wall, standing on the surface of the street, which was built when the wall was beginning to give way under the pressure of the vaults with their heavy load of earth. In the Muristan, 120 feet south of the Russian property, the level of the rock is known, and if this be connected with the rock level under the "Greek Arch," it will give the original slope of the hill as shown in No. 2. The new southern boundary wall will be in a straight line with the new Greek building, as shown in No. 1. As a corner of the old building projected into the street it had to be removed, and this has partly been done. They first tried to make the new cistern there, but came upon an ancient massive wall, which, I think, is the old or Jewish wall, probably standing on a rock-scarp, as not far east of it the rock rises above the ground.<sup>1</sup>

CONRAD SCHICK.

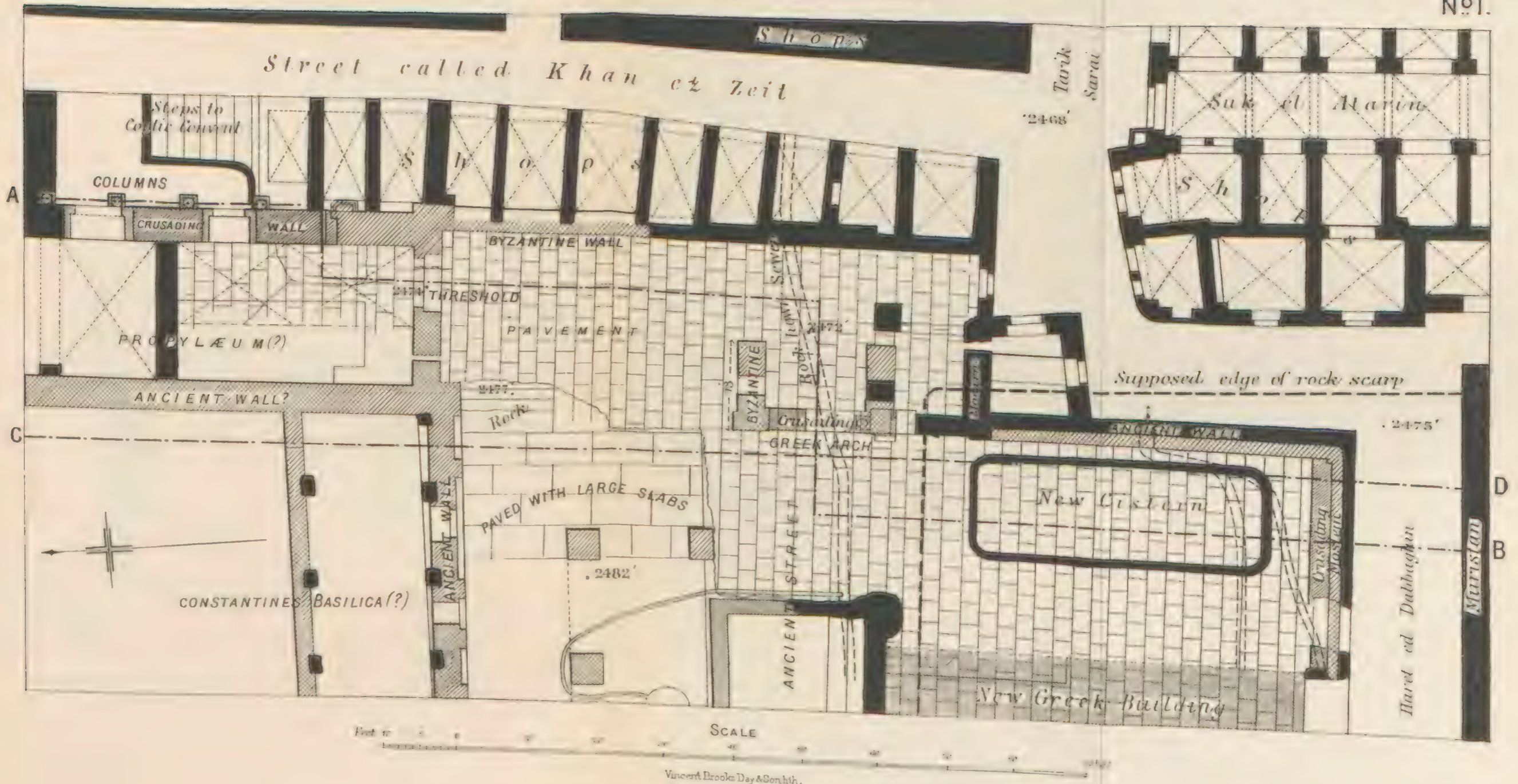
<sup>1</sup> The rock level here was originally 2,470 feet, but it has recently been lowered to 2,468 feet above the sea.

No. 1.



PLAN OF RUSSIAN PROPERTY  
 EAST OF CHURCH OF HOLY SEPULCHRE  
 SHOWING RECENT DISCOVERIES.

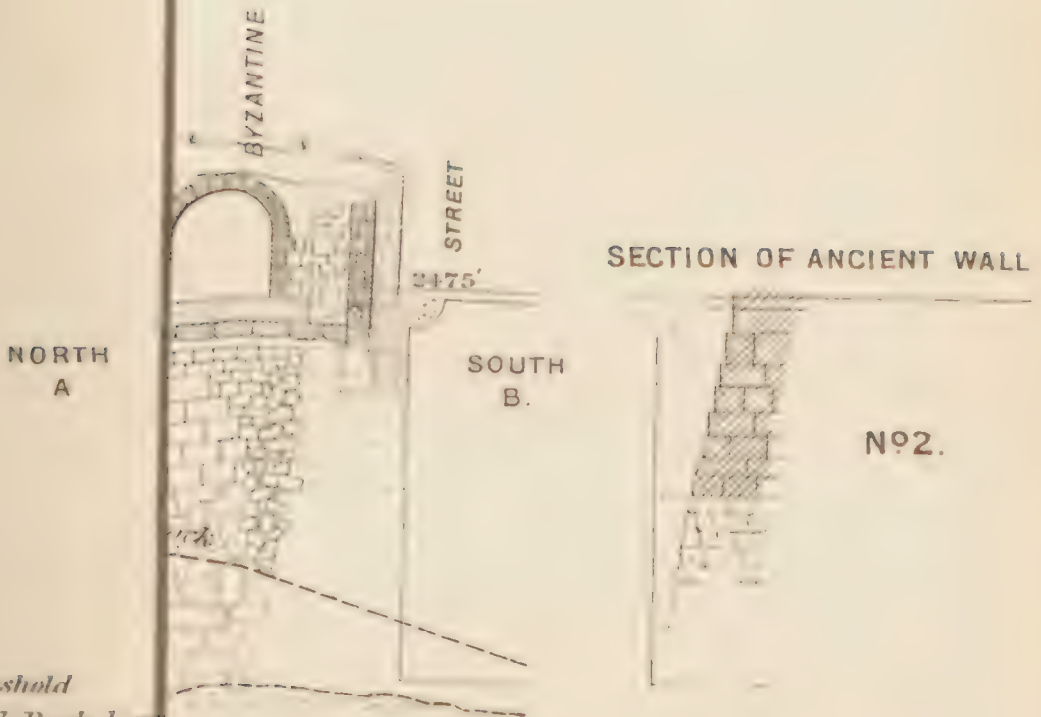
No. 1.



Vincent Brooks Day & Son, lith.



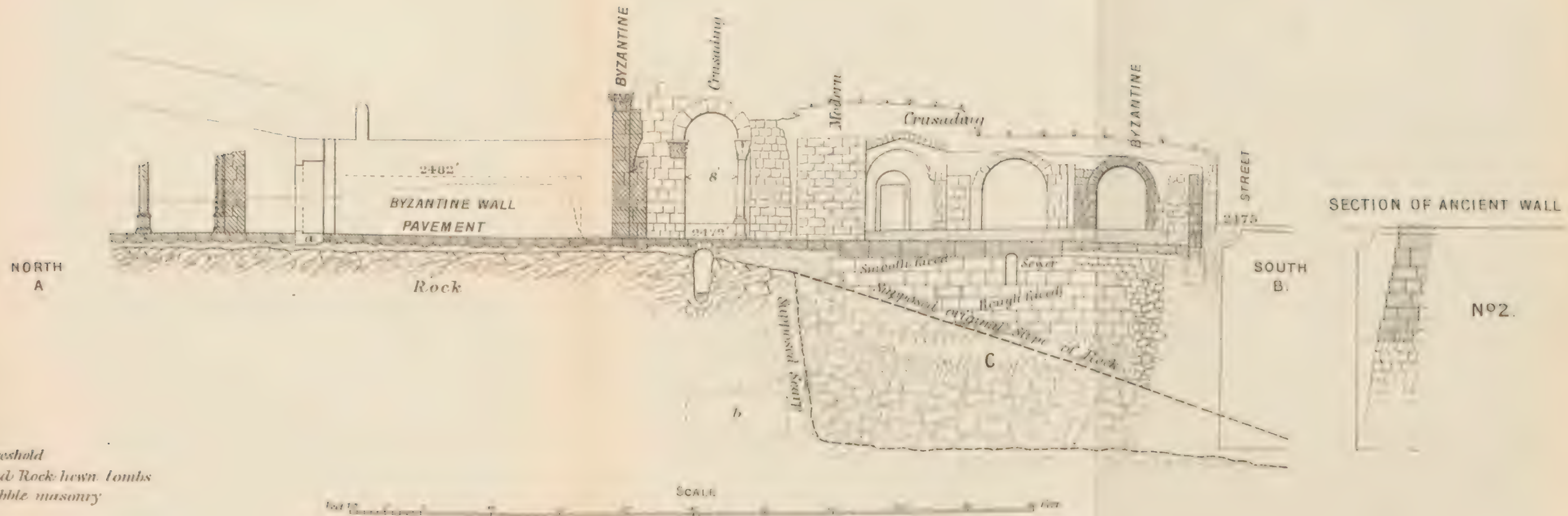
Nº 2.



- a. The threshold
- b. Supposed Rock-hewn
- c. Bad rubble masonry

SECTION ON A.B.

Nº2.



- a. The threshold
- b. Supposed Rock-hewn Tombs
- c. Bad rubble masonry

Vincent Frank Day ARCHT.





Nº 3

NORTH  
C.

St

E PAVEMENT

Crusading  
BYZANTINE  
Masonry

Street  
2475

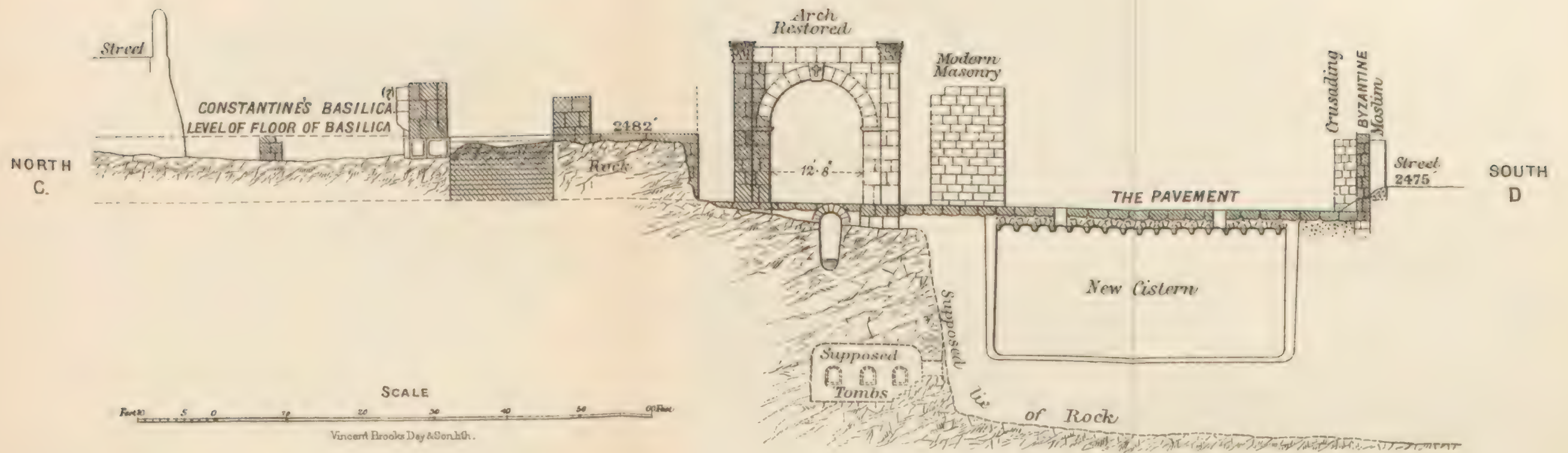
SOUTH  
D

Cistern

PAVEMENT



SECTION ON C. D.





## II.

MR. SCHICK'S paper completes his description of the very interesting discoveries made in the Russian property to the east of the Church of the Holy Sepulchre. It is greatly to be regretted that such a favourable opportunity for thoroughly examining and clearing this most important locality should have been lost. The questions which Mr. Schick raises with regard to the existence of a rock-hewn ditch, the course of the second wall, and the exact position of Constantine's Basilica, are of the greatest interest to every student of Jerusalem topography; and it is to be hoped that the Russian Palestine Society may be induced to resume the abandoned excavations and clear the entire area. It is only by taking advantage of opportunities of this nature that we can ever hope to re-construct ancient Jerusalem.

Though the discoveries that have been made are of high interest, I am not able to agree with the deductions that Mr. Schick has drawn from them, and it may be as well to state some of the objections that occur to me. (1) Mr. Schick believes that the granite columns in the street *Khan ez-Zeit* formed part of the Propylæum of Constantine's Basilica. In 1865 ("Notes to the O.S. of Jerusalem," 53, 54) I drew attention to the fact that "these remains, some of similar character in the ground formerly belonging to the Knights of St. John, and the so-called 'Gate of Gennath,' are nearly in the same straight line." A glance at the plan of Jerusalem will show that from the Damascus Gate a street runs southward to a point in the city wall where the Sion Gate stood before the walls were rebuilt in the sixteenth century. This street, I believe, follows the line of the main street of *Ælia*, which, in all probability, was adorned with columns as in the similar cases of Samaria, Scythopolis, Damascus, Gadara, Gerasa, &c. If this supposition be correct, the columns belong to the street; and the "Greek Arch" and "Gate of Gennath" are the remains of ornamental portals leading to side streets. The columns are certainly not such as we should expect in the Propylæum. Whether the Damascus Gate received its name of *Bâb el-Amâl* from these columns or from the great column which, when the Moslems first took the city, marked the centre of the world, is uncertain.

(2) That the ancient masonry uncovered is Jewish. In 1865 I made some tentative excavations, and came to the conclusion that, though old material had been freely used, none of the existing remains bore the character of mural masonry. The remains seemed to me to belong to an old church, and this view was partially confirmed by the discovery of a very fine font or basin of white marble. ("O.S. Notes," 53, 74.) The character of the masonry, however, led me to believe that the church was a re-construction after Constantine's churches had been destroyed, and that it might even be as late as the period of the Crusades. The position is not that in which we should expect to find Constantine's Basilica.

(3) That the "threshold" is Jewish. Without personal examination

I should be sorry to pass a decided opinion; but this stone appears to me to be an old lintel used during a period of re-construction, and not to be *in situ*, as Mr. Schick supposes. There seems no valid reason for believing it to be Jewish.

(4) That the new cistern made by the Russians is in the ditch of the second wall. The truth of this speculation can only be proved by excavation; it is not impossible, but the space cleared is so small that it is rash to base any theory upon it, and there may have been an old cistern on the spot. Mr. Schick's view of the further course of the ditch is open to greater objection. He places the chapel and cistern of Helena in the excavation. It is true that no rock can be seen in the chapel, on account of the plaster, but what we know of the lie of the rock near it would lead us to believe that a portion of the walls are of rock. As regards the cistern, I find in the "O.S. Notes" (p. 54), that it is described as being "of irregular shape, hewn out of the *Malaki* bed, with the overlying bed of *Misra* left as a roof, one of the most ancient types of cisterns, and similar to those in front of the *Marjeh al-Akha*." If this description be correct, and I have no reason at present to doubt it, the ditch could not have run in that direction. There are other objections to Mr. Schick's theory, the discussion of which would occupy too much space.

(5) The pavements are not the least interesting of the discoveries. The lower pavement is on the same level as the floor of the Rotunda in the Church of the Holy Sepulchre; the upper one at a slightly lower level than the floor of the Chapel of the Exaltation of the Cross, which is almost due west of it. How far either or both are the work of Constantine is a question; the lower one may in part be the street pavement of the city of *Ælia*; the upper possibly connected with the platform of the Temple that preceded the Church of Constantine.

It is so important that researches should be carried on at this spot, that the Committee have taken steps which they hope will be successful to work in co-operation with the Russian Society.

C. W. W.

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## LINE OF SECOND WALL.

*Jerusalem, February 14th, 1888.*

### I.

In the *Quarterly Statement*, 1888, page 16, Dr. Merrill pointed out that my Statements and Plan in *Quarterly Statement*, 1887, page 217, were wrong in two important points.

First, that the ancient remains of the so-called "second wall" are not in its right position and direction; and secondly, that I have not given it in full length!

To this I have only to say:—It is not my custom to go into any controversy at length, but only stating facts for my defence. In respect of

the second point I wish to say that the gentleman he calls the "Engineer" showed me the exact spot of the ancient stones towards north, at a point a little south, opposite of the corner of the street going eastwards (or the home of the Sisters of Zion), and that in the *Quarterly Statement*, 1886, page 23, Dr. Merrill himself gives its length to about 30 yards, that is 90 feet, and my drawing in *Quarterly Statement*, 1887, page 217, shows 108 feet; and in respect of its "prolongation towards north-west," the "Engineer," the mason, and other people who had seen it, told me that it was a wall of quite another description, and not grounded on the rock but standing on earth; further, in that region all foundations for the new building were made new—as I myself have repeatedly observed, and the "Engineer" told me.

In regard to the first point, the old wall shown in my plan as not giving its right position or direction I have to say: that the street had formerly been at an average of 10 feet wide, but now, after the new building is made, is now on an average of 15 feet wide. When the street was altered, see *Quarterly Statement*, 1886, page 23, for the description in the last 8 lines: "The large displaced stones, represented by the heavy broken line opposite Frutiger's Bank, which were found when grading the street, would be on the line of the old wall beneath them." These stones formed, as it was plainly perceivable, the inside of the ancient wall, and was partly under the narrow (old) street. As the ancient wall was of considerable breadth, its western face certainly fell "inside," *i.e.*, towards west of the old boundary wall of the "open field"—but as the new building was put backwards, and the street made 5 feet wider, it fell nearer the edge of the new wall. The "Engineer," the mason, and others told me plainly, in the south, the *whole new wall stands on the old*, in the middle not fully the half, and in the north *nothing at all*—"not one inch," as the "Engineer" said—and accordingly, as I have seen the remains, consider the plan to be correct.

Finally, when my plan in 1887, page 217, does not agree with the one the "Engineer" had given to Dr. Merrill, this I can believe, and understand that I was not able to get also such a one from him, although it was promised to me repeatedly, but I was obliged to make my own, which every one may compare with its object.

The "cistern" spoken of in *Quarterly Statement*, 1888, page 16, I would not call it a "large one." It ends towards west, in about the middle of the (former) street, not going fully to the boundary wall at that time (*i.e.*, to the ancient wall), and its greater part extends eastwards under the building of the Joseph Sisters.

This I thought to be my duty to explain to the Palestine Exploration Fund.

C. SCHICK.

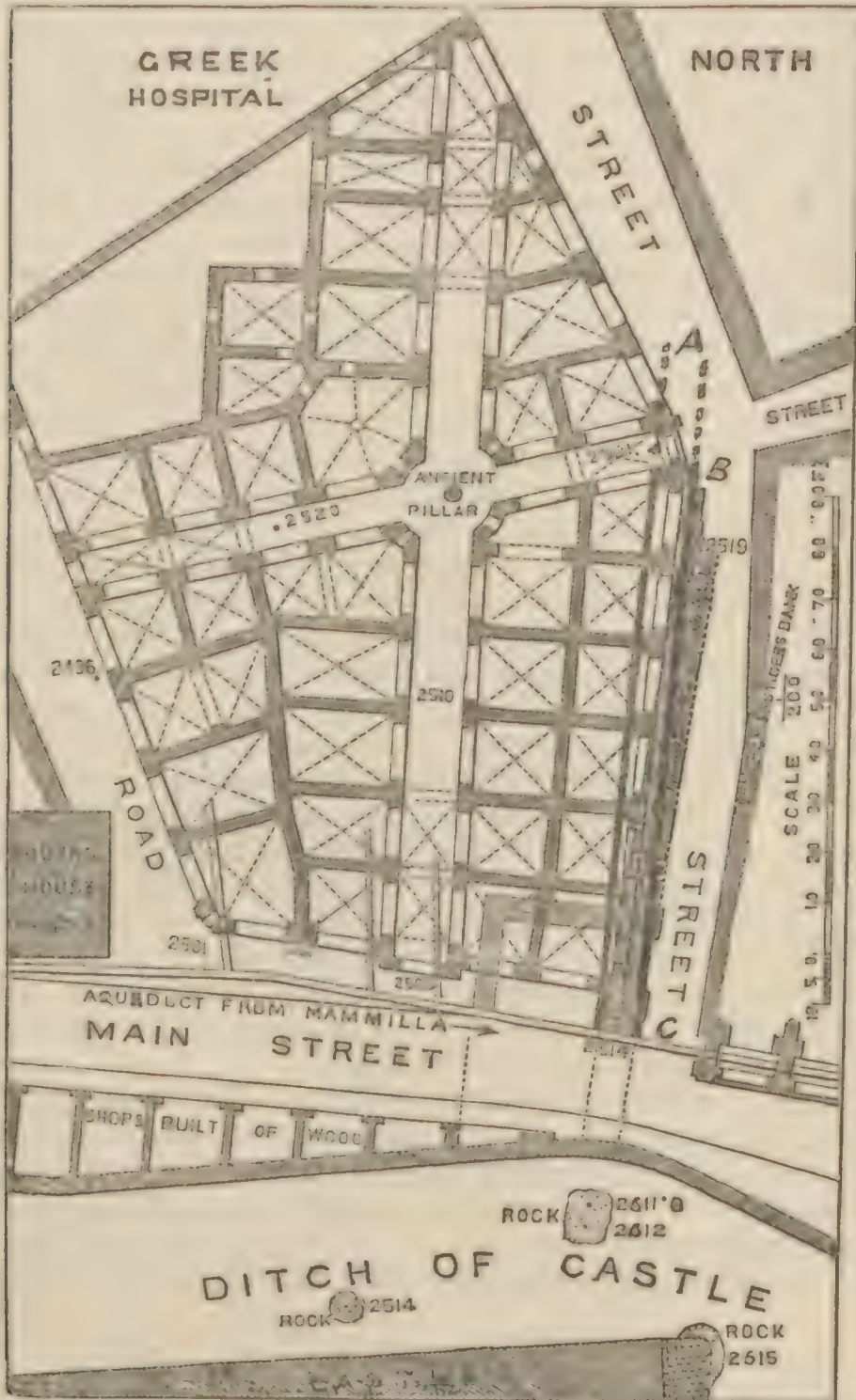
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## II.

I have indicated on the inclosed plan, which you kindly sent me, the direction of the old wall according to my notes and observations. From C to B the line was nearly complete. From B to A it was broken.

Looking over my notes, and comparing them with the line which the engineer made (indicated in pencil lines on the inclosed plan) of the course

PLAN OF NEW BUILDING NEAR JAFFA GATE, SHOWING LINE OF SECOND WALL.



Thick black lines A, B, C, Dr. MERRILL. Thin lines with shading, HERR SCHICK.

The figures apply to the Rock levels, not the surface of the ground.



of the old wall, I am inclined to think that there may have been a slight angle at or near the point B, the wall beyond B, in the direction of A, turning to the left. If the question lies between Schick, Merrill, and the Engineer, I should say, were I appointed to decide upon it officially, that the Engineer's testimony should have the first consideration.

SELAH MERRILL.

Andover, Mass., U.S.A.

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## NOTES ON A JOURNEY FROM ISKANDERÛN TO TRIPOLI.

BY GREVILLE J. CHESTER, B.A.

*(Member of the Royal Archæological Institute.)*

ON the 20th of November, 1886, I arrived by the Russian steamer at Iskanderûn, which, although an open roadstead, is, from its position, the only tolerably safe anchorage in Northern Syria. The small town of mean dwellings is beautifully situated under the steep but forest-clad range of Mount Amanus, which is an offshoot of the still higher mountains of the Cilician Taurus, whose towering heights are seen in the distance across the gulf. Iskanderûn is malarious and fever-stricken, on account of an undrained and pestilential marsh which festers immediately behind the houses of the town. Drainage would be easy, and would conduce enormously to the welfare of the place, which is almost uninhabitable in summer and early autumn; but the Turks are averse from improvements of any kind, so nothing is done.

In a wonderfully short space of time my excellent servant, Yusuf Basil, of Beirût, had struck a bargain for two horses and a mule for the journey to Tripoli, and by 3 o'clock I was in the saddle. My muleteer, Mohammed, had never before been beyond Antioch.

Crossing the marshy plain, whose stagnant pools abound with fresh-water turtles, and their rushy banks with tree-frogs greener than the reeds to which they cling, I speedily reached the base of the mountain, up which a well-engineered road, constructed by a foreign company, winds on its way to Aleppo, and in three hours reached Beilân, a populous village of Christian Armenians, situated a little below the watershed. I found fair accommodation at a new Khân most picturesquely placed, its stone substructions being thrown across a rocky ravine, and supporting a wooden veranda, out of which the guest-chambers open. The view down the defile, with its precipitous rocky sides, to the tranquil gulf below, with the huge snow-capped mountains of Asia Minor, and in the neighbourhood of Tarsus, is beautiful in the extreme. Below the village the ravine is vocal with falling water, and is full of pomegranates and other fruit trees. The houses of Beilân are flat-roofed, with projecting wooden galleries, and are built in terraces one above the other. The village street

exhibits a condition of cleanliness and prosperity due to the superior civilisation of its Christian inhabitants, and is quite unlike that of a village of Muslim Turks.

Next morning I was off betimes, and in about an hour reached the top of the pass, some 1,600 feet above the sea. In places the road was well-nigh blocked by huge flocks of sheep, which, starting from vast distances inland, and changing conductors two and even three times, are led down to the coast at Iskanderûn for exportation. These animals travel slowly, being often several months upon the road, but they browse in passing where they will, and were all in fine condition. After passing the watershed a splendid view inland bursts on the eye of the Bahr-el-Abyad, the White Sea, or Lake of Antioch, situated in a vast marshy plain, bounded by mountains of fine outline, and studded with lonely Tels, which mark the sites of unknown and long-buried towns. Shortly after passing the summit we left the high road to Halep, and turning to the right, passed across and along numerous wooded ravines which intersect and drain the southern slopes of Amanus. The autumn tints of the deciduous trees on the limestone formation were extremely fine, but the plain below was burnt up to a dusty brown, even to the very edge of the great lake. To the right are seen the imposing ruins of a crusading castle on a precipitous rock overhanging a ravine. This fortress, now called Kulat-el-Bagrâs, is said to be the Mansio Pangrios of the old itineraries, and the Pagre of Strabo, and was one of the defences of "the Syrian Gates." Descending for about an hour from a point opposite this castle, we reached a small village of miserable huts, named Karamurt, situated on the verge of the plain, close to the ruins of a large and finely-constructed ancient Khân. While resting for a few minutes at a wretched wayside café, a boy brought me a handful of Roman-Colonial and Byzantine coins, but was prevented from selling them by a dirty and ragged Turkish soldier, who was collecting taxes, and probably intended to confiscate them to his own use. The track across the plain from this place sometimes follows the track of the old Roman road, paved portions of which exist in places, and sometimes diverges from it. The soil of the plain is of extraordinary richness, and vast quantities of liquorice spring up spontaneously. It is cultivated in part only by wandering hordes of Turkomans, Bedoucen, and Kurds, and I passed two or three villages of immigrant Circassians. Asking the character of these people, I received the answer, "*They are very good people in the daytime!*"

On approaching the Orontes, a little above Antioch, whose ancient fortifications had long been in sight, I found it to be an eddying river of a milky-white colour. The stream is impeded by numerous dams and weirs, and huge wooden water-wheels continually turn with a creaking sound like that of a magnified Nubian sakieh, and raise water for the irrigation of the neighbouring orchards and gardens. One of these wheels at Antioch itself is close on a hundred feet in diameter!

The situation of Antákia or Antioch is worthy of its ancient fame. The modern city occupies but a small corner portion of the ancient site at the

foot and on the lower slopes of Mount Silphius, and extends along the left bank of the Orontes, which is crossed by a single bridge. The ancient city ran high up the slopes of the mountain behind. The existing antiquities are strangely few. Earthquakes, and the still more destructive Turks, have combined to erase the noble features of the ancient capital of Syria, erewhile the second or third city of the Roman Empire. The streets and bazaars are mean and narrow, the centre being occupied by ditches, filled with black mud, dead cats, offal, and every kind of filth, beside which, like swine, the Turkish inhabitants take their pleasure. The bazaars, however, are well supplied with vegetables, and in places venerable plane trees overhang the streets. The lower portion of the city wall, near the river, which in part consists of large drafted stones, and the remains of a tower, seem to be of more ancient structure than the Roman and Byzantine fortifications above, and probably date from Seleucid times. It is harrowing to be obliged to speak of the walls of Antioch, once perhaps the most splendid and picturesque in the world, as monuments of the past. Originally they zigzagged up almost perpendicularly from the Orontes to the very top of Silphius, set thick with noble towers and bastions, some of which were no less than 60 feet in height. On the top the walls leap from rock to rock, crest huge precipices, and in one place stretch across a savage ravine, which they bridge over by means of vast substructions built up from the bottom to a height equal to that of the rest of their circuit. When perfect these walls enclosed a space of seven miles. Now, under Turkish auspices and Turkish rule, the whole of the walls on the slopes or face, as distinguished from the top of Silphius, with their towers and bastions, have altogether disappeared. Multitudes of the finest stones have been transported across the river, and appear as gravestones in the great Turkish cemetery; others have gone to construct a modern barrack. In fact, every one who wants a stone for building or for a memorial of the dead, resorts to the walls, and, without let or hindrance from the authorities, carries off whatever he desires. So the work of destruction began years ago is still going on, and ere long what might justly have been regarded as one of the wonders of the world will be matter of history only.

It is strange that Antioch is so seldom visited by European travellers, for the scenery is beautiful, and the city has the paramount interest pertaining to it, that it was there that "*the disciples were first called Christians,*"<sup>1</sup> and thence it was that the Apostles SS. Paul and Barnabas started on their first journey to evangelize the Gentiles.<sup>2</sup> Antioch was likewise the Bishopric held by S. Ignatius, afterwards martyred at Rome in the Colosseum under the Emperor Trajan.

It is very injurious to British interests and to the character of the English as a nation that, in a place like Antioch, the Consular Agency should be confided to a Jew, who is unable to speak a word of any European language.

<sup>1</sup> Acts xi, 26.

<sup>2</sup> Acts xiii, 1-4.

From Antioch I made a pleasant excursion to Beit-el-Ma, "the House of Water," the Daphne of the ancients. The path led at first along the left bank of the eddying Orontes, and then, turning to the left, I passed along lanes whose high banks of reddish soil, garnished with ferns and trailing creepers, had all the appearance of those of Devonshire. Emerging at length upon an upland plateau, I found the sequestered Beit-el-Ma at the head of a beautiful ravine at the foot of lofty limestone mountains. All remains of the ancient grandeur of Daphne have disappeared; not a vestige of temple or shrine now remains. But the place is one of singular loveliness and seems the very abode of peace. There is "water, water everywhere;" water bursting forth clear as crystal from and out of the rocks above; water racing in little rocky runnels under ancient plane trees and thickets of evergreens; water turning little corn-mills, so ridiculously small that they might seem to be the mills of pigmies; water dashing down in splashing falls, and joining its rills to form a rushing torrent, which foams away half-hidden in bowers of verdure at the bottom of a deep ravine. Around and about the mills I encountered a few Nusaireyeh men and boys in their picturesque garb, and of a personal beauty rarely seen elsewhere. These people do not live at the mills, but at a village about a couple of miles down stream.

The distance from Antakia to Sueideyeh (Seleucia) can scarcely be more than 16 miles by the direct route—that, doubtless, which was taken by St. Paul and Barnabas—but the course of the Orontes, which lies to the left of the track, winds to such an extent that its course is more than forty. The road is one of great beauty, passing through wild ravines along the base of the mountain called by the Macedonian Conquerors of the country Pieria, but now Jebel Musa, and crossing streamlets hurrying down to join the swift-rushing Orontes. When the highest point is reached and the corner of the mountain is turned, the sea bursts upon the view, with the mouth of the Orontes and the rich plain of Sueideyeh in the foreground. Off the mouth of the river, as I saw it, lay three large American ships of the United States, waiting for cargoes of liquorice, which is abundant upon this plain also, and which is largely used in the manufacture of tobacco. No town marks the sight of the once magnificent city of Pierian Seleucia, but a few houses and a Turkish custom-house stand a little above the mouth of the river, and the plain of Sueideyeh is dotted with a considerable number of cottages and houses of a better class, mostly embosomed in gardens of pomegranates and other fruit trees. In one of the best of these houses I was hospitably received by a beautiful and gracious lady, the wife of one Simon Panayôt, a Syrian gentleman of the Orthodox Greek Church, who is both a merchant and a cultivator of the soil. My host, who acts informally as agent under the British Flag, was absent on my arrival at the Goletta, but soon came home, and I had the advantage of his company when I rode to visit the remains of the ancient city about 3 miles distant, upon the steep scarp of Mount Pieria, and between it and the sea. These remains, which cover a tract some miles in circuit, are still of considerable

importance, and present a very picturesque appearance, being overhung and often overgrown with gnarled fig and other fruit trees. Overhead are steep and often precipitous rocks, some of which have evidently been artificially scarped. Everywhere they are perforated by innumerable tombs, some of vast size, and in addition to these I noticed many niches intended apparently for *ex votos*.

In some places are perched up huge stone sarcophagi, with wreaths, cupids, and other emblems sculptured upon their outer faces. Most of these have been rifled of their contents, but I saw at least two which are still intact. The remains of two of the city gates, of an amphitheatre, and of large and curious portions of the ancient fortifications can still be seen, and the ruins are everywhere strewn with broken columns, while in one place a headless statue of white marble still stands in its original position. In the low ground in front of the city are massive walls which now inclose a marsh, once the inner harbour of Seleucia. A canal, several hundred yards in length, now choked up, leads from this harbour to the sea; it was originally protected by bastion towers, of which some vestiges exist. The entrance from the inner to the outer harbour is marked by two magnificent piers formed of vast stones clamped together with iron, of which the southernmost, 120 yards in length, is still in admirable preservation, and vies with any existing work of the kind. It was probably from one of these moles that the Apostle Paul stepped on board the galley which was to convey him across to Cyprus.<sup>1</sup> The view from this spot is of extreme beauty and interest: the mountainous coast to the north, the sweep of mountains to the east and across the mouth of the Orontes, the stupendous limestone cone of Jebel Okra (Mount Casius), rising some 5,800 feet out of the blue waves of the Mediterranean—all these combine to form a picture never to be forgotten. Inland, to the north of the ancient harbour, is a wonderful series of galleries and tunnels cut in the solid limestone rock, and said to be 1,200 yards in length. They served the double purpose of supplying the city with water, and of carrying off the surplus water which accumulated at times in a rocky ravine, to the sea. The depth of these galleries reaches in places to 120 feet. This immense work would answer its purpose to the present day had not the Turks in sheer wantonness blown up the lower part of the excavation, and made a breach through which the water escapes and forms an unwholesome and malarious morass. Judicious digging on the site of Seleucia could not fail to be attended with the discovery of most interesting antiquities.

I rode back to Suedeyeh along the sandy beach which extends from the mouth of the harbour of Seleucia to the mouth of the Orontes, to a spit of sand, on which stands the chapel or wely of Mar Girgis, St. George. This small, whitewashed, domical building, although of Christian foundation, is much frequented by Nusaireyehs, who come from considerable distances inland to make their orisons, with a view to obtaining relief from various diseases. In like manner the Muslim

<sup>1</sup> Acts xiii, 4.

fellaheen of Central Egypt frequent the shrine of St. George, at Bibbeh, on the Nile.

I left Sueideyeh betimes in the morning, and was ferried across the Orontes near the Goletta, a little above its mouth, having engaged a young man to act as guide as far as Kesab, on the further side of Jebel Okra. The path, if such it could be called, for it was often imperceptible led across a marsh at a little distance from the sea, near the supposed site of the ancient Nymphæum, and then under lefty and precipitous rocks of grey limestone, much perforated by caves, in one of which I was glad to take refuge with my little cavalcade during a tremendous shower of hail. From this point I gained the sea beach at an angle of the coast formed by the jutting forth of the immense mass of Jebel Okra, "the Naked Mountain," so called from the bareness of its towering cone. The maps of the Syria coast are most deceiving at this point, as they all of them give the impression that there is a tract between the mountain and the Mediterranean, whereas the very contrary of this is the fact.

Jebel Okra springs up out of the sea, and its steepness is so great that there is no track possible on that side, all passengers being compelled to make a long detour inland. The cone of this great mountain is to Northern Syria much what the cone of Hermon is to Southern Palestine, and from its more isolated position it is even more of a landmark than its more majestic rival. A path used by charcoal burners to convey their wares down to the sea side, leads up the side of the mountain at a point where, albeit it is covered with scrub, it looks from below all but perpendicular. It proved, moreover, so narrow, that my baggage was three times swept off the back of my sumpter-mule by rocks and stubby shrubs which impinged upon the track. This caused so much grumbling on the part of my surly muleteer, Mohammed, that I feared he would strike work altogether, and I thought it best to go on alone and leave him with my servant and guide to settle matters as best they might. I accordingly continued the ascent, holding on by my horse's mane as he clambered up the steep ascent like a cat. On gaining a level space some 1,500 feet above the sea, I waited for near an hour, enjoying the superb view until I was rejoined by my companions, whose voices I had long heard far beneath me. Below lay the pellucid blue sea, the mouth of the Orontes, the chapel of St. George on its spit of sand, the ruins of Seleucia, with Mount Pieria behind it, and beyond again the forest-clad mountains which line the coast towards Iskanderûm, the chain of Amams closing the prospect. Truly a glorious view of a goodly land—a land which but for Turkish tyranny and misrule might be a very "garden of the Lord." I now made the discovery that my picturesque guide, who was armed with a rusty gun and a portentously long knife, knew absolutely nothing of the way, never having traversed it before. We accordingly strayed from the track until we reached an upland village of the Nusaireyeh, which, from the number of hewn stones and scarpèd rocks, I judged to be an ancient site. On regaining the path and passing the watershed of the shoulder of Jebel Okra, a

magnificent view presented itself, chiefly of forest-clad mountains, extending range behind range far as the eye could reach. Afar off, in a deep valley, could be descried the village of Urdeh, chiefly inhabited by Mohammedans. After resting an hour for lunch under a gnarled carob tree of great age and size, I commenced the descent on the Eastern slope of the mountain, and having passed a village on the left of the path exclusively tenanted by Muslims, I reached Kesâb an hour before sunset. Though I made several inquiries I failed to learn the site of the Temple of *Zeus Kasios*, where Julian the Apostate went from Antioch to offer sacrifice, but it seems unlikely that its remains have entirely disappeared.

The Christian Armenian village of Kesâb, which is also the name of a considerable surrounding district, is built amphitheatrically on the side of the Jebel facing inland; the flat-roofed dwellings with projecting galleries of wood rising one above another like those of Beilân, and commanding an exquisite view of mountains and of valleys winding amongst them. I found the place in some confusion, for the Turkish tax-gatherers had been all day in the village, and the irregular soldiers—hang-dog-looking ruffians enough—were making their accustomed extra requisitions of bread, fowls, and other provisions. The Armenian community of Kesâb has been settled there for about 300 years, and up to a few years ago had stuck to their ancient faith, and there was one flock under one shepherd, the whole brotherhood dwelling together in unity. This steadfastness, however, proved too much for the equanimity of the Romish and protestant missionaries, who are for ever seeking proselytes from those who hold more ancient forms of Christian belief, and thereby add another element of disunion to poor distracted Syria. Accordingly a "mission" of the so-called "Reformed Armenians," who acknowledge the supremacy of the Pope of Rome, was despatched to Kesâb, made converts and erected an opposition Church to the old one. Next the United States' protestant missionaries of Beirût appeared on the scene, preached the New England gospel, made more converts, and built a conventicle at the other end of the village. In addition to these, an Irish presbyterian missionary makes his *cill gâtara* with his wife in this healthy village in the summer months, but I did not hear that he had succeeded in establishing a fresh sect of his own. The inhabitants of Kesâb are now torn up by the dissensions of rival religionists.

I started before sunrise next morning with an excellent Armenian, named Cippa, as my guide and guard, passing through very beautiful wooded scenery. The country hereabout on the borderland of two pashaliks is unsafe and has a bad name, and I was assured that the natives who have occasion to go from place to place seldom venture to travel alone. About two hours from Kesâb the geological formation changes from the mountain limestone to volcanic rocks, which often come to the surface in the shape of broken masses of weathered basalt resembling lava. The vegetation changes as if by magic. The deciduous trees of the limestone in their gorgeous autumnal livery of scarlet, flame, and canary colour, which never elsewhere had I seen equalled or even approached in

splendour, suddenly give place to the beautiful, but somewhat monotonous, Aleppo pines. After winding through several rocky and wooded defiles, and crossing several "hills of prey," the path ascends to the summit of a forest-clad mountain, from which a superb view is obtained, and which trends down and ends at the promontory of Ras Buseit, near the ancient Poseidion,<sup>1</sup> whose site is seen on the coast far below. Looking southwards from the summit of the pass, the giant form of Lebanon is visible towering up in the extreme distance; while in the other direction the far-off mountains of Asia Minor can still be descried across the sea. A tolerably steep descent leads down into the Wady Kandeel, which I followed for many miles. This valley is cultivated by the inhabitants of several Nusaireyeh and Turkish villages, which appear perched up on the top of the whitish clay hills which bound it. The scenery hereabouts is comparatively tame and uninteresting, and seems especially so after the extreme beauty of Casius and its offshoots.

Rain was threatening, night falling, and my horses were knocked up when I was still far from Latikeyeh, my destination for the night, so I was obliged to ask shelter in the cottage of one of the Nusaireyeh in a tiny hamlet at a place to the left of the road, named Hirbeh. These strange people, as is well known, have an equal prejudice against Christians and Mohammedans, and I found Mohammed, my muleteer, who arrived first at the cottage while I was watering my horse at a spring, was already in the midst of a quarrel with the good man of the house; who, on my coming up, peremptorily refused me hospitality. An old woman, however, came out and spoke up for me, and permission was at last given me to enter. From that moment nothing could exceed the kindness and courtesy of Ibrahim, my host, but it was touching to observe his astonishment when I paid for what milk, and fowls, and fodder I required. After my dinner I brewed a quantity of tea, which I dispensed in three tin mugs to five women seated on a kind of clay dais on my left, and to twenty-four men and boys who sat in a triple semicircle in front of me on the mud floor. The same extraordinary personal beauty which I had observed at Beit-el-Ma, was characteristic also of the community of Hirbeh. They complained bitterly of the tyranny of their Turkish masters, of the exorbitant and illegal taxes they were called upon to pay, and of the requisitions of cattle, sheep, and other produce made by the officials. What weighed upon them most, however, was the ruthless conscription from which, until lately, in consideration of the unorthodoxy of their religious tenets, they had, on payment of a tax, been exempt, under which boys and men from 15 or 16 to 50 were carried off and doomed to serve in the army of the sultan. The harmony of the evening was only once disturbed, and that was when it chanced to be mentioned that a small kitten had recently been brought from Latikeyeh; whereupon my muleteer exclaimed, "Ah! it was born a good Muslim kitten, and now it will be brought up a bad Nusaireyeh!" It needed a lavish distribution of loaf sugar to quell the hubbub which ensued.

<sup>1</sup> Herod. iii, 91.



It was with some difficulty that, being dead-tired, I succeeded in getting the single room of the cottage partially cleared, and was able to prepare to go to bed. I slept that night in the single room of the house in company with five men, one woman, one vocal infant of uncertain sex, twenty-six sheep, fifteen goats, cocks and hens galore, a donkey, and the afore-mentioned kitten, which slept peaceably enough at my feet. In addition to these a strange cat came in in the night and consumed the greater part of a chicken destined for my next morning's breakfast. There were no insects!

The road from Hirbeh to Latikeyeh lies along a plain, sometimes cultivated and sometimes overgrown with thickets of lentisk, and a white and purple-berried myrtle, at no great distance from the sea. A flat track near the sea, where the grey rock crops out on the surface, is perforated by numerous tombs.

Latikeyeh, originally a Phœnician town, but restored by Seleucus Nicator, and named after his mother Laodice, was within a few years a tolerably flourishing city. Now its trade has been almost stamped out by the exactions and tyranny of the Government, and it is rapidly falling into decay. I was the witness of a highly characteristic incident. Going into the bazaars I found almost every shop closed, and scarcely a human being could be seen in the streets. I knew it was not the Sunday of the Christians, nor the Saturday of the Jews, nor the Friday of the Mohammedans. At length I found an old crippled jeweller squatting in his stall, and learned the reason of the depopulation of the city. A road (which no one expected would ever be finished) had been projected to go from Latikeyeh to Hamath, and the Turkish Governor had ordered the entire male population, irrespective of age, health, strength, or capacity to work, to turn out upon it. Even those who offered to provide four able-bodied men to labour in their stead were not exempted. Of course, no one was paid for his services, with the natural result that next to nothing was done.

The ancient monuments of Latikeyeh consist only of a few columns of a temple, and of a curious arch of late Roman date, which exhibits some unusual sculptures of shields and arms. Bits of old masonry of huge stones are seen on the edge of the now deserted harbour, and near it are some fine stone warehouses, apparently belonging to the epoch of the Crusades. The venerable Priest of one of the Greek Churches brought for my inspection a superb MS. copy of the New Testament in Greek, for which a very high antiquity was claimed. There is no doubt that the Emperor of Russia offered for it the sum of 2,000*l.*, but the Greek community unanimously refused to part with the precious volume. I do not profess to be a judge, but it did not seem to me that the book was of earlier date than the tenth century.<sup>1</sup>

<sup>1</sup> It is possible that this splendid MS. is of the Gospels only, but I unfortunately lost the book containing the whole of the memoranda taken during my entire journey. I must plead this excuse for the baldness and poverty of the present paper.

Leaving Latikeyeh, whose name is probably most familiar to those who know what is *good* tobacco, I forded one of the numerous Nahr-el-Kebirs, and several other streams, and in five hours reached Jebelch, the Gabala of the ancients, which gives its name to another splendid variety of the so-called "fragrant weed." This small town, or rather village, which with one single exception is entirely inhabited by Mohammedans, abounds in the remains of past ages, but is itself but a dirty and sorry place. At the northern entrance, near the fine old mosk of Sultan Ibrahim, who is buried within, and the crowded burying-ground, stand the grand ruins of a Roman theatre, whose vaulted passages must have rivalled those of the amphitheatre of Verona. Some of the huge stones of the old harbour may date even from Phœnician times, and the rock tombs are of very high antiquity. Broken columns and hewn stones lie about in every direction. Issuing forth from the walls of Jebelch I saw the grand phenomenon of two perfect waterspouts, and several other imperfect ones hanging over the stormy sea. In about an hour I arrived at a small bay, near which, on its northern promontory, are the remains of ancient buildings with hewn stones lying about in great numbers. This place is called Tel Sukat. After fording several more streams, I came to another and much larger group of ruins, amongst which burrowed a few fever-stricken Christian inhabitants. It is called Baldeh, the Paltos of Strabo, and is situated on the top of low cliffs close to the sea, into which, hard by, flows a beautifully clear and rapid river named the Nahr-es-Sin, which is crossed by an ancient Arab bridge. At its mouth are the remains of an ancient harbour. To my surprise, my host at Banias, a Syrian of the Orthodox Church, informed me that this river derived its name from the French Crusaders, who call it the *Seine* in memory of their much-loved river in far-off France. In support of this apparently unlikely derivation, he cited the *fact* of certain villages near Latikeyeh being undoubtedly called after Saints of the Latin Church. On the other hand, the name of this river is supposed by some to be connected with that of the Sinites enumerated along with the Arkites and Arvadites in the Book of Genesis.<sup>1</sup>

The path onwards from Baldeh leads along the sea shore, and across the bay is seen towering up above the few buildings of modern Banias the stupendous castle of Markab, El Markab, "the Watch Tower," seated on a crag of basalt rising some twelve hundred feet above the sea.

Banias, the ancient Balanea, although formerly a place of great importance and an episcopal see, has so much dwindled down that within a few years past it was entirely without inhabitants. It now consists of a few houses, which line the beach of a tiny bay, in the midst of which rises the new konak of the Turkish Caimacan of the district, who has removed his seat of government from the inconvenient site of Markab, and the quarters of his irregular soldiers. Behind the town there is a romantic rocky ravine with precipitous sides, through which a stream

<sup>1</sup> Genesis x, 17, 18.

finds its way to the sea. There is also a beautiful spring of fresh water, and the numerous walls, foundations, and rock tombs show the ancient importance of the place. I copied an ancient Greek inscription on a stone lying in front of the konak, but the transcript was lost in my note-book.

Next morning I started to visit Markab, sending my muleteer on with the baggage by the direct route along the coast. The ascent is very steep, and the climb a stiff one for man or horse. On the northern shoulder of the hill is a tolerably populous Turkish village in a beautiful situation. I had hoped and expected to find that the Castle of Markab was built on Phœnician, or, at all events, on Roman or Byzantine, foundations, but careful examination convinced me that the whole building is Gothic, of the period of the Crusades. Apart from its superb situation, the Castle of Markab must be almost without a rival. Carnarvon Castle, perched on the top of Pennmaenmawr would scarcely equal it in grandeur. The Castle walls rise up from the black basaltic rocks, which in places are scarped to increase their apparent height. On the land side is a deep dry moat and numerous outworks. Vast subterraneous chambers with vaulted roofs were apparently used as stables. Within the walls is a fine first-pointed Gothic chapel, desecrated indeed and neglected, but still in good preservation, and used as a mosk by the few Mahommedans who continue to infest the ruins. The view from the battlements, of sea, winding shores, and distant mountains, is of indescribable beauty. Descending to the coast, I joined it at the mouth of a pretty ravine, on whose edge, overlooking the waves, stands a grand outlying Burj or tower, evidently, like the Castle above, of the Crusading epoch.

The route northwards from this point lies sometimes on, and at other times close to, the sea coast, which is commonly bordered by low rocks often perforated by tombs. Along the whole of this ancient and lonely coast, which once "echoed with the world's debate," the traveller has constantly to dive down into picturesque wadies and to ford streams half-blocked with oleanders and marged with venerable oriental planes. Scarcely one of these valleys fails to show one or more arches of a grand old Roman bridge, and in some instances of one of Arab construction, but nothing appears of more modern times. It is the *rolle* of the Turk to blast, to destroy, to lay waste, not to originate or to restore. Of course, after rains, these rivers, which have their sources in the neighbouring hills, soon become impassable, and passengers prevented from crossing would be left in a country without means of obtaining either food or shelter.

After a long and tiring day I arrived at Tartûs (Antaradus), which, with Ruad (Arvad, Aradus), I have already described in the *Quarterly Statement*,<sup>1</sup> and after some difficulty managed to hire a small room on the top of a house belonging to a kind and courteous young Christian of the Greek Church.

<sup>1</sup> *Quarterly Statement*, October, 1875, p. 218.

I was at first disposed to think that the ancient cemeteries of Tartûs, the Isle of Ruad, and Umrit (Marathus) lay along the sea coast almost continuously from the southern gate of Tartûs to the southern end of the ruins of Umrit, there being, in addition, numerous chambered tombs cut in the rocks above the last-named place. Since, however, it appears that the Aradians were for long time at variance with their neighbours of Marathus on the main land, it is perhaps more likely that, at all events in later times, they would have been compelled to bury their dead, not immediately opposite their island fastness between Antaradus and Marathus, but at a considerably greater distance towards the north, viz., near their land port, Karne, or Karnos, which lies nearly a mile northwards of Tartûs, and still bears the name of Karnun,<sup>1</sup> and where rock tombs actually exist. Anyhow, the limited size of the Isle of Aradus would have rendered burials impossible within its circumscribed area. Excavations would probably determine this interesting point. It is worthy of note that, so far as I could ascertain, the massive bronze rings, apparently leglets, to some of which, in most inconvenient fashion, a second ring of bronze is attached, come from graves situated immediately opposite the island. These objects seem to belong to a very early period. The wealth of antiquities found in and about this neighbourhood is indeed surprising, and I know of no place in Syria where systematic excavations would be attended with more brilliant results.

Between Tartûs and Tripoli I witnessed a beautiful sight. The autumn rains had fallen, and the sand-hills near the sea, near the Eleutheru, or Nahr-el-Kebîr, at the "Entering in of Hamath," were covered with the black tents of the Bedawin, who had come down from the interior to sow their grain, and who were seen far and near turning up the rich dark soil of the plain with their primitive ploughs, to which sorry little black oxen were attached. The day was sultry and thundery, and I encountered and followed for some distance along the flat ground an immense black snake, which could not have been less than ten feet in length. A little further on I saw a Bedawin woman and her dusky imp stoning to death a small specimen of the same species. I should not have supposed from its appearance that this kind of serpent was poisonous, but my muleteer declared that it was so, and asserted that in the hot weather of summer it "stood on its tail," and with loud hisses struck at passengers who were unlucky enough to meet it. Near the Nahr-el-Bârid I struck into the new road which has been constructed by a foreign company, and leads from Tripoli to Homs.

From Tripoli I returned to Beirût by sea.

<sup>1</sup> *Cf.* Strabo, 753.

## THE HITTITE LANGUAGE.

(1.) *Method of Study.*

SINCE the publication of *Altaic Hieroglyphs*, I have devoted time to the verification of the sounds proposed for Hittite words, by the aid of living languages, which serve to check the results of cuneiform study respecting the ancient Turanian languages of Western Asia. As the results have formed a lengthy MS., I propose to give an abstract of the more striking confirmations of the original thesis, which was to the effect that the Hittite language must have belonged to the same group to which the Akkadian, Susian, and Medic—the old Turanian tongues of Chaldea and Media—belong.

It appears to be now admitted that the Hittites were a Tartar people, and their language should therefore belong to the Turko-Tartar group. The Medic is pretty generally admitted to have been nearest to this group, but the Akkadian has generally been thought to be nearer to the Finnic languages. Lenormant, however, found that Akkadian grammar (especially that of the verb) was nearest to the Manchu-Tartar, which represents a very archaic condition of speech; and he also considered that the Ugrian languages were nearer than the Finnic to Akkadian. The geographical position of Chaldea would render this natural, and the fact that the Akkadian numerals are nearer to the Turkish and to the Tartar is another important consideration. After having compared nearly 400 Akkadian words with Tartar and Finnic roots, it seems to me clear that the Tartar are usually nearest to the Akkadian. I find also that out of about 220 known Medic words 60 or 70 are radically connected with Akkadian words, so that if Medic be regarded as a Turko-Tartar language, the older Akkadian belonging to a period when the various branches of Turanian speech were perhaps less distinguishable, should also probably be classed as Turko-Tartar. In modern Turkish I find nearly 200 words which may be compared very closely with Akkadian. Some of these are dissyllables like *bantuk* (Akkad. *Bulug*), "division;" or *Aka* and *Agha* (Akkad. *Aga*), "prince." But *Gaiwak* (Akkadian *Guk*), "blue;" *Pala* (Akkad. *Pal*), "sword;" *Ak* (Akkadian *Ak*), "white;" and the rest represent the more numerous class of ancient monosyllabic words common to Chinese, Mongol, and Tartar languages.

Taking for comparison the dead languages, Akkadian, Medic, Susian, and the dialect of Malamir, I have only accepted for use as a rule words common to two or more of these dialects. Among living languages I have placed first the Turko-Tartar dialects, second the Ugrian, and third the Finnic. I have also given attention to the Etruscan language, of which about 250 words are known, and which is comparable on the one side with Basque and with Ugro-Finnic speech, and on the other with Akkadian. Mongol and Chinese words are also in some cases valuable for comparison. As regards grammatical construction I have studied

the Akkadian, Medic, Susian, and Etruscan, and among living languages the Turkish, Hungarian, and Basque. It appears to me, therefore, that any objection that might be raised to the exclusive use of Akkadian for purposes of comparison will not apply to the present enquiry.

As regards the sources of information respecting the Hittite language, they consist in (1) the names of 30 Hittite Kings; (2) the names of 200 Hittite towns; (3) the sounds recoverable through the Cypriote and other syllabaries as belonging to symbols on the monuments of Syria and Asia Minor. The fact that the Hittite language is comparable to the dialects of Asia Minor, Cappadocia, and the Vannic region, has long been regarded as probable. In many striking instances the royal names of tribes in these regions are comparable with both Akkadian, Medic, and Turko-Tartar words of suitable meaning, and while I believe that the name Hittite should be confined to one tribe dwelling in Northern Syria, it seems to me clear that the Canaanites (especially in the north) belonged to the same stock with the Medes and Akkadians, and with the Asia Minor tribes who afterwards spread to Greece and to Italy.

### (2.) *Royal Names.*

As regards the royal names, there are several words which recur in these names and which are very distinctive of Turko-Tartar speech. Of these the most important, perhaps, is that occurring in the forms *Tarka*, *Tarku*, *Tarkon*, and *Tarkhu*. Thus we have—

Tarka tasas,	King of the Hittites.
Tarka nanas,	„ „
Tarku timme,	„ Erme.
Tarkon dimotos,	„ Cilicia.
Tarkhu lara,	„ Gamgami.
Tarkhu nazi,	„ Milid.

This word is known in the Etruscan names *Tarkon*, *Tarchu*, *Tarchinas*, *Tarcnal*, *Tarchi*, *Tarcna* (Dennis, "Etruria," ii, pp. 41, 44, 102), and is familiar to us as *Tarquin*. It is a regular Tartar word for "chief," as in the Uigur *Tarkhan* and Tschuwash *Taryan* or *Toryan* (Vambéry, *Reise* 182, p. 170), and is used as *Tarkhan* in Siberian (Taylor, "Etruscan Res.," p. 79). Vambéry would render it "chief of the tribe," from *Tar* or *Tur*, "tribe," and *Kha* or *Khan*, "chief."

The word *Tar* or *Tur*, however, itself means chief. It seems to occur in the names—

Tartisebu,	King of the Hittites.
Tatar,	„ „ „
Totar	„ „ „
Motur	„ „ „

It is indeed a very widely spread Turanian term, recognisable, according

to Vambéry, in the names Tartar and Turk and the Uigur *Töre*, "prince" (Vambéry, Root 197, p. 184), with the radical meaning of "foremost." In Akkadian *Dur* means "chief," and in Media it is *Tar*. To the same root the word *Tara* or *Dara*, for "God," is probably to be ascribed, as in the Esthonian *Tara* and the Ostiac and Wogul *toräm*, "heaven." The names of Tar and Tarku, deities of Asia Minor, the Akkadian Istar (Ashtoreth), the name Dara for the God Ea, and Dar for the God Asshur, may be compared with the Finnic *Tara* (see Donner, i, p. 127), for "God," and with the Etruscan Turan for the dawn goddess ("Etr. Res.," p. 134). There was a Hittite goddess called Antarta, or Astarta. In modern Turkish  $\text{تارا}$  (*dara*) means "a prince."<sup>1</sup> In Tschuwash *Tara* is "God."

Connected with this word is the word Sar, which occurs in the names—

Sap sar,	King of the Hittites,
Maurasar,	„ „ „
Kausira,	„ „ „
Khetasar,	„ „ „
Sarduris,	„ „ Van,

and many others. This word, though used in Semitic languages to mean "chief," can hardly be regarded as Semitic in the Hittite names, being affixed and not prefixed. In Egypt the word *Sar*, for chief, is traced back to the times of the ancient empire before the Semitic invasion ("Pierret, Vocab.," p. 515). It is used in Akkadian for "chief," and is represented by the modern title of Tzar or Czar, in Russia. It may be compared with the Samoyedic *Jaru*, "lord" (j and r being interchangeable in these languages), and with the Etruscan *Lar* (l and r being interchangeable). The form *lar* seems to occur in the name of the Gangam chief, Tarkhulara. In Turko-Tartar dialects *Sar* or *Ser* means "strong" (Vambéry, p. 145). In Finnic speech *Ser* and *Sur* mean "high" and "great." Like the preceding words Sar appears, therefore, to be a widely-spread Tartar or Altaic word for a person of dignity and power.

The word Lel or Lul also seems to be recognisable in the names—

Sap lel,	King of the Hittites.
Sapa lului,	„ „ Patinai.
Lalli,	„ Milid.

This may be compared with the Akkadian *Lul* or *Lil*, "king," *Lala*, "ruler." The Hunns called their chiefs *Luli* ("Etr. Res.," p. 323), and since the word Sap means apparently a soldier (from the Tartar root *Sap*, "to strike" or "cleave"—Vambéry, No. 153, p. 142—also found in Finnic, Donner, ii, p. 100—and in the Akkadian *Zab*, "soldier," *Sapar*,

<sup>1</sup> There is another widely-spread word, *Tur*, for "son," and another *Tur*, for "camp."

"sword," and the *Medie Sabaruk*, "war"), it would appear that *Saplol* means "warrior king."

Another word which seems closely to connect the Hittite and the Akkadian is the name *Ispu* or *Esebu*. It occurs in the cases of—

Tartisebu,	King of the Hittites.
Akitisebu,	„ „ „
Ispuinis,	„ Van.

In Akkadian *Ispu* or *Esebu* signifies "prince;" *Sib* also means "king" and "shepherd;" and *Sibir* means "harvest." These words seem to be explained by the Tartar root *Sab*, *Sjib*, *jip*, *jüp* (Vambéry, No. 37, p. 35), meaning "to gather" or "bind," while in Finnic *Sap* means "to squeeze" (Donner, ii, p. 62). Thus the shepherd (*Sib*) is the gatherer, the king is he who gathers people like sheep, the harvest is the gathering of corn.

Other tolerably clear Tartar words recognisable in Hittite royal names are (1) *Aka*, "prince"—Akkadian *Aga*, Turkish *Aka* or *Agha*, Uigur *ige*, Cagataish *ege*, Jakut *icci*. (2) *Ir*, "man"—Akkadian *Eri*, Manchu *Eri*, Turkish *ı*, or, Tschuwash *ur*. In Magyar *ur* means "lord;" in *Medie Ersa* is "great." (3) *Kal*, "strong," "big"—Akkadian *gal*, Susian *Khal*, Turko-Tartar *Khal*, *Khil*, *Khol* (Vambéry, No. 72, p. 67). (4) *Lab*, "brave"—Akkadian *Lab*, *Lib*, Susian *Libak*, Turko-Tartar *Lap* or *Lab*, "strong" (Vambéry, No. 131, p. 120), Turkish *لب*, *alb*, "brave." (5) *Nazi*, "prince," as in Susian and Akkadian. (6) *Bakh*, "king"—Akkadian *Pakh*, Turko-Tartar *Baj*, *Big*, *Bik*, "prince" (Vambéry, No. 205, p. 194.) Turkish *بك*, *bek*, "chief" *پك* *pek* "strong." (7) *Pas*, "chief"—Turko-Tartar *bas*, *bash*, *pash*, "chief" (Vambéry, p. 195), Turkish *پاشا* *pasha*. (8) *Sun*, "majestic"—Turkish *سان*, *san*, "dignity," *Medie sanu*, "powerful," *Sunku*, "ruler," Susian *Sunkik*, Malamisir *Sunkip*, all from the same root. These, with a few others, enable us to translate nearly all the Hittite royal names in an appropriate manner.

It is to be noticed that these proper names often end in *s*, which was thus probably a personal suffix, as for instance, *Pais*, *Kalbatas*, *Samaritas*, *Kamais*, *Tarkatasas*, *Tarkananas*, *Zuazas*. The Cassite proper names, and a good many Akkadian proper names, have the same ending in *s*, as have many names from Asia Minor. The same termination occurs in Etruscan (*e.g.*, *Truials*, "a Trojan," *Huins*, "a Hunn," &c.). In Akkadian we have the word *Sa*, "man," which is perhaps the root whence the third person singular in *s*, common to many Ugric and Turkic languages, is derived. In Hungarian (Singer, "Hung. Lang.," p. 84) *es* is a suffix for the agent. The termination in *s* thus agrees with the fourteen words above mentioned in indicating very clearly the Turanian and Tartar derivation of the Hittite proper names for chiefs.



(3.) *Town Names.*

The geographical lists of the Temple of Karnak furnish a yet larger number of non-Semitic names in the Hittite country for analysis. There are difficulties in treating this list since some of the names are pretty certainly Semitic, while in some cases the transliteration is doubtful and in others the name is defaced. A comparative study, however, enables us to recognise certain Tartar roots in this nomenclature, and it has long been the opinion of competent scholars that the language represented by the town names of Northern Syria was neither Semitic nor Aryan, but presented (as do the personal names) the preposition of the defining word which distinguishes Turanian tongues.

1. Perhaps the best instance occurs in the case of the root *ab* or *eb*, as in the names—

Terab.	Rutub.	Tatup.
Nautab.	Papab.	Letep.
Nirab.	Kharab.	Ganiab.

In these cases the word seems clearly a suffix, or the defined word to which a defining word is prefixed. It may be compared with the Akkadian *ab*, "abode," and *ub*, *ib*, "region;" the Medic *up*, "city" (Lenormant); and the Chinese *ip*, "region." In Turko-Tartar dialects *eb* and *ev* signify "a house," from a root meaning "hollow" (Vambéry, No. 47, p. 43), and this is connected with the Turkish  $\text{او}$ , *ev*, "house."

2. A cognate word *Ai* occurs in the names—

Aai.	Aiberi.	Aaitua.
Unai.	Khataai.	

This might be the Akkadian *ai*, "mound," *E*, "house;" Medic *E*, "house" (Oppert, "Les Mèdes," p. 243); Malamir *E*, "temple" (Sayce, "Malamir," p. 103). In Turko-Tartar languages *oj*, *øj*, *ov*, *ev* mean "house." In Finnic languages *au*, *av*, *ou*, *oi* means "to excavate," having the same radical meaning as the Akkadian *E*, originally meaning a "hollow place," "cave," or "lair" (see Donner, ii, p. 91). From this root the name of *Ai* (Josh. vii, 2-5, Jer. xlix, 3) appears to be derived.

3. Another apparent root is *Ara* or *Ari*, as in—

Aari.	Aresa.
Aares.	Arinir.

This may be the Akkadian *Ari*, "flow," *Aria*, "river." In Turko-Tartar we find *Ir*, *iir*, *er*, "to flow" or "melt" (Vambéry, No. 45, p. 42), whence the Yakut *ürak*, "stream." In Hungarian *ar* means "stream" (Donner, i, p. 104), and in Basque *ur*, *ura*, is "water." In Turkish  $\text{ايرمك}$ , *irmak* is "river."

4. Though only twice found, the root *Atr* is very distinctive, as in—

Atriten.

Aternu.

In Etruscan the word *Atrium* is derived from this root, which is the Turko-Tartar *Tur*, "abide" (Vambéry, p. 185); Esthonian *terv*, "hall;" Magyar *ter* (Donner, i, p. 135). In Akkadian *Tir* is rendered "seat."

5. The root *Un*, or *Aun*, appears in the names—

Unai.

Aunuka.

Unpili.

With these we may compare the Akkadian *un, unu, unuy*, "city;" the Turkic *in*, Tcherkes *unuch*, Wogul *im*, Etruscan *un*, "city" ("Etr. Res.," p. 348). In Finnish *huone*, in Esthonian *hõne*, in Lapp *huanu*, in Hungarian *hon*, signify "house" or "home" (Donner, i, p. 95). This seems to be the Medic *anmuntū*, Susian *unman*, "house" (Oppert, "Les Medes," p. 244).

6. The Egyptians not distinguishing *l* and *r*, it is doubtful if the next root should be *aul* or *aur*, *aal* or *aar*. Compare—

Aarzakana.

Aarnir (thrice).

Aurpalna.

Aripenekha.

Aarta.

Aurma (twice).

In Akkadian *ur, urra*, means "foundation;" *ura, eri, or ala*, is "city." The Cagataish *orun* means "place" (Vambéry, p. 57); Turk *اورو* *aura*, "enclosure." In the Tartar dialects *l* and *r* are sometimes interchanged. *Aul* is a common Tartar word for "camp;" Tcheremiss *ala*, *ola*, "town;" Mongol *ordu* "camp;" Khitan *woolutu*, Turkish *اولو* *aula*, "courtyard;" Etruscan *Vol, Vol*, "town" or "settlement" (Taylor, "Etr. Res.," p. 346).

7. The root *Ben* or *Ban* is also clear in the words—

Anaubenu.

Sesban.

Atabana.

Aripenekha

It is, perhaps, to be compared with the Etruscan *phanu*, a "fane;" or with the Akkadian *pin*, "foundation," *apin*, "city;" Chinese *pin*, "settlement."

8. The root *Beg*, *Bug*, or *Puk* occurs in the words—

Sutekh-bek.

Pukiu.

Suki-beki.

As the first of these words seems to contain the name of Sutekh or Set—a Hittite deity—Bek may mean a "shrine," like the Akkadian *abipni* and the Malamid *bukti* (Sayce, "Malamir," p. 81). But, as already noted, the

Tartar root *B-k* means "strong," whence the Uigur *beük*, "a fortress," and this may be the true meaning of the Akkadian and Malamid words.

9. The root Kan or Gan occurs as a prefix in two names, and suffixed two others—

Tepkenna.	Ganiab (or Kainab).
Shauraganna.	Kaniretu.

In Akkadian *gan, gin, gan, gina*, signifies "enclosure," perhaps the Tartar *jan*, "wall" (Vambéry, p. 112): It recalls the Semitic word for "garden," but where suffixed can hardly be a Semitic word.

10. The word Kar, "fortress," is also recognisable in the names —

Atakar.	Karkamasha.
Karmata.	Tsatsakar.

In Akkadian *Kar, Kir, Khar, Gar*, or *Khar* is rendered "fortress" or "enclosure;" Mongol *Hur*, "enclosure;" Etruscan *Cere*, "town." The Turko-Tartar *Khar, Khor, Kür, Gür*, mean "to surround" (Vambéry, No. 86, p. 81). The Finnic *Kar, Ker, Kir, Kor*, means "round" (Donner, i, p. 48). In Wotiak and Zirianian *Kar* means "town."

11. The word Aker, perhaps from the same root, occurs in—

Akershaua.

This recalls the Lapp *Aker* and Etruscan *Ager* for a "field" or "enclosure" ("Etr. Res.," p. 333).

12. The root Khar or Khal is probably connected with the two last. It occurs in—

Khalka or Khalukka (Chalchis).
Khalres or Khallis (Killis or Kharis).

It is perhaps to be compared with *Khal*, "town," as in Medic, Susian, and the Malamid dialects (Sayce, "Malamir," p. 105).

13. The word Kur occurs in Tamakur; Akkadian *Kur*, Malamid *Karkha*, "mountain" (Sayce, "Malamir," p. 104); Basque *Kora*, "high;" Lapp *Kor*, "mountain;" Esthonian *Körge*, "high;" Tscheremiss *Korok*, Votiak *Gurez*, Permian *Keros*, "mountain." (Donner, i, pp. 35, 36.)

14. The syllable *Ma* occurs in—

Aama.	Mauraka.
Khatuma.	Mauthi.
Letama.	Mashaua.
Aurma.	Akama.

Lenormant ("Magic," Engl. Ed., p. 272) says that *Ma* joined to a town name means the region near a town. Lenormant and Delitzsch give *Ma* as an Akkadian word for "country." Mr. Pinches informs me that it is a rare word. In Finnish *Ma*, in Vogul *Ma*, in Zirianian *Ma*, signify "country."

15. The word *Mur* occurs in—

Murlakhna.  
Kamurupa (?).

Compare the Akkadian *Muru* and *Murub*, "city."

16. *Pil* or *Pir* is recognisable in—

Piltau.  
Aunpili.  
Aubillina.

This is probably the Ostiak *Pil*, Andi *pil*, Mongol *Bohlek*, Etruscan *Pila* "mountain" ("Etr. Res.," p. 330). In Samoyedic *filolo* means "high."

17. The root *Su* seems to occur in—

Buresu.  
Tsaresu.  
Tariunsu.

This is no doubt the Tartar *Su*, "water" (Vambéry, No. 167, p. 154), as in the Tschuwash *Su*, "stream;" Turkish *صو*, *Su*, "river" or "water." The same root occurs also in Finnic languages (Donner, i, pp. 100, 157).

18. *Ta* as a suffix is recognisable in—

Tarita.	Abta.
Aarta.	Abata.

It may be merely a grammatical form like the Mediae *ta*, Akkadian *da*, forming abstracts; but *Ta* is a widely spread Turanian word for "mountain," occurring as a suffix in names like *Altai*, *Aktu*, &c. In Etruscan it appears as *Te* ("Etr. Res.," p. 346); in Turkish as *Dagh* داغ. In Ostiak *tei* means "a peak" (Donner, i, p. 161).

19. *Tama*, a distinctive Tartar word, occurs in—

Tamakua.  
Aatatama.  
Tamakur.

In Khitan and Manchu *tama* means "enclosure" ("J. R. A. S.," xiii, ii, p. 124). In Cagataish *tam*, *tim*, is "a building" (Vambéry, No. 170, p. 166). In Akkadian *Tami* is translated "shrine," or "building."

20. The root *Tar* seems clearly traceable in—

Tarebu.	Tarita.
Tariunsu.	Tarekh.

This is a common Tartar word for "narrow" or "gathering" (Vambéry, p. 169). Compare the Turkish دره *dereh*, "valley."

21. The word *Tep* occurs probably in—*Tepkenna.*

This is probably the Altaic *töbe*, *Tchuwash töbe*, "hill" (Vambéry, No. 192, p. 178). Turkish *tepe*, "hill." It is also found in the Finnish *täppiira*, *täpöle*, "a hill" (Donner, i, p. 150); and in the Mongol *dobo*, and Etruscan *Tepæ* ("Etr. Res.," p. 330).

22. *Tur* or *Tul* is probably to be found in—*Turmanna* or *Tulmanna.**Turbanda* or *Tulbanda.*

In Akkadian we find *Tul*, "mound;" Hunnic *Teulo*, Etruscan *Tul*, "tumulus" ("Etr. Res.," p. 211); but if the word be *Tur* (which is equally probable) we must compare the Akkadian *Tur*, "abode," and the common Tartar and Turkish root *Tur*, "to dwell," whence the Turkish *طورعق* *dourmak*, "dwell," and the Siberian, Mongol, Tartar, and Samoyedic *turo*, "tent" ("Etr. Res.," pp. 23, 344). In Finnic the word *tur*, "tribe," is no doubt connected (Donner, i, p. 130, and perhaps the Esthonian *turo*, "abode" (p. 135).

These roots are not peculiar to Hittite, nor do they exhaust the possible Tartar words recognisable in the list in question. The words *Kar*, *Gan*, *Ater*, and many yet more suggestive (*Palanda*, *Atarna*, *Arna*, *Perk*, *Gurus*, &c., &c.), recur again and again in the names of cities in Asia Minor, in Etruria, and even in Iberian Spain, wherever the Tartar stock to which the Hittites belonged, spread itself throughout Western Asia and Southern Europe. (See Hyde Clarke, "Inhabitants of Asia Minor," 1865.)

(4.) *Grammar.*

Before proceeding further, it is necessary to consider for a few moments the probable grammar of the Hittite language, by aid of the hints obtainable from the preceding lists, and through a comparative study of the grammars of Tartar, Ugric, and ancient Turanian languages. Languages and writing grow together. The earliest stage, in which grammar hardly existed, would be expressed by picture writing. Agglutinative languages can be expressed by hieroglyphics, but this is not the case with inflected languages, which require syllabaries, and which are best expressed by the alphabet. Thus a hieroglyphic system belongs to an agglutinative language; and to such an agglutinative tongue the hieroglyphics of Syria and Asia Minor are properly ascribed.

The most distinctive features of Turanian speech are: 1st. Agglutination, or the absence of inflexion. 2nd. Post-positions, or the placing of the root before its agglutinated syllables (though this is not an invariable rule). 3rd. Vowel harmony in derivatives, the weak root or agglutinated syllable agreeing in vowel sound with the noun-verb root. This does not

apply, as a rule, to compound words. In *Medic* such harmony is suggested by Oppert ("Les *Medes*," p. 39), and in Akkadian it is clearly visible in the pronouns and post-positions (see Bertin, "L'Incorporation Verbale", 4th. The distinctions of sound are much less precise in Turanian than in Semitic languages. Thus in *Medic*, Oppert only recognises eleven consonantal sounds, while, in the Tartar languages and in Basque, the interchangeability of various letters is equally remarkable. The peculiarities of the Cypriote syllabary seem to show that the sounds of vowels and consonants were also indefinite in Hittite.

The *Medic* and Akkadian differ in syntax from the living Turanian languages. The arrangement of the sentence, the position of the pronouns, and one or two other important particulars, show this difference; but the ancient and living languages agree in many equally important particulars, such as the position of the plural, the placing of the verb at the end of the phrase, and the use of post-positions.

In Akkadian, Sumerian, and *Medic* the order of the sentence is *object + subject + verb*, whereas in Turkish it is *subject + object + verb*. In the more certainly understood Etruscan texts the ancient order seems to be observed. In Hungarian the rule is very variable (Singer, "Hungarian Language," p. 87). In Basque the order is the same as in Turkish (Van Eys, "Basque Language," p. 49).

The use of "packets" in Akkadian, or, in other words, the rule that only the last word in an enumeration takes the case suffix is observable in Basque (Van Eys, p. 45), and it survives to a certain extent also in Turkish (Redhouse, "Turkish Language," p. 165).

The arrangement whereby the defining word (such as the genitive) precedes the defined word, is a distinctive mark of Turanian speech, but in the ancient languages the rule is not inflexible. In Akkadian we find the genitive both preceding and following, and the genitive affix is in the first case omitted, but added to the genitive when it follows (e.g., *Mu-ir*, "city of the ship;" *Damkina*, "woman of the earth," &c.). In *Medic*, also, it is found that the genitive may follow or precede, and when it follows, the genitive suffix is attached to it (Oppert, "Les *Medes*," p. 100). In Turkish there are four possible arrangements. The genitive with its suffix sometimes precedes (Redhouse, p. 163), and this is also the case in Basque (Van Eys, p. 46).

In Tcheremiss the genitive, without case affix, precedes its nominative, as in *Medic*. In Votiac it is placed indifferently before or after ("Magia," Engl. Ed., pp. 284, 285). In Hungarian the prefixed genitive without mark of case also occurs (Singer, p. 10).

In Hittite the genitive appears in some cases to precede without any case suffix (see *Kheta-sar*, "Chief of the Hittites;" *Khataai*, "House of the Hittites;" *Sutekh-bek*, "Shrine of Sutekh"). In other cases it seems to follow (as is clear from the bilingual boss), which may lead us to render *Aurpalna*, "City of the Chief;" *Tarmazana*, "Camp of the King," the final *na* being the case suffix. In the cases *Tartiseba* and *Akicisba*, the prefixed word appears to have an affixed particle, *ta* or *t*, which is

either a case ending or the sign of the abstract (*ta* in Medic, *da* in Akkadian).

The position of the adjective is also very variable in the languages under consideration.

In Medic the adjective follows its noun, but in the earlier Akkadian it appears sometimes to have preceded it. In Chinese the adjective precedes the noun (Max Müller, "Science of Language," 5th edition, p. 122), and Lenormant regards this as the more ancient Turanian structure. In Turkish all the adjectives precede the noun and remain uninflected (Redhouse, p. 68). In Basque, on the contrary, the adjective follows, and Lenormant has pointed out ("Magie," French Edition) that this archaic language much resembles Akkadian in structure. In Hungarian the adjective may follow or precede, but when preceding remains invariable (Singer, p. 26). Judging from the words *gialla* and *Lugal*, it would seem that the prefixed adjective may also have occurred in Akkadian. The signs *a* and *ga*, and *li*, are adjective affixes in Akkadian, and in some living tongues, when the adjective follows the noun.

The lists under consideration seem to show that in Hittite, as in Hungarian, both positions are possible for the adjective. *Khalukka* may mean "great town" (*ukka*, "great"), but *Galbatus* might mean "great ruler" (*gal*, "big"); *Aunpili*, "mountain town," may present an adjective, *pili* from *pil*, "a hill." *Tamakua*, "lofty building;" *Lalli* ("princely") and *Tarkhulara* are other possible instances of Hittite adjectives. When preceding the noun, we see, from what has been said above, that the adjective would probably present no affix, but consist simply of the root.

Gender, properly speaking, does not exist in the languages to be considered. Even the pronouns have no gender in Akkadian or in Turkish. There is no gender in Basque, Hungarian, or Turkish, or in Akkadian or Medic. The sex may be distinguished, in some cases, by a prefix, like the Hungarian male prefix (Singer, p. 82) for animals, or the Turkish female prefix *dishi* (Redhouse, p. 51). In Akkadian there appears to have been a male affix (e.g., *lu-nit*, "sheep-male"), like the Hungarian female affix *ne* ("wife").

The position of the plural is the same in the ancient and in the living languages, but the words used for plurals are very various. In Medic the plural affixed to the root precedes the case suffix (*Ain-ip-irra* "of the Kings"), and the same order occurs in Hungarian and in Turkish (see Sayce, "Malamir," p. 72, Singer, p. 14, Redhouse, p. 51). I believe that this was clearly the case also in Hittite (see the second word on the first Hamath stone when the plural precedes the termination *li*).

The position of the verb at the end of the sentence distinguishes the languages under consideration from the Semitic and from the Egyptian.

The root, properly speaking, appears to be the imperative, as in Turkish, and the noun may be either the root or may take an affix, such as *Ak*, *Pi*, *Es*, representing the agent or distinguishing the case. From one point of view there is no true verb in the ancient languages, and the

tense is said by some scholars not to be distinguished in Akkadian. In Basque the past tense is distinguished by an affixed *n* and the infinitive is unknown (Van Eys, p. 47). In the earlier languages the passive is represented by the auxiliary *du*, "come" or "become" (literally "go," as in many early languages—Max Müller, "Science of Lang.," 5th ed., p. 339), and the active by *ma*, "be." The auxiliary, with these exceptions, precedes the verb in Akkadian, which is not the case in the later living languages. A reduplication of the root is said by Max Müller to be frequently used for the past. Such re-duplication occurs in Akkadian (*e.g.*, *yamgam*, *dadu*, &c.), but does not seem to have been recognised as a mark of tense. The adverb and the adjective are the same in Turkish (Redhouse, p. 73), and were no doubt indistinguishable in the ancient languages. The periphrastic construction, which Lenormant considered a striking peculiarity of Akkadian ("Magic," Engl. Ed., p. 278), occurs in other languages of Turanian origin, as, for instance, in the Basque (Van Eys, p. 34).

The syntax of the verb and the positions of the pronouns are of special importance to our enquiry.

In the more modern languages the verb is conjugated, the personal suffix following the root, but in the ancient Akkadian this is not the case. The pronoun there precedes the root, just as it does in Basque, without personal suffix. Lenormant remarks that the old structure, with a simple verb root, preceded by the governing pronoun, still exists in Mongolic and in the Manchu-Tartar.<sup>1</sup> In Chinese, also, the governing pronoun precedes ("Magic," Engl. Ed., p. 285).

In Medic, we find the order of the transitive verb to be governing pronoun + governed pronoun + verb (*U-ir-halpiyu*, "I him killed"), which is the same as in Akkadian. In Basque the order would be "him killed I," and in Turkish "I him killed-I." In Etruscan the order is not so clear, but appears to have been "him I killed." In Hittite we may expect the pronoun to precede the simple verb root, and the governing pronoun probably preceded the governed, as in Akkadian or Medic.

The pronouns are very constant parts of speech in these languages. Being originally nouns the words came with the advance of language to be used as demonstratives, and then specialised as pronouns. M. Bertin has shown this in the case of Akkadian ("L'Incorporation Verbale"), and it is also noted in Medic and in Basque (Van Eys, p. 16). The possessive pronoun is affixed to the noun in Akkadian and in Medic, just as in Turkish, in Hungarian, or in Basque.

The position of the numeral is very constant. It precedes the noun, and the ordinal, &c., are distinguished from the cardinal by affixes.

The use of post-positions instead of prepositions is one of the distinctive features of the languages under consideration. These words, as will

<sup>1</sup> Dr. Oppert conjugates the Medic verb. Dr. Sayce disputes this ("Malamir," p. 77). The Basque retains the old structure in the intransitive verb, which has no personal suffix (Van Eys, p. 31).



appear later, are wonderfully constant in the various languages. There are, however, certain preposed syllables (such as *gik* and *pir* in *Medic* which appear to be intensitives. These are to be compared with the Turkish intensitive prefixes to adjectives, and are said by Lenormant to be also traceable in Ostiak, Hungarian, Lapp, and Esthonian. The pre-cative or exclamation is also preposed. The conjunction naturally is not.

Two preposed syllables in Akkadian and *Medic* are regarded by Lenormant as unknown in later languages. One of these is *It* or *Id*, supposed to mark locality; the other is *ki*, which is apparently nearest to the English "as" or "who." In Turkish *ta* and *ki* are suffixes of a somewhat similar character. In Hungarian *az* prefixed is the definite article.

These notes give us a fair idea of the probabilities of Hittite grammar, and it will appear that the evidence of the texts quite agrees with the general principles laid down.

#### (5.) *The Syllabaries.*

The sounds belonging to the Hittite emblems are to be recovered mainly from the Cypriote and other allied syllabaries. This is generally admitted, but a few general remarks may be necessary.

The syllabary as a rule gives us only one sound for one emblem. Now as regards at least the strong or noun-verb emblems in the Hittite, it is evident that they would have been connected (just as is the case in cuneiform) with more than one sound. It is improbable that the language could have been so poor as to possess only one word for any object, and indeed the evidence of the lists just consulted proves that this was not the case. It is pretty clear, therefore, that more than one sound may have survived in syllabic forms derived from a hieroglyph, and the case will be considerably strengthened by the discovery of two or more syllables having a common origin. Thus the Cypriote *pi* has the same form as the Carian *s*, both being derived from an emblem which appears to have been a personal suffix in Hittite.

On the other hand, more than one emblem is used for certain sounds in the Cypriote. There are two forms of *Le*, of *Pe*, and of *Pi*, which it is almost impossible to regard as derived from one original hieroglyph. The reason is found in the well known fact that in Tartar languages, as in Chinese, roots of very different meaning have often the same or very closely similar sounds.

The Cypriote syllabary as at present known consists of fifty-four open syllables (*i.e.*, single consonants followed by single vowels), to which it has been proposed to add four closed syllables—*nos*, *man*, *gon*, *ros*. The existence of these four last appears to me to be more than doubtful. In the use of the syllabary by the Greeks double consonants are not represented (*ll* is *le*, *mm* is *me*, *gk* is *ke*, &c.), whereas closed syllables would have enabled the writers to overcome this difficulty. In many cases the *n* is omitted (*A-to ro-po-se*, for *Anthropos*, &c.), and it will be noted that

three out of the four supposed close syllables include this letter. They may, therefore, I believe, be quite as properly read *os* (or *so*), *nos*, and *go*. As to *ros*, its existence is still problematical.

The sounds of the syllabaries are as indefinite as were those of the language originally represented. K, C, G and Kh are not distinguished, nor are T and D, or P and B, or M and V, while there is good reason to suppose that L and R were occasionally interchanged. All these sounds are equally indefinite in Akkadian and in Media, as also in the living Tartar dialects. The vowel sounds appear also to have been indefinite. Thus the emblem *Mi* had also the sound *Me* or *Ma*, as we see clearly from its use to spell the Semitic word Melek or Malak.

In Cypriote the inverted vowel sound is not found, but the original hieroglyphs—at least in the case of the weak roots—probably possessed such inverted sound. Thus, in Akkadian, the third pronoun appears as *Na*, *Ne*, *Ni*, *In*, *En*, *An*, in accordance with the law of phonetic harmony, while such words as *Um*, “flame,” and *Mu*, “burn,” give a similar inversion. So in Tartar languages the inversion is commonly found.

The final *n* and *m* are weak letters very often dropped in both the ancient and the living languages. Hence, even in spelling Greek, we find these letters dropped as finals. They may often have belonged to the original hieroglyph, and in certain cases, such as the short *a*, *e*, *i*, which are used also for *an*, *en*, *in*, it is legitimate to restore the *n* to the hieroglyph.

The Hittite system appears to have consisted of about 120 emblems, and the syllabaries would thus allow of our recovering about half the sounds. The other half may have been closed syllables, or even polysyllables, which would account for their disuse in a late syllabic system.<sup>1</sup>

The emblems may be divided into strong and weak roots or noun-verbs, and attached grammatical forms. I have already pointed out that the suffixes on the texts are generally smaller than the noun-verbs, and the packets indicated by single emblems and by phrase dividers. The sounds may be taken in order as follows:—

#### (6.) *Weak Roots.*

These prefixes and suffixes are more valuable than the nouns, because of the greater frequency of their occurrence and because of the grammatical indications recognisable in their relative positions.

*Aa*, *Ya*, *Au*.—Emblem, a vase. In Cypriote it has all three values. In Carian it stands for *a*. In Akkadian *a* means “water.” Susian, *a*. Vogul, *ya* or *ye*. Zirianian, *yu*. The emblem occurs more than forty times in Hittite texts, and may at times be a noun, at times an affix. So in Akkadian the emblem *a*, originally representing water, is used not only for the noun but also for the participle termination *a*. In twenty cases the emblem on the Hittite texts appears to be a prefix

<sup>1</sup> Thus in the Media and other simple systems we find about half the emblems to be open syllables and half closed.

at the top of the line, in eight it is in the middle, and in twelve at the bottom, but when at the top it is sometimes part of a suffix of a word occupying two columns (as in the earliest cuneiform texts). In sixteen cases we find the group *a-ne* or *an*, perhaps like the Etruscan termination *an* for the participle ("Etr. Res.," p. 287); *an* or *van* is a common participial form in Akkadian, in Medic, and in Turkic, Mongolic, and Finnic languages. In Hungarian *Van*, "to be," is used for the auxiliary "to have" (Singer, p. 10).

The emblem appears also to occur for a noun in the names of deities on the Hittite texts.

WEAK ROOTS.

- |   |  |  |                       |    |          |   |  |  |  |           |                                 |
|---|--|--|-----------------------|----|----------|---|--|--|--|-----------|---------------------------------|
| 1 |  |  | <i>ga</i>             |    | <i>a</i> | 9 |  |  |  | <i>no</i> |                                 |
| 2 |  |  | <i>ga</i>             | 10 |          |   |  |  |  |           | <i>pe</i> , <i>s</i>            |
| 3 |  |  | <i>ka</i>             | 11 |          |   |  |  |  |           | <i>bo</i>                       |
| 4 |  |  | <i>ke</i>             | 12 |          |   |  |  |  |           | <i>er</i> , <i>na</i>           |
| 5 |  |  | <i>te</i> , <i>le</i> | 13 |          |   |  |  |  |           | <i>sa</i>                       |
| 6 |  |  | <i>me</i>             | 14 |          |   |  |  |  |           | <i>ti</i>                       |
| 7 |  |  | <i>mo</i>             | 15 |          |   |  |  |  |           | <i>os</i> , <i>zu</i>           |
| 8 |  |  | <i>ne</i>             | 16 |          |   |  |  |  |           | <i>u</i> , <i>a</i> , <i>ak</i> |

*Ga.*— Emblem, a crook. This is a rare Cypriote sign. In Akkadian *ga* means "turn." In Tartar languages *ag* or *eg* means "to bend" or

"curve" (Vambéry, No. 31, p. 27). There are fourteen known cases on the texts. In one the emblem is a prefix, in the rest apparently a suffix. In Akkadian *ga*, *gi*, *gu* is an exclamation—prefixed; as a suffix *ga* forms the adjective (Sayce, "Assyr. Grammar," p. 20, No. 227), like the Medic *iki* and Susian *ak*.



*Ka*.—The emblem is called a shaduf by Sayce. It appears to be a suffix of case occurring sometimes at the close of an enumeration, or "packet." At Hamath there are thirty instances, but only twelve on other monuments. From some texts it is entirely absent. In Akkadian *Ku* means "to" or "towards;" Medic *ikki*, "to;" Susian, *iki* or *ki*, "with." In Turkish we have the dative *ke*, *ga*, or *ge*; in Hungarian the suffix *ig*, "as far as;" in Basque *ko* or *go* means "from," and *ka* "with" or "at." At Ibreez the text by the god's head begins *Ka-ne*, or *Kan*, recalling the Etruscan *Ken*, "this," which commences inscriptions, and the Akkadian *gan*, "this."

*Ki*.—The emblem has a phallic appearance, recalling the the Akkadian *Uk*, "male," from which root the affix of the agent common to so many Tartar and Finnic languages may be derived. In Basque the affix of the agent is *-k*, and many Turkish nouns have this termination. It is also observable in Susian and at Malamir (Sayce, "Malamir," p. 74). There are about forty cases on the Hittite monuments, in three of which it seems to be clearly a prefix, recalling the peculiar Akkadian prefix *Ki* already mentioned. It also seems to occur re-duplicated in twelve cases, to be read *Keke* or *Kek*, recalling the Akkadian *Kak*, "to make." In three cases we find a suffix *Me-ke* or *Mak*, recalling the Turkish *mak* or *mek*, which forms the infinitive, the patient, and the participle. In Medic the termination *meske* seems to be of similar value; at Malamir, also, we find the suffix *mak* (Sayce, p. 74). The combination *Ke-ti* occurs once (and perhaps thrice), perhaps the Akkadian *Kit*, "with," Medic *Kutta*, "also." We also find *Ke-ga* apparently as a prefix, like the Medic intensitive *gik*, the Turkish *چوک*, *chok*, "much." The emblem is often suffixed to emblems apparently nouns, such as *Tarake*, *Anake*, &c., on the Hittite texts.

*Lu* or *Li*.—This appears to be a yoke. Compare the Akkadian *lu*, "yoke," perhaps the Tartar *Il*, *ol*, *ul*, "to bind together" (Vambéry No. 42, p. 39). It is always an affix, like the Akkadian *li*, said by Lenormant to represent action done by a person ("Magic," Engl. Ed., p. 272). In Turkish, *لو* *lu* and *لي* *li* is the termination of adjectives of possession. In Yakut *li* is the adverbial suffix. The nearest English word appears to be "with." In Hungarian *ul* is an adjective ending (Singer, p. 86). This emblem in Hittite occurs more than once repeated in an enumeration, apparently of adjectives or adverbs governed by a case-ending *ka*. There are more than fifty cases of this emblem. In seven cases it is preceded by the plural *ne* representing a plural adjective. In four cases we find *ne-li*,

perhaps like the Etruscan *nal*, meaning "he with," as a termination of proper names.

*Me*.—The emblem consists of four strokes. Its value is derived from the bilingual. It cannot represent the number 4 because it is not a prefix, and it is very improbable that No. 4 should occur frequently on texts where no other numbers are represented. I believe it to form the plural (as in other hieroglyphic systems) like the Susian, Akkadian, and Malamir *me*<sup>1</sup> (Sayce, "Malamir," pp. 40 and 75). There are about thirty known cases on the texts always as a suffix. The combinations *meke* and *meli* are mentioned previously. In two or three cases we find *Me-ti* or *Met*, perhaps like the Turkish *meh*, &c, which terminates names of actions.

*Mo*.—The emblem might represent the *Kteis*,<sup>2</sup> recalling the Turkish  *âm*; Tartar *Am*, *Em*, "female;" Akkadian *um* or *umu*. This emblem occurs both prefixed and suffixed, and seems to be the personal and possessive pronoun "I" and "me." In Akkadian it is found as *Am*, *Im*, *Um*, *Ma*, *Me*, *Mi*; in Medic *U* or *Vu*, "I," and *mi* "my;" Susian *Ma* or *Va*, "I;" Malamir *mi*, "mine;" Etruscan *ma*, "I" ("Etr. Res.," p. 284); Ostiak *ma*, Zirianian *me*, Samoyed *me*, "I." It is the Turkish  (-*m*), "my," but in Basque it becomes *ni*. Finnish *ma*, Esthonian *ma*, Lapp *man*, Tcheremiss *min*, Mongol *bi*, Manchu *bi*, and old Japanese *wa*. There are forty-eight known occurrences on Hittite texts, in most of which the emblem is a suffix. Texts occur, however, without a single occurrence which would agree with its use as a pronoun. Thus it is not found in the descriptive texts at Ibreez, nor is it known on seals (except Schlumberger, No. 18). The combination *mu-ne* occurs thrice, perhaps for "I him" or "me he," or perhaps the verbal termination—Medic *van*, Tartar *men*, Turkish *men*, Hungarian *van*, Akkadian *men*; but where it may be prefixed it recalls the frequent Akkadian prefix *mun*.

*Ni*.—This seems to represent the phallus, and it is the commonest of all the Hittite emblems. There are at least ninety-three occurrences, in twenty-four of which it is clearly prefixed. Thus, at Ibreez, it begins the text behind the King's head. The original meaning "man" or "person" survives in Turkic and Ugric speech (see the Etruscan *enna*, "Etr. Res.," p. 339). In fourteen cases this emblem is prefixed to the heads of animals on the Hittite texts, but these heads also occur without it. In Akkadian *ni* is often prefixed to the subject (Bertin, "J. R. A. S.," xvii, Part I). There are sixteen cases of *ane* as noticed already, four cases of *neli*, and one case of *nake*. This latter recalls the Etruscan *nak*, Hungarian *nak*, Ostiak *nak*,

<sup>1</sup> *Me* and *Mes* are both plurals, the second perhaps personal.

<sup>2</sup> It also closely resembles the cuneiform determinative for "female" in its oldest form, which had the value *Muk*, among others.

meaning "to" ("Etr. Res.," p. 309). In this instance *Zu-nâk* appears to mean "to thee"—see the Hungarian *nak, nek*, "belonging to" (Singer, pp. 9, 12). Also occurs in Akkadian.

In Akkadian *Na, Ne, Ni, Nu, An, En, In, Un*, are forms of the pronoun "he," "him," and (as an affix) "his." While the post-position for the genitive or ablative is also *na*. In Etruscan *na* is the genitive suffix. In Basque *-n* is the ablative and the demonstrative or relative pronoun (Van Eys, pp. 15, 16). *N* is the dative in many Turkic languages, and in Finnic signifies "belonging to." In Turkish it is the genitive, and forms the third personal pronoun. In Susian we have *na*, "of," and *ni*, "his;" and in Medic *na*, "of." The emblem also occurs prefixed to signs of action, as in Akkadian we have *Nigin*, "surround," from *gin*, "enclosure." There can be little doubt that the emblem in Hittite has the same force as in the other languages of the same class, and we have already seen that *na* appears to have been the Hittite genitive case ending in the names of towns.

*No* occurs only once, and resembles the sign of opposition in cuneiform and in Egyptian. It is a prefix—the proper position of the negative.

Akkadian *nu*, "not;" Medic and Malamir *inne*, Turkish *ñ ne*, "nor."

*Pi* or *S*.—The first is the Cypriote, the second the Carian value. There are sixteen or seventeen occurrences always beneath larger emblems, apparently nouns. The emblem seems to represent a pair, and might represent a dual or plural. Compare the Tartar *üb*, "pair" (Vambéry, No. 32, p. 29), the Akkadian *bi*, and the Basque *bi*, "two." The value *S* would also agree, since *S* is a Finnic and Tartar plural probably also recognisable in Akkadian, derivable from a root meaning "to cleave," as is also the dual *üb*. In Akkadian *ib* and *bi*, *es* or *se*, are personal affixes, and *ba, be, bi, bu, ab, eb, ib, ub* is a pronoun, "that one" (Bertin, "L'Incorporation Verbale," p. 3), which Lenormant says forms the absolute case ("Magic," Engl. Ed., p. 274), like the Lapp *b* or *e*, for the accusative, Tcheremiss *p*, Samoyedic *p*. Manchu *be*, and Turkish *bu*, "this one." In the Malamir dialect and in Medic, *pi* is supposed to be the relative (Sayce, "Malamir," p. 91), like the Akkadian *aba*, "who." In Finnish *pi* is the verbal pronoun, Esthonian *b*, Tcheremiss *be*, Yakut *by*, Yenissei and Samoyedic *ba*, "he who." The value *S* may be compared with the adverbial affix, Akkadian *as, es*, Tcheremiss *-s*, Lapp *-s*, Votjak *sa*, Mordvine *-z*. In Hungarian *as* or *es* is an adjective termination, and also stands for the agent (Singer, p. 85).

We have already seen that Hittite and other proper names often end in *s*.

*Po*.—This appears to represent a crook turned the opposite way to *pu*. Compare the Tartar root *Boj*, "to be bent" (Vambéry, No. 227, p. 210).

There are not more than twelve cases, in two of which it may be prefixed. It is perhaps to be compared to the Turkish *bu* بُو "this one," or the Medic *appo*, used for the relative (Oppert, "Les Medes," p. 277).

*Ra* or *Er*.—The value may be derived from the bilingual. There does not seem to be any clear occurrence at Hamath, and it is absent from some other texts. The emblem looks like a cord or whip—compare the Tartar *ör*, a "rope," "twist," or "pigtail" (Vambéry, No. 32, p. 28). There are about fourteen instances on one text (J. I.), and about twenty in all, in which this emblem appears infixed or suffixed.

Compare the Akkadian *Ra, Ri*, "to," "of," or "towards," incorporated in the verb. In Medic *Ra, Ri, Ir*, forms the adjective, the accusative, and the possessive (Oppert, "Les Medes," pp. 51, 279, 280). It occurs also at Malamir (Sayce, p. 102), and *Ir* means "him" in Susian and Medic. The case meaning seems to be connected with the old verb *Ra*, "go," the personal meaning would be from the root, *Er*, "man." In Basque, *ra* means "towards," and in Hungarian *ra, re*, means "upon;" on the Hittite texts we find the verbs, *In-tu-ra*, "gives to," and *In-du-ra*, "goes to;" also in four or five cases, *Ti-ra* or *Ter*, and once *Termu*, perhaps the Malamir *Tar* and *Tarma*, "all" (Sayce, "Malamir," p. 110).

*Sz*.—This comparison is due to Professor Sayce. The Hittite emblem seems to be a hook or sickle. *Sa* is a common Turanian word for a cutting instrument, as in the Abase *Sa*, "sword," Tcherkess *seh*, "knife," from the root *az* or *aj*, "to cleave" or "open" (Vambéry, pp. 1, 26; Taylor, "Etr. Res.," p. 335). There are some fourteen or fifteen cases of occurrence on the Hittite texts, in none of which it is clearly prefixed. *Ti-sa, li-sa, ne-sa, sa-li, sa-ne* all occur. In Akkadian, *sa* means "in;" Chinese *sa*, "interior;" Tartar *is üs*, "within;" *tis* means "interior" (Vambéry, p. xii., and No. 38, p. 35). In Basque, we find *-z*, "with" or "by." The participial ending in *s* is common to Hungarian, Tartar, and Turkish, and occurs in the Etruscan *as*. This seems to be a case ending in Hittite, *ne sa*, meaning "with him." *Tisa* may be compared with the adverbial ending *Thasa* or *Thas* in Etruscan ("Etr. Res.," p. 287); and *sa ne* might be compared with *isne*, "then," in Medic (Sayce, "Malamir," p. 104).

*Ti*.—There are two emblems very like yet distinct in Hittite, one an arrow, the other perhaps a spear. The arrow occurs ten times, five occurrences being as a prefix. The spear twenty-five times, eleven probably as a prefix, eight apparently infixed, and six affixed. The Tartar root, *At it*, means "to shoot" (Vambéry, No. 28, p. 25), which agrees with the form of the emblem.

In Akkadian and in Medic the syllables *It, Ta, Ti*, occur prefixed and affixed with a locative meaning. Akkadian *ta*, "at," "out of,"

“by” (Bertin, “L’Incorporation Verbale,” p. 3; Lenormant “Magic” Engl. Ed., p. 273). *Id* is a localising prefix in Akkadian; *It* or *Is* in Media; Etruscan *Eth* a localising prefix (“Etr. Res.,” p. 327), and *ZW* an abstract termination in Etruscan; Media *ta*, Akkadian *da*. In Turkish, the locative suffix *Ü ta*, “as far as” or “so that,” still exists (Redhouse, p. 156), and *da* is the sign of the locative case “in” (p. 52). The combination, *Ti-ka*, on the Hittite texts may mean “all” or “only,” and *ti-ke* might be compared with the Basque *tik*, “of” (Van Eys., p. 10).

It would seem that *Ti* prefixed is a locative, infixed it would form the abstract (compare the Media *hal-t-ik*, “enmity,” from *Khul*, “evil”). Affixed it may be the case ending meaning “in,” “at,” or “from.”

*Zu*, or *So*, or *Os*.—The sound is not very clear. The value *nos* may be rejected for reasons already given. There is, however, a Cypriote *no*, which is also similar to the Hittite.

This emblem always appears at the top of the column. When it occurs it is often repeated, but it is entirely absent from whole texts. Both these indications point to a pronoun. There are fifty-eight cases, all occurring in six texts. It is not found at Ibreez, or at Hamath, or on the seals. At Tyana there are twelve instances in four lines, and at Jerabis five instances in four lines, in one text, and ten in four lines, in another text. It appears twenty-two times on the Merash lion, and five times on the Babylonian bowl. There are six known texts from which it is absent. The Babylonian bowl is allowed to be a dedicatory text or invocation, and if so, this emblem might well stand for the second person singular.<sup>1</sup> There are two cases in which it is re-duplicated, which might be the second person plural.

In Akkadian *zu*, *zu*, means “thou.” In Basque, *zu* is the plural “you” (Van Eys., p. 23), in Finnish *sa*, Esthonian, *sa*, Mongol and Manchu, *si*. In Turkish we find *shu* شو “this” سن *san* “thou” *siz*, “you.” The latter may be compared with the re-duplicated *zu-zu* (or *so-so*), of the Hittite texts. As in other languages so in Turkish “you,” the plural, is often used for “thou,” the singular, as a mark of respect (Redhouse, p. 82).

These fifteen signs, the values of which I first determined from the Akkadian, are therefore apparently supported by a further comparative study of the living languages, and it appears to me that, taken with the

<sup>1</sup> Applying the rules here detailed to the Babylonian bowl, I obtain the following approximate rendering: “O may the spell make the God (Ea?) come nigh . . . to thee alone thou King above, thou . . . called enlightener Creator . . . Tammuz . . . fire God the (memorial?) made for thee invokes thee.”














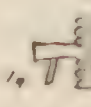
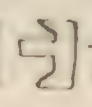
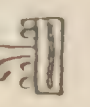

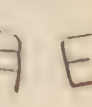


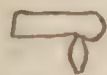
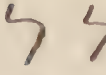
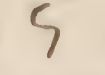
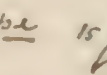
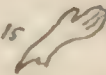

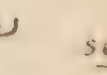

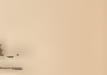

















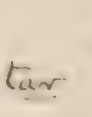
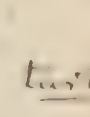







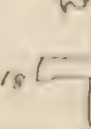


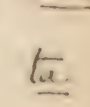

































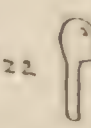
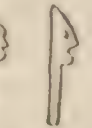

























evidence of royal names and town names, they serve to make a very strong case for the proposed decipherment.

(7.) *Strong Roots.*

By this term I mean the noun and verb emblems to which the preceding are attached, using a term which is already accepted, and which

STRONG ROOTS.

1				<u>si</u>			<u>na</u>	13						
2						<u>a</u>	<u>an</u>							
3						<u>pe</u>	15							
4					<u>ko</u>		<u>ku</u>	<u>ku</u>	16		?			
5						<u>le</u>	17							
6					<u>le</u>		<u>x</u>	<u>le</u>	18					
7					<u>ma</u>		<u>ro</u>	19						
8					<u>ma</u>		<u>re</u>	20						
9						<u>me</u>	21							
10					<u>mi</u>		<u>re</u>	22						
11						<u>ra</u>	23							
12						<u>re</u>	24							

<sup>1</sup> No. 16 on the 1st plate occurs more than 30 times on the monuments as a suffix usually. In 7 cases it follows *Ne*, and in 5 cases or more it follows the

answers to the Chinese distinction of "full" and "empty" roots. The arrangement of the emblems in Hittite is just the same as in the earliest cuneiform, except that the words are not divided by vertical lines of separation. The texts are boustrophedon, the emblems usually facing the commencement of the line. The strong roots have much larger emblems than the suffixes. The "packets" are indicated by single case emblems, which follow. The word often occupies two columns in the line. A slanting stroke shows the end of a word or clause. The words do not end always with the line (as is easily proved), which is also the case in Medic and at Malamir, but is said not to be so in Akkadian texts.

*An* or *Is*.—This emblem, which appears to represent "Deity," I have long supposed to be a conventionalised eye. It is quite possible that it may have had both sounds. The word *An*, for God, is found in Akkadian, Susian, and Medic; perhaps the Turkish  $\text{U} \backslash$  *Ana*, "Saint;" Etruscan *An*, *Un*, *Uns*, "God;" perhaps the Tartar *An*, "being." The Eye is an Egyptian divine emblem. The value *Is* or *Si* would recall the Akkadian *Si*, "eye" or "see;" Chinese *Si*, "eye;" Akkadian *Es*, *Is*, *Issi*, "brightness;" Medic *Siga*, "to see;" Tartar *jis*, *is*, "bright" and "light" (Vambery, No. 135, p. 124), this root is much used to signify deity. It occurs in Finnic languages (Donner, i, p. 20; ii, p. 31, 32). The Etruscan *Æs*-ar (plural), the Siberian *Asa*, Yenessei *ais*, *vis*, *as*, signify "God" (Taylor, "Etr. Res.," p. 145). Castren says that *Es* is the word for supreme deity among all Altaic peoples. Altogether there are thirty-two known instances on the Hittite texts, always as a prefix. In one of these it appears to be re-duplicated like the Akkadian *An-an*, "gods."

*An* or *A*.—Emblem a star. It occurs on seals only as yet. In one case it replaces, on a seal, the last-named emblem in the name of a god, which is a strong argument that the preceding *An* means "deity." The cuneiform *An*, "god," is also from a star hieroglyphic.

*Ba*.—The arm and dagger. Only found nine times, in six cases with the foot (probably for the passive) following. See the Akkadian *Ba*, *Bat*, "slay," "die;" Tartar *ab*, "strike," *Bot*, "cut" (Vambery, Nos. 153, 217, pp. 142, 203).

*Dim*.—On the bilingual. Much resembles the cuneiform *Dim*.

*Ka* and *Ka*.—Two forms of Tiara. There are more than twenty occurrences. On the bilingual, the tiara has the meaning "king." Another possible value is *Ua*, as in Lycian. In eight cases the emblem is re-duplicated. In one case we find Tar-ko (apparently for the name of a god); in another two cases the tiara precedes a king's head, as if equivalent to the re-duplicated tiara. There is also a seal with a king's figure accompanied by a re-duplicated tiara, and there can be little doubt as to the meaning of the emblem.

altar. I believe it to have had a simple vowel sound, and to be perhaps a conjunction. It is sometimes absent from a whole text. Medic conjunction *ak*, Akkadian *ua* (Lenorman), Turkish *ve*, "and."

As regards the sound, the existence of a word *Ku* or *Ge* for "prince" is admitted by Pinches, Bertin, Fox Talbot, and others, in Akkadian (*See* No. 462 in Sayce's "Assyrian Grammar," p. 40, *cu*, "prince," "precious"); Norris and Lenormant also admit the word in Medic, though Oppert prefers to use other synonymous words. The words *Ak*, *Uk*, *Aka*, are also rendered "king" by various students, the latter occurring in the name of the Hittite king, Akitisebu, and in the Turkish  $\text{كأ}$  *Aka*, "prince." The re-duplication may be compared with the term *Khakhan* applied to the chiefs of the Khozars, west of the Caspian. *Ku*, in Akkadian, also means "high," "bright," "silver," "precious." In living languages we may compare the Tartar *ag*, *eg*, *ök*, "Lord" (Vambery, No. 30, p. 27), and "high" and "strong" (pp. 6, 9); *ege*, "prince," and other words, from the same root, meaning "bright," "precious," "white," "silvery." In Finnic languages the same root occurs as in the Ostiak *Khu*, "long," and the root *Koi*, "bright" (Donner, i, pp. 1, 9), is perhaps connected with *Ku*, "fat" or "thick," and the Basque *Goi*, "height." In Chinese also we find *Kok*, "high." The syllable in Cypriote has the sounds *Ko*, *Go*, *Kho*; and perhaps *Kha*, "prince," in Akkadian, may also be compared (the common Tartar *Khan*, Chinese *Kon* or *Kan*). As regards the value *Uu*, compare the Akkadian *U*, "Lord." Tartar *uu* or *ou*, "important" (Vambery, No. 8, p. 9).

*Le*.—The bull's head. This emblem occurs fourteen times. In four cases *Ne* is prefixed, and in two it follows. Once we have *ā ne* following, and once *er* or *ra*. In Akkadian *Le* is "bull." Other common words are *Gut* and *Khar*, both meaning "bull" in Akkadian. *Gut* is "bull" in Chinese, perhaps connected with the Tartar *Güt*, "mighty" (Vambery, p. 104). *Khar* is the Finnish *Kirjo*, Vogul *Kar*, *Khar*, *Ker*, *Kher*, *Kir*, "ox;" Tunguse *Sar*, Mongol *uker*, Hungarian *ökör*, "ox." If, as is very probable, this word existed in Hittite, the head may spell the words *Kharra* and *Kharrane*, meaning "high" or "heavenly."

*Lo* or *H*.—The first is Cypriote; the second, Carian. The emblem is the Cross, which in Chaldea and Etruria was a sacred emblem, and is held in the hand of a god on the so-called Hittite cylinders. It is usually supposed to be a sign of "life," like the Egyptian *ankh*. It only occurs twice. Compare the Akkadian *lu*, "man;" Zirianian *lō*, "spirit;" Tartar *ol*, "to live;" and for the second value the Akkadian *Khi*, "good;" Turkish  $\text{عی}$  *cei*; Tartar *Khai*, "good."

*Man* or *Ma*, or *Gon*.—The hand with a sceptre. It only occurs twice. Perhaps connected with *Man*, Akkadian for "king;" also probably Etruscan. It is the Tartar *Mañ*, whence the Yakut *Mana*, "leader;" Finish *Vana*, "elder." *Gon* would mean the same.

*Ma(n)* or *Va(n)*, or *Ma* or *Va*.—This is a rare emblem, perhaps another kind of tiara.

- Me.*—This is a much conventionalised emblem, perhaps a hand. There are thirteen clear cases at Hamath, and one at Ibreez ; but at Jerabis it seems to be replaced by a well drawn hand, occurring with the same group of emblems. As it is generally found at the end of texts or phrases, it would seem to represent a verb root. There is no case as yet in which it is prefixed. Compare the Akkadian *Ma*, “be ;” Tartar *am, em, im*, “existing ;” and the Turkish *Am, me*, for names of actions.
- Mi, Me, or Ma.*—As already noticed, this is a common Turanian word for “country.” Its existence in Akkadian is acknowledged by Lenormant, Delitsch, and Pinches. (See Sayce, “Assyrian Grammar,” No. 291, p. 25, *mi*, “to dwell,” “plain,” “country.”) There are as yet only three clear cases of occurrence, one being on the bilingual, where it stands for “country.” The emblem represents two mountain peaks.
- Ra.*—There are only two cases. The emblem occurs also on cylinders, and as I pointed out some time ago, this emblem, frequently found in Phœnicia, seems to be akin to the Egyptian ankh.
- Re.*—This emblem occurs about fifteen times. Perhaps to be compared with the root *Ri*, “shine” or “bright,” in Akkadian representing rays of light descending, or as in cuneiform and Egyptian emblems representing “rain,” from *Ri*, “flow.”
- R.*—A much rarer emblem seems to represent water dropping or pouring. Compare the root *Ri*, “flow ;” Tartar *er, ir, ur*, “to flow,” as already mentioned in Section 3.
- Ri.*—This emblem, which I have supposed to be perhaps the fire stick (*bil* or *bilgi*<sup>1</sup>), occurs on the Babylonian bowl as the name of a god. Compare the Akkadian deities *Ri* and *Ira*. It only occurs five times, in four instances of the same word, and in the case just mentioned. In Akkadian *Ar, Ir, Ur*, means “light,” “fire,” “heat ;” the Tartar *gar, or, ur, ir*, “to gleam,” “burn,” “shine” (Vambery, No. 128, p. 117), and *Ri* means “light” or “brightness” in Akkadian.
- Se.*—The hand. There are only a few cases. Akkadian *Sa*, “put,” “give,” “have ;” *Saa*, “favourable ;” *Se, Si*, “give.” Tartar *aja*, “the open hand” (j and s being convertible) ; *aj, ej*, “favourable ;” *es*, “lucky” (Vambery, pp. 1, 3, 4), *saa, sau*, “to take” (p. 157).
- Su.*—There are only four cases. An arm holding some kind of stick or cord. Perhaps to be compared with the Akkadian *us*, “king ;” Tartar *ös*, “lord ;” *us*, “great ;” *us*, “master” (Vambery, pp. 27, 57, 62).
- Tar.*—This emblem of the deer’s head stands for Tar, or Tarku, on the bilingual. In Akkadian *Dar* or *Dara* means “deer.” In Finnic we find *sorlv*, “stag,” from *sor*, “horn.” There are about ten occur-

<sup>1</sup> *Gi* means “flame ;” compare the Finnic *keo*, “hot,” *kaila*, “flame,” Tartar *köö*, “burn.” *Bil* I propose to compare with the Tartar *bil*, “to rub” (Vambery, p. 198), so that *Bilgi* would mean flame made by rubbing with the firestick.

rences of this sign, once as the name of a deity (Tar or Tarku) on the Merash lion.

*Ta.*—The hand holding a stick. This is a rare emblem. On the Hamath stones it occurs, followed by *ne*. Compare the Akkadian *Da*, “drive;” *Tan*, “power;” Chinese *Ta*, “noble;” *Tan*, “hero;” Uigur *ite*, “master;” Cagataish *tay*, “power;” Finnic *tan*, *tun*, *ten*, “strong. (Donner, i, p. 143.)

*Te.*—Emblem an herb. Compare the Akkadian *Ti*, *Tid*, *Tin*, “life;” *De*, “move;” Tartar *at*, “move;” *Tin*, “life” (Vambéry, Nos. 27, 39, 186, 189); Turkish *اتمك itmek*, “to sprout,” *اوت ot*, “herb.” There are about 13 clear cases on the known monuments never apparently prefixed. The group *Ni-to-li* at Ibreez may mean “living.” *Te ne* also occurs (Akkadian and Tartar *Tin*, “life”).

*To.*—The hand in attitude of taking. There are only six clear cases. Compare Akkadian *tuk*, Medic *Duni*, “take,” “give;” Etruscan *teke*, “give;” Tartar *Tok*, “touch” (Vambéry, No. 173, p. 159); Finnic *Tuk*, “touch” (Donner, i, p. 109). The Akkadian *tu*, “make,” is a common Ugric and Tartar root no doubt connected.

*Tu.*—The hand pointing downwards. There are only two clear cases. Akkadian *Tu*, “down,” “descend,” “death;” Turkish *دون down*, “down,” “below.”

*Vo.*—A head on a stalk. Dr. Sayce renders it “pray,” or “worship” (*kuc*). It may have the value *gu*, and *Vo* (or *Mu*) as well. The emblem usually stands alone at or near the end of a packet, or of a text, so that it would seem to represent a verb. There are about 17 clear cases. As yet it is not found on any seal. Akkadian *Mu*, “name,” “call;” *Me*, “speak.” Tartar *oñ*, “cry” (the ringing *n* being often put for M. Vambéry, No. 54, p. 49.) Akkadian *gu* and *ka*, “say,” “word” (the K and M are often interchanged.) Tartar *ig*, *iau*, “cry;” *kui*, *kuj*, “voice” (Vambéry, pp. 106, 129, 130). Finnic *kii*, “speech;” *juoi*, “call.” (Donner, i, pp. 58, 102.) The combination *voka* or *guka* occurs five times (“word for,” or “name for;” *Vo-me-ka*, three times (“words for,” or “crying to,”) and *Ne vo* (a verbal form), once, *Vo li* (or *gu-li*) the participle once, and *Mo-vo*, “I say,” twice.

*U or O.*—Emblem, the firmament. Dr. Sayce calls it the emblem of supremacy. The sound here given is taken from a Carian emblem. Other possible sounds would be *ub*, *Pa*, and *Pak*. There are about twenty known cases, in thirteen of which it is a prefix. On the new Gurnun text it seems to occur several times above the emblem for deity. Akkadian *u*, “day;” *ub*, “heaven;” *pa*, “sky,” perhaps the Tartar *u*, *uv*, *up*, “curved”—the vault of heaven.

*Zi or Zo.*—Emblem, perhaps the lightning. The exact sound in Cypriote is doubtful. There are ten clear cases. In one instance it is the name of a god. Akkadian *Zu*, “live,” “grow;” *Zi*, “life,” “spirit,” “flow;” Tartar *uz*, “grow,” *Is*, *es*, *us*, *os*, “flow,” “fly,” “spirit.” (Vambéry, No. 40, p. 37, and p. 57.)

These lists do not exhaust the notes of comparison which I have collected, but are sufficient for the present purpose of showing how the sounds of the Hittite language may be recovered and compared. From the name lists we here recover 34 words, and several indications of grammar and from the texts themselves 40 roots, without counting derived words or compounds. I believe at least 100 Hittite words in all are recoverable from the materials at our command. It appears to me that it is necessary for those who may feel inclined to criticise these results,<sup>1</sup> not merely to select a word here or there, but either to show some radical fallacy underlying the system, or to give some alternative comparison capable of being better adapted.

I have reserved for the present the results of a careful comparison with cuneiform and with Egyptian. I believe in 38 cases, Hittite and Egyptian emblems have the same form and meaning, and out of these in 12 cases the same, or very nearly the same sounds. In 38 cases also the Hittite and cuneiform form may be compared, and in 18 cases out of these not only form and meaning, but sound also is the same—the sounds being of course independently obtained.

I agree with M. Bertin, and other scholars, in supposing that Hittite, cuneiform, and Egyptian, had a common origin in an ancient picture-writing system, from which the Chinese also developed. I believe this to have originated somewhere near the Caucasus among Turanian tribes, and to have been adapted to an African language in Egypt, just as to a Semitic language in Chaldea; but since the "weak roots" have independent emblems in the three systems, I think they must have separated and developed independently from a remote age before the original language had advanced to the agglutinative stage.

I further believe the Semitic alphabet to be demonstrably derivable from the Hittite emblems, the chief reason being the use in Carian and Lycian, &c., of a transitional system; for it is contrary to ordinary palaeographical experience to suppose (as scholars are now obliged to do) that a mixed alphabet can have existed derived from two distinct sources.

C. R. CONDER.

<sup>1</sup> The only criticisms as yet (by Dr. Sayce and others) have had respect to details. I have answered these fully in "Altaic Hieroglyphs" (second edition), and in *Palestine Exploration Fund Quarterly Statement*, 1887. I have modified former proposals in this paper in five cases, and have added nine new comparisons, increasing the number of sounds recovered from 31 to 40. Space does not allow of giving the lists which I have prepared, comparing Akkadian in about 400 cases with Tartar roots, in 200 with Turkish, in 70 with Media, and in other cases with Ugric, Finnic, and Mongolic languages, and with Chinese and Etruscan. There are at least 150 Tartar words in Egyptian, and these, as a rule, occur in Akkadian also. My list of restored Hittite words exceeds 100 in all. The question of the comparison of the three hieroglyphic systems I hope to treat elsewhere in a separate paper. The question of the origin of the Alphabet is also published separately.

*Corrections and Notes.*

The proof of the "Hittite Language" having been submitted to various scholars for criticism, I have been favoured with their remarks on details, and add the results as far as they have reached me.

*Bulug*, "division," is regarded by M. Bertin and Prof. Sayce as a Semitic word. The root, however, is common in Turanian speech. *Zab*, "soldier," is also considered Semitic by M. Bertin.

*Nautab* is more correctly *Natub*, according to Rev. H. G. Tomkins, who also objects to *Kharab* (*Khaleba*), and to *Ganiab* (better *Kainab*). *Barsa* is otherwise read *Sarsa*, but the inscription is here injured. *Tamukaa* is perhaps more correctly *Tzemauka*.

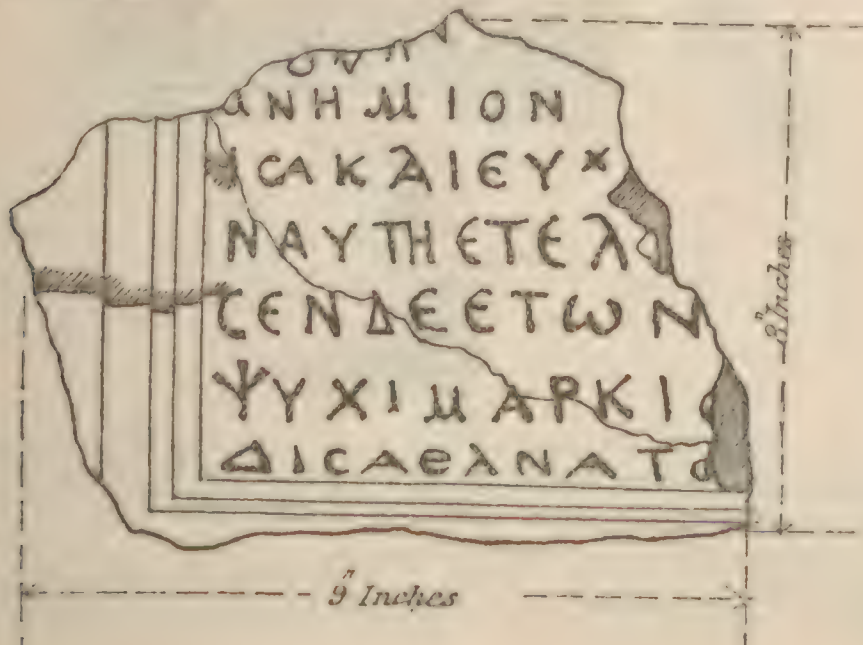
*Li*, given by Lenormant as an adjective termination, is not accepted by M. Bertin; *U* or *Ua*, "and," is read *Sa* by Prof. Sayce, but this is still apparently doubtful.

As regards the termination *meti*, in Hittite, I may add that *meta* occurs, meaning "being" in Akkadian (Bertin on "Assy. Pronouns," p. 19), which strengthens my case.

There is of course a good deal of doubt about some of the words given as Akkadian on the authority of Lenormant, Delitzsch, and others. M. G. Bertin has kindly looked through these words, and doubts especially—*Pakh*, "king;" *Pis*, "hero;" *Zana*, "superior;" *alu*, "city" (probably Semitic); *us*, "King;" *Tu*, "down." He also reads *lu* for *le*, "bull," and queries other words; but by the system used in this paper the uncertainties of Akkadian are often overcome. C. R. C.

RECENT DISCOVERIES.

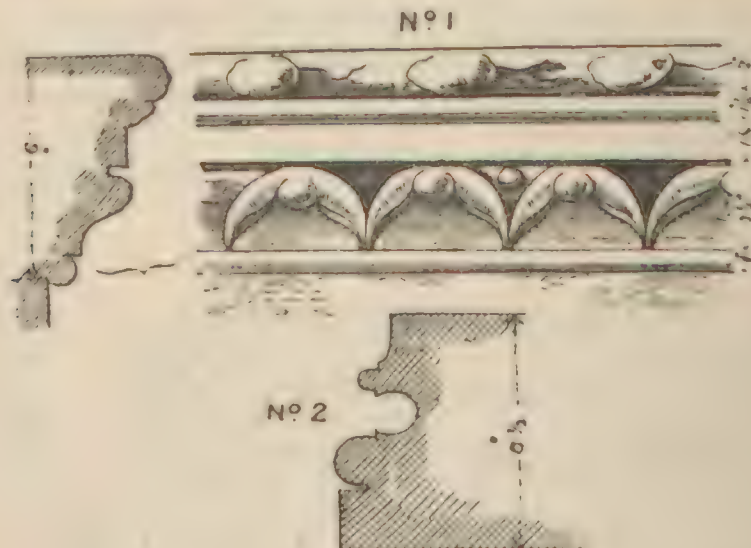
*Lejjûn*.—At Lejjûn, this ancient Roman place of the Merjibn 'Amir (Plain of Esdraclon), the following Greek inscription was found, unfortunately not complete:—



The inscription is engraved on a soft white limestone, surrounded by a cornice.

*Haifa.*—At the west of the German colony at Haifa, near the modern Jewish cemetery, in an abandoned garden, covered with quicksand, several large sarcophagi covers of sandstone were discovered after the upper layers of the sand were transported on wagons to the gardens of the colony. The sarcophagi covers, herewith sketched, had an average length of 7 feet 1 inch, an exterior width of 2 feet 11 inches, and a height of 1 foot 11½ inches. The sarcophagi themselves, or rather the graves, were formed by nicely hewn sandstones of large size, up to 6 feet by 3 feet, and masoned together so as to form a grave of rectangular form, sufficient in size to be covered by the top slabs sketched. Each of the three top slabs had on each corner of its sloping top a horn, 11 inches high, 8 inches in diameter, which gave the whole a suitable ornamentation. The interior of the graves were somehow plastered with a good covering of white mortar. The workmen, who were busy in destroying these ancient remains and cutting them into building stones of such size as to be transportable on camel's back, pretended that they had also dug out human bones, which I saw no more. This place and vicinity (see "Memoirs of Palestine Exploration Fund, Haifa," Vol. vi, p. 303) must have been an ancient Jewish burial place, as seen from the data mentioned by Benjamin of Tudela, &c.

*Kefr Kenna.*—The annexed sketch, No. 1, represents an ornamentation found at Kefr Kenna by the Superior of the Latin Convent there; it is carved in the so-called Nâri (a soft crumbling lime) stone, and as so very



few ancient remains are found at this place, may be of some interest: No. 2 was also found here, and seems to be the attic base of a column, while No. 1 is the top of a crowning cornice.

*Mâ-mâs.*—At the Roman Theatre of Mâ-mâs, I found these **H R K** mason marks. The greatest part of this ruin is carried off and overbuilt.



*Tiberias.*—The surface of the Lake of Tiberias is 5 feet 1 inch *lower* than it was in February, when I marked its height on the city wall, at the time of heaviest rainfall. The inhabitants of the city are surprised of this low stand of the lake, it being the lowest since many years, and was caused by the dry season and the relative poor rainfall of last winter. The Jordan, near Báb et Tumm, at its outflow out of the lake is only knee-deep, while in March last I crossed the river in a boat, measuring a maximum depth there of nearly 6½ feet. The springs also, throughout Galilee, but especially in the district of Tiberias, became unusually poor, and many dried up totally; so for instance, the large town of Lúbich and of Nimrín are obliged to get their entire water supply, since September last, from the powerful but distant spring of Hattin, at a distance of 4 and 2 miles respectively. At Nazareth the want of drinking water becomes most urgent, as even the good supplying spring at Kern el Emir could no more answer the wants of thousands, not a drop being left any more to irrigate the gardens below. Foreigners, who were not happy enough to have friends, found nobody, not even for money, to water their animals. In Northern 'Ajlún, where the cisterns became empty during September, and no spring was near, the want of water became a burning question. A Mukâri (muleteer), loaded with dry goods from Damascus, told me that he wandered about in Northern 'Ajlún for three days without finding a place to water his animals, he himself suffering most terribly from thirst, as no villager allowed him to have a drink until he finally forcibly seized a "kirby" (leather bag) of water from an old woman to answer his wants. Considering that declining to hand a drink of water over to a stranger is about the last thing that is expected by an Arab, and is throughout considered as an action of the basest kind, the state of water wants in 'Ajlún must have been very very high indeed. Several rainfalls during the last weeks have raised this question to a supportable degree.

*Shefa 'Anir.*—In the south of the town, just below the small castle, el Burj, and near where the officers of the "Fund" had found and described tombs, other tombs along the road were discovered. They were so well shut by stone doors that their existence had hitherto escaped the eye. They generally contain three to four koka, and show here and there on the walls Christian emblems and crosses. Human bones and copper bracelets, and some lachrymatories, are said to have been found, but carried off by a monk, who happened to be near at the time of discovery.

*Athlit.*—This crusading castle has been bought privately by H. E. the Governor-General of Syria, who intends to pull down the dirty fellahin houses, and part of the ancient remains, and to rebuild a proper village, to drain the marshy land, and to cultivate gardens. While surveying this part I was surprised by the abundance of old cisterns along the low hills of Athlit, the large sandstone quarries (el Makatlyeh), and the remains of irrigation canals and basins within the jungles of "Tarfa" or Tamarisks. The total area of the property belonging to Athlit measures 54 feddans (among which 33 of cultivated soil), or each government feddan, measuring 200 dunnums, about 10,800 dunnums = 2,340 English acres. Many

ancient remains may be brought to daylight by this desirable act of civilisation.

*Sārafand*.—Last week fishermen from this village caught a young sea-calf in their nets while fishing in the sea and brought it ashore; the cries of the young animal soon attracted its mother, which also appeared and was killed by gunshots; this animal very seldom appears in this part of the Mediterranean, and I immediately sent for its remains, but, unfortunately, the young calf had since died, and the meat of the other was entirely eaten up by the villagers, who pretended it to be of the taste of the best salt-water fish. All I could obtain was part of the skin, a very smooth hair-skin, much finer than that of a cow, and speckled white and dark brown. The calf is called *Kelb-bahr* (sea-dog) by the natives.

*Haurân*.—I have just been informed that near es-Sunaneim, in Northern Haurân, near the Lejjâh, a great fight has taken place between the 'Arab-el Lejjâh Bedawin and the Druses of Jebel Haurân. Government soldiers, well armed, numbering several hundreds, attacked the Druses, who had unfairly commenced the fight, and were naturally supported by the Bedawin. Up to now about 150 Druses were killed, and about 300 wounded, the loss on the other side was not severe. As the Druses had also lately killed the young son of a Kurdian Emir of Damascus, while the innocent boy took a ride on the Merj, an action which nearly gave way to a general rise among the Kurds of Damascus, the Government is severely considering the question of a large expedition to pacificate the revolting Druses of Haurân.

G. SCHUMACHER.

Haifa, *November*, 1887.

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#### NOTE.

A FEW days ago a friend, who is staying with me here, in the course of an excursion to the "place of burning" and the Tell el Kassis, found, about 200 yards from the base of the mountain, on his way to the latter place, a chipped flint arrow-head. It was especially interesting to me, as the spot at which it was picked up is only about a mile from the "fort" which I discovered about four years ago, called El Kul'at, and which I observed at the time in my article on "The Khurbets of Carmel," bore all the appearance of a pre-historic period. As on the occasion of my previous visit, the day was closing in too rapidly to enable me to give it the attention it deserved, I re-visited the spot a few days ago, thinking that I might possibly come across some more flint implements; but these are curiosities which one never finds when one is looking for them. I took the opportunity of making a rough sketch of the fort, and of part of the ancient wall, which is composed of large unhewn stones laid upon one another. The circular area inside is 82 feet by 75. The position must have been a very strong one, as it presents a precipitous face to the plain, above which it is situated about 300 feet, while its

rear the flank of the mountain is quite inaccessible. It is connected with the mountain by a neck of land, on which are the remains of some ancient ruins, and is approached from the side.

I have also been able to decipher the only inscription I have yet found on Carmel; it is over a rock-tomb at Kh. Raktiyeh (*see* article on "Khurbets of Carmel," *Q.S.*, p. 30, 1884), and is as follows:--

**"MAPEINOY MNHMEION,"**

on the tomb of Marinos, evidently from the crosses cut below the name, a Christian. It is interesting as showing that until the conquest of Palestine by the Moslems, these rock-tombs were used by Christians.

LAURENCE OLIPHANT.

*August 2nd.*

**BOAT-SHAPED GRAVES OF SYRIA.**

In the *Quarterly Statement* for October, 1887, I described some boat-shaped graves which I saw in the Anti-Lebanon. In the *Quarterly Statement* for January, 1888, Captain Conder suggests that these graves should be compared with the anthropoid sarcophagi of Phœnicia, and with the wooden mummy cases in Egypt. "The form," he says, "follows that of the human body." If he means the form of the anthropoid graves of Phœnicia, why, of course it does; but if he means the form of the graves which I described, I must say distinctly that it does not. The form is boat-shaped, and not human-shaped. Captain Conder apparently has not seen the graves, and has not seen my drawings.

I observe also Captain Conder's present opinion, that "Charon was probably not connected with Horus, but with the Etruscan Charun, 'the black (or evil) god' of death." I did not mean to assert on my own authority that Charon was connected with Horus. I mentioned that a carnelian scarab found at Amrit, in Phœnicia, exhibits a ship with the sun above it, and letters which Perrot reads as Kheb, but which Captain Conder would read Kher and regard as the Semitic spelling of Horus. I said, also, that in the boat which was brought up to the lake side in the funeral ceremony in Egypt the boatman's name was Charon, and both Charon and his boat were adopted by the Greeks. This statement rests on the authority of Sir Gardner Wilkinson, who quotes Diodorus, and adds that both the name and character of Charon are taken from Horus, who had the peculiar office of steersman in the sacred boats of Egypt.

GEO. ST. CLAIR.

## THE CITY OF DAVID AND ACRA.

In the *Quarterly Statement* for 1886, p. 27, I stated that Josephus described the part north of the Upper City (the Acra of Sir Charles Warren and Captain Conder) as the *suburb* (*προάστειον*), but I omitted to point out the evidence.

In reference to this part Josephus says (Wars v, iv, 2) that the second wall only encompassed the northern quarter (*τὸ προάσκητιον κλίμα*). But again in reference to a particular part of Jerusalem, Josephus speaks of it as the northern quarter (*τὸ προάσκητιον*) in Wars i, xiii, 3, but as the *suburb* in the parallel passage in the Ant. xiv, xiii, 4, thus identifying the two. With this agrees the statement in Ant. xv, xi, 5, that two of the *western* gates of the temple led to the *suburb*; inasmuch as the part north of the Upper City was on the *western* side of the temple.

Thus Josephus places the *suburb* north and the Acra east of the Upper City, on Ophel (so called, 1886, 27), hereby unconsciously admitting that Ophel was the site of the City of David. This is clear, since Josephus identifies his Acra with that of the Maccabees (Wars v iv, 1), which was the City of David (1. Macc. I, 33), which was on Ophel (Old Test., 1885, 100). The City-of-David-question is really as clear as noon, and as easy as A, B, C, until Josephus' guesses at truth are weakly taken to be truth.

For critics in search of the true position of the City of David and Acra, it seems indeed an odd device to disregard entirely the Old Testament and to go to Josephus for its City of David, and to modern theorists for his Acra; instead of going to him for his Acra, and to it for its City of David. My topographical opponents are welcome to confide in Josephus or not, as they like; but it is nothing less than infatuation to *believe* him when he contradicts the Old Testament, writing of what he may have heard, read or thought, but certainly had not seen, and then to disbelieve him when he writes of what he had actually seen.

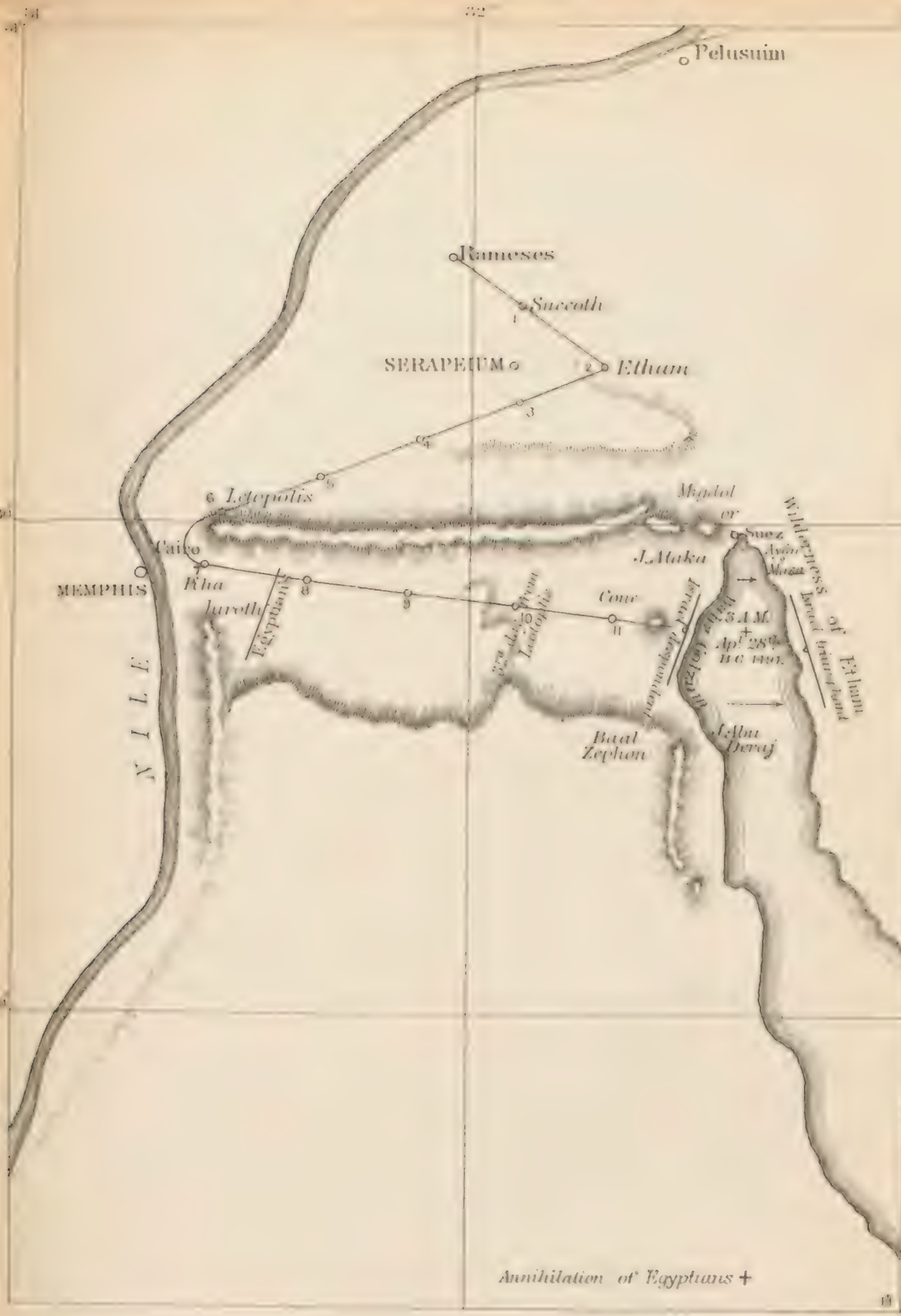
W. F. BIRCH.

## ERRATA.

- October, 1887.—Page 210, line 9, for Tibnite, read Tabnite.  
 „ Page 210, line 15, for Dodorus, read Diodorous.  
 „ Page 213, line 37, for 6 in plan, read b in plan.  
 „ Pages 217, 218, for rock level 2411·6, read 2511·8.  
 „ „ 2412· read 2512.  
 „ „ 2414· read 2514.  
 „ „ 2415· read 2515.  
 „ Page 239, line 24, for Disopolis, read Diospolis.  
 „ Page 240, line 14 from bottom, for Atakak, read Ataka.  
 „ Page 240, line 4 from bottom, for then, read there.

- October, 1887.—Page 241, top line, *for sau, read san.*  
 " Page 241, line 24 from top, *for Gen. 33, 37, read 17.*  
 " Page 241, line 31 from top, *for Mirian read Hiram.*  
 " Page 241, line 31 from top, *for 45 read 46.*  
 " Page 241, line 6 from bottom, *for 20 read 30.*  
 " Page 242, line 13 from bottom, *for Jabel read Jebel.*  
 " Page 243, line 6 from top, *for Pita, read Piha.*  
 " Page 243, line 21 from top, *for Pe, read Pi.*  
 " Page 244, line 2 from bottom, *for Clyoma, read Clysma.*  
 " Page 245, line 18 from top, *for xv, read xiv.*  
 " Page 245, line 4 from bottom, *for 12, read 11.*  
 January, 1888.—In the list of subscriptions, *for C. White, read*  
 Edward White.  
 " Page 22, line 7, *for Waly Rephaim, read Wâdy Rephaim,*  
 " " Bettis " " Bititr.  
 " " Iswain " " Ismâin.  
 " " Sarar " " Sûrâr.  
 " " line 8, *for Arlouf " " 'Artûf.*

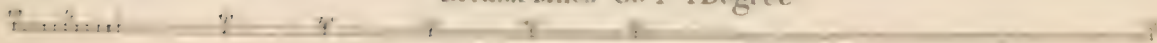




Annihilation of Egyptians +

Vassier's Travels in Egypt

British Miles 69.1-1 Degree



Enlarged from Stanford's Jour. Ancient





THE  
PALESTINE EXPLORATION FUND.

NOTES AND NEWS.

We have generally an announcement to make, but not often of so much importance as that of this day. It is the discovery of the Pool of Bethesda.

The modern identification of this Pool with the Birket Israil, north of the Haram, has never been accepted by any who have studied the question. The twin pool at the Convent of the Sisters of Sion has been of late years generally believed to have strong claims. The new discovery, however, removes the Pool to quite another place.

The Algerian Monks (French), *see* p. 115, digging on the north-west of St. Anne's Church, came upon a tank, about 100 feet distant. Crossing a courtyard and entering by a narrow passage, a building, measuring about 70 feet east and west, by 25 north and south, with an apse at the east end, was found. Its floor (about on the level 2,400) was some 7 feet below the general surface of the courtyard. Under this building are vaults about 10 feet deep, the floor level being that of the surface of the natural rock. Through the floor of these vaults a cistern is reached, cut in rock to a depth of 30 feet. It lies under the line of the building (apparently a church) with an apse, above-mentioned. Its measurement east and west from one rock wall to another is 55 feet; north and south it measures  $12\frac{1}{2}$  feet, but the north wall is of masonry, with four piers standing on rock bases supporting arches; the spaces between the piers have been filled in with masonry after building, probably at a later period. A flight of twenty-four steps leads down into this pool from the east scarp.

The church or chapel was probably built at a later period, when the surface level was within 6 or 7 feet of its present height, after an accumulation of 10 feet of earth over the rock, which, as we shall see, seems to have been still visible in 1172 A.D. This is also indicated by the position of the walls, over the pool. The vaults from the rock surface were no doubt constructed to bear the floor of the new church.

What is, however, of still greater importance, Herr Schick has found a second pool to the west of this, forming what is called a twin pool. The

interest of this discovery lies in the fact that the Pool of Bethesda had five porticoes. Now the only possible way for a pool to have five porticoes (unless it is a pentagon) is to be a double or twin pool, so that there may be one portico along each side and one for the wall of separation. Sir Charles Wilson, in his new edition of the "Bordeaux Pilgrim" (Palestine Pilgrims' Text Society), has drawn up a list of the principal authorities on this subject. From this it will be seen that there is a continuous chain of evidence from the 4th to the 12th century, both inclusive.

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We publish simultaneously with this number of the *Quarterly Statement* an account, with maps, plans, and illustrations, of Paphlagonia, the ancient Pella, by Herr Schumacher.

Little is known of the history of Pella, except the one fact which makes it remarkable, namely, that the early Christians retired thither when the troubles of Jerusalem began.

The Basilica, which Herr Schumacher describes, presents many curious details, and the system of caves with passages deserves a much more complete examination than Herr Schumacher was able to give. Copies of this little volume, uniform in size with "The Jaulân," can be had by subscribers on application to the Central Office only.

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There is in the Press, to be published in October, Dr. Post's "Journey to and round Damascus." The account we shall produce will be the popular narrative, accompanied, however, by the chief Botanical results.

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The List of Old Testament names and identifications was issued last year. That of New Testament names, which contains the references in Josephus to the New Testament places, is now ready. Subscribers can have copies of the latter, separate, at 1s., and of the two together, in paper cover, for 3s., and bound for 3s. 6d., by application to the office only. To the general public the price of the book will be 6s. 6d.

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As already announced, with the view of clearing off the MSS. which await publication, the Committee have resolved on issuing an edition, in form similar to, and uniform with, the "Survey of Western Palestine," of the following works:—

1. Conder's "Survey of Eastern Palestine," so far as completed. The MS. is very voluminous, containing as much as will make a volume equal in size to those of the "Memoirs" in the "Survey of Western Palestine." None of it has been published; the drawings are very numerous, and of the deepest interest to the student of prehistoric monuments, as well as for the illustration of the Bible.
2. The Archæological Mission of M. Clermont-Ganneau, with the drawings of M. le Comte.  
These drawings are many hundreds in number, and executed in the finest style. They figure a vast number of monuments and ruins not in the "Memoirs."
3. The Flora and Fauna of the Wady Arabah, by J. Chichester Hart, Esq., accompanied by many drawings of plants, &c., in the best style.

The editions will be limited to 500. The first 250 subscribers will pay seven guineas for the three volumes; subscribers to the "Survey of Western Palestine" will be privileged to have the volumes for this sum. The price will be raised, after 250 names are received, to twelve guineas. The Committee are pledged never to let any copies be subscribed under the sum of seven guineas. Mr. A. P. Watt, 2, Paternoster Square, is the agent.

The Palestine Pilgrims' Text Society has now issued the following works:—

1. "The Holy Places visited by Antoninus, Martyr."
2. "The Pilgrimage of the Holy Paula."
3. "Procopius" (Buildings of Justinian).
4. "Mukaddasi" (Description of Syria).
5. "The Bordeaux Pilgrim."
6. "The Abbot Daniel."
7. "The Crusader's Letter from Acre to England."

There are in preparation, and will be issued before the end of the year:—

1. "The Norman-French Description of the City and the Country." Translated and annotated by Captain Conder, R.E.
2. "The Travels of Nasir-i-Khusrau." Translated by Guy Le Strange.
3. "Arculfus de Locis Sanctis." Translated by Rev. R. Maepherston, and annotated by Sir Charles Wilson.

Mr. A. P. Watt has now received a sufficient number of names to warrant the commencement of the publication of the Eastern Survey, the results of M. Clermont-Ganneau's Mission and Mr. Chichester Hart's Mission. Intending subscribers to these most important and valuable works are requested to send their names to Mr. Watt (2, Paternoster Square) without delay.

The friends of the Society are earnestly requested to use the "Memoirs of Twenty-one Years' Work" as a means of showing what the work has been, and what remains to be done.

Subscribers are very earnestly asked:—(1) To pay their subscriptions early in the year—say in January. (2) To pay them direct to Coutts and Co. by a banker's order. (3) If they would rather choose their own time, to send up their subscriptions without being reminded. The Clerical Staff of the Society is small; it is most desirable not to increase it; and if these simple requests are attended to a great saving of clerical labour, postage, and stationery is effected. For instance, there are, say, 3,000 subscribers. If every one of these waits to be reminded, and has to have a receipt sent to him, the Society has to spend £25 a year additional in postage, and to write 6,000 letters, merely to ask for and to acknowledge the receipt of the subscriptions.

The following books are now published uniform in size and appearance:—Conder's "Tent Work;" Conder's "Heth and Moab;" Schumacher's "Across the Jordan;" "The Memoirs of Twenty-One Years' Work;" Conder's "Syrian Stone Lore;" Conder's "Altaic Inscriptions;" and Schumacher's "Jaulan."

Subscribers can have the whole set, together with Hull's "Mount Seir," and Names and Places, for 32s., carriage free.

Mr. Armstrong has prepared a list of the photographs belonging to the Society, arranged alphabetically according to those Bible names which are illustrated by views. This list is now ready. Those who wish for a copy may send in their names.

The income of the Society, from March 21st to June 21st, 1888, inclusive, was—from subscriptions and donations, £264 18s. 1d.; from all sources, £447 5s. 5d. The expenditure during the same period was £662 7s. 11d. On June 21st the balance in the Banks was £224 3s. 10d.

Subscribers who do not receive the *Quarterly Statement* regularly are asked to send a note to the Secretary. Great care is taken to forward each number to all who are entitled to receive it, but changes of address and other causes give rise occasionally to omissions.

While desiring to give every publicity to proposed identifications and other theories advanced by officers of the Fund and contributors to the pages of the *Quarterly Statement*, the Committee wish it to be distinctly understood that by publishing them in the *Quarterly Statement* they neither sanction nor adopt them.

The only authorised lecturers for the Society are—

- (1) Mr. George St. Clair, F.G.S., Member of the Anthropological Institute and of the Society of Biblical Archæology.

His subjects are:—

- (1) *The General Exploration of Palestine.*
- (2) *Jerusalem Buried and Recovered.*
- (3) *Buried Cities, Egypt and Palestine.*
- (4) *Buried Cities of Mesopotamia*, with some account of the Hittites.
- (5) *The Moabite Stone and the Pedigree of the English Alphabet.*

Address: Geo. St. Clair, Bristol Road, Birmingham, or at the Office of the Fund.

- (2) The Rev. Henry Geary, Vicar of St. Thomas's, Portman Square. His lectures are on the following subjects:—

*The Survey of Western Palestine, as illustrating Bible History.*

*Palestine East of the Jordan.*

*The Jerusalem Excavations.*

*A Restoration of Ancient Jerusalem.* Illustrated by original photographs shown as "dissolving views."

- (3) The Rev. James King, Vicar of St. Mary's, Berwick. His subjects are as follows:—

*The Survey of Western Palestine.*

*Jerusalem.*

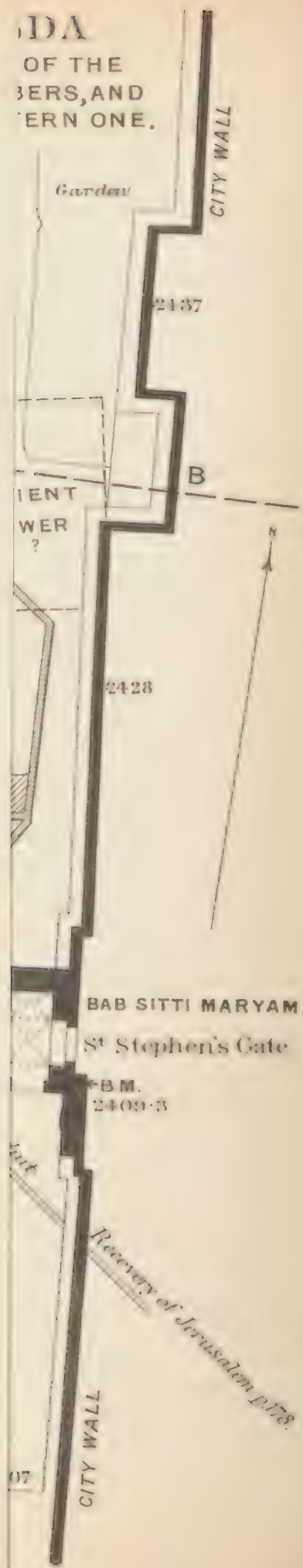
*The Hittites.*

*The Moabite Stone* and other monuments.

- (4) The Rev. Thomas Harrison, Surbiton.



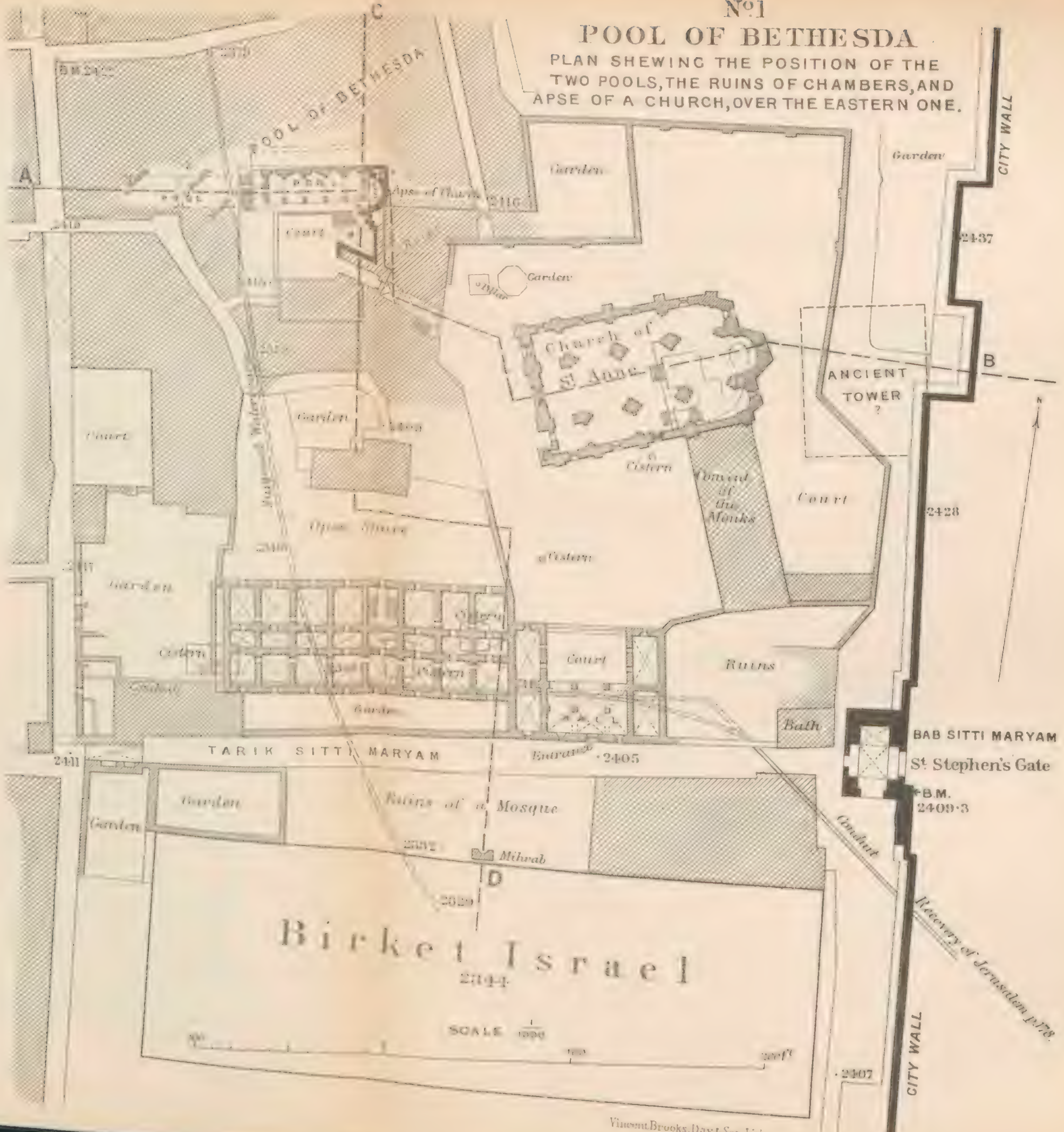
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Nº1

# POOL OF BETHESDA

PLAN SHEWING THE POSITION OF THE TWO POOLS, THE RUINS OF CHAMBERS, AND APSE OF A CHURCH, OVER THE EASTERN ONE.



## POOL OF BETHESDA.

## I.

## RECENT DISCOVERIES IN JERUSALEM.

AFTER the Crimean War in 1854 the Sultan presented to the Emperor Napoleon the ruined Mosque called Salahieh, and other ruins adjoining which are situate near St. Stephen's Gate, and north of the Birket Israil.

This Mosque was originally the church of St. Anne, built in the Romanesque style, with a convent for Nuns. Salah-ed-Din on taking Jerusalem converted it into a Muhammedan school, and it was then subsequently known as "Salahieh," signifying the place or institution of Salah; in the course of time it lost much of its importance and gradually ceased to be a Muhammedan School, but Muhammedan cadets to the present day still attend for instruction by the Roman Catholic Arabic-speaking monks.

The French Government, on taking possession, restored the church, cleared the ground round about, and erected some new buildings and gave them over to the Algerian monks, who speak Arabic, wear white woollen habits—and a red tarbash or Arab cape. They belong to one of the many religious orders of the Roman Catholics, the name of which I do not know. They also established a school for native boys, and have carried it on for a series of years, having now about 30 boarders.

On clearing the place and removing an accumulation of rubbish, several important discoveries were made, one of which was a deep cistern (so-called at the time) with steps leading down into it, but was very seldom shown to strangers or others, the object being to acquire the adjoining property first; this has been accomplished and the cistern or pool is now open to visitors.

I deemed it advisable to make a plan of the whole place, noting on it all what appeared to me to be of interest in an archaeological point of view.

No. 1 is a plan of the whole place, with full details given as correctly as I possibly could obtain them. The line of the deepest points of the valley, according to Sir Charles Warren's rock contours, are also shown.

No. 2 is a section from west to east of the more northern part, showing the cistern or pool, the Church of St. Anne, and the city wall, and also the lie of the rock.

No. 3 is also a section from north to south of the western part, showing the cistern or pool and its connections, the elevation of the church, the court, the new building in course of erection, the recovery of the continuation of the conduit, the street called Tarik Sitti Maryam, and the Birket Israil.

The contour or lie of the rock differs in some small degree from that of Sir Charles Warren's.

I have inserted on the two sections drawings of fragments of masonry found on the spot, with scale, &c.



I will now describe the various parts under special headings, inserting reference letters and figures when necessary.

*The Conduit or Passage.*

Some weeks ago, having learned that the Arabic-speaking priests and monks at the Salahieh (St. Anne's Church and place) had begun to erect a new building, and in clearing for the foundation found a conduit, I went the next day to see it if possible. The foreman of the work showed me the line of the conduit and described its condition, but as it was walled or covered up, I was unable to see it then; however, an opportunity occurred in a few weeks, and I am now able to give the following description.

It runs nearly parallel with the northern wall of the Birket Israil, the later traditional pool of Bethesda, but nearly 80 feet north of it, continuing westwards under the building on the north side of the street Tarik Sitti Maryam to the street Suk Bab Hytta, where it is full of *dibris*, and belonging to a different proprietor. I was unable to excavate any further west.

To the eastwards it was cleared out a long way; a man can easily walk in it. It is 2 feet 3 inches wide, with an average depth of 7 feet 6 inches. The sides are constructed of hewn stones, of good size, each layer one foot or more high, and in some places covered with thick flagging stones, in other places with a kind of an arch, consisting only of two stones placed in a slanting position one against the other. I could not positively decide in my own mind which of the two coverings is the oldest.

Eastwards it goes 150 feet to the building erected about fifteen years ago, where the passage was then observed for about thirty feet more, and was partially destroyed in digging the foundations.

The foundation of the new building as well as of the old is not laid on the rock, but on a layer of concrete.

The surface of the rock is very deep here.

The bottom of the conduit at the eastern part is seventeen feet below the surface or about 2,389 feet above the Mediterranean Sea.

In the "Recovery of Jerusalem" (page 178) Sir Charles Warren describes a similar passage which he found outside the city wall, and giving its level to be 2,390 feet; it is evidently quite clear that the one now found is a continuation of it. I have connected the continuation with dotted lines by a round bend, as I scarcely think it would be a sharp one (*see* Plan I). Sir Charles Warren believed that the portion of the drain or passage outside the city wall was for the overflow of the Birket Israil, and leading from its north-eastern corner, which is now evidently clear was not the case, but that it may probably have been a sewage drain coming from the fortress of Antonia and neighbourhood, and draining off into the Kedron Valley. During the progress of clearing away for the foundation of the new building, and over the conduit, several stone water spouts were found, which is strong evidence that other drains led into the main one.

As the sloping is always higher than the flat covering, I think the latter is the older of the two.

No. 4 are drawings of one of the waterspouts; A is a section, B shows the length and side view, and C is a view in perspective. It will be observed that the square part was intended to be built in the side or wall, leaving the projection into the drain about 9 inches.

#### *Fragments of Carving.*

When the ground surrounding the church of St. Anne was being cleared of the ruins, columns, capitals, bases, and mouldings were found, and are now piled up in a heap opposite to the entrance to the church. I give sketches of a few—Nos. 5, 6, 7. No. 5 seems to be the most curious; it is three steps cut out of a hard reddish stone, with the cross of St. John cut out on three of its sides. On the right and left sides they (the crosses) are of equal size, with a ring round them; the other side has the same arrangement, but the cross is larger and higher up. The steps are 1 foot 4 inches long and  $9\frac{1}{2}$  inches broad; the two upper ones are 9 inches in height, the lower one 1 foot 4 inches, making the total height of the stone 2 feet 10 inches. On the sides of the steps is a  $2\frac{1}{4}$ -inch rim, on which apparently stood a metal railing, the holes in which the rails were fastened being still visible. The question arises, What was this stone with the three steps used for? My opinion is that it stood in front of a font for the use of those persons who were about to be baptized. Or it may have been the steps to a pulpit or altar. The crosses indicate that it was used in the Middle Ages. The workmanship is good and well preserved.

No. 6 is a column in several parts, exhibiting good workmanship, put together and erected 28 feet from the north-west corner of the church of St. Anne. On the base (which is made of the same reddish stone as No. 5) is a panel with a cross in relief, exactly the same as in No. 5, and exhibiting the same kind of workmanship, but the mouldings above are of a different stone, and differently worked from that of the base; the pillar is apparently much older, is 21 feet 8 inches long, and 1 foot 8 inches in diameter. The capital is of marble, and is in a good state of preservation, but not rare.

No. 7 is a carved marble stone; the thick black lines are about half an inch wide, with a deep groove, having flute and cornice-shaped bands. Ornaments of a similar kind are often found with bands in relief, entwined at right angles, but this one with deep grooves and cornice-shaped is rare. The stone is about 8 inches thick, 2 feet 10 inches long, and 1 foot 2 inches broad, only a fragment of its former size.

#### *The Church of St. Anne.*

Vogue's Plans of the church of St. Anne in "Les Eglises de la Terre Sainte," Paris, 1860, like many others which I have seen, are far from being correct. The building is shown as being regular, whereas it is irregular, which can be seen at a glance of the plan which I made

(No. 1). The church, as it now stands, has many irregularities. In the east it is narrower than in the west; the side aisles are different in length, and slightly different in width. The buttresses in the northern wall project much more and stronger than those in the southern wall; the reason for this is difficult to account for. Each of the four buttresses in the western front differ in detail from one another, which is very strange, and this fact is not indicated on any of the plans I have seen.

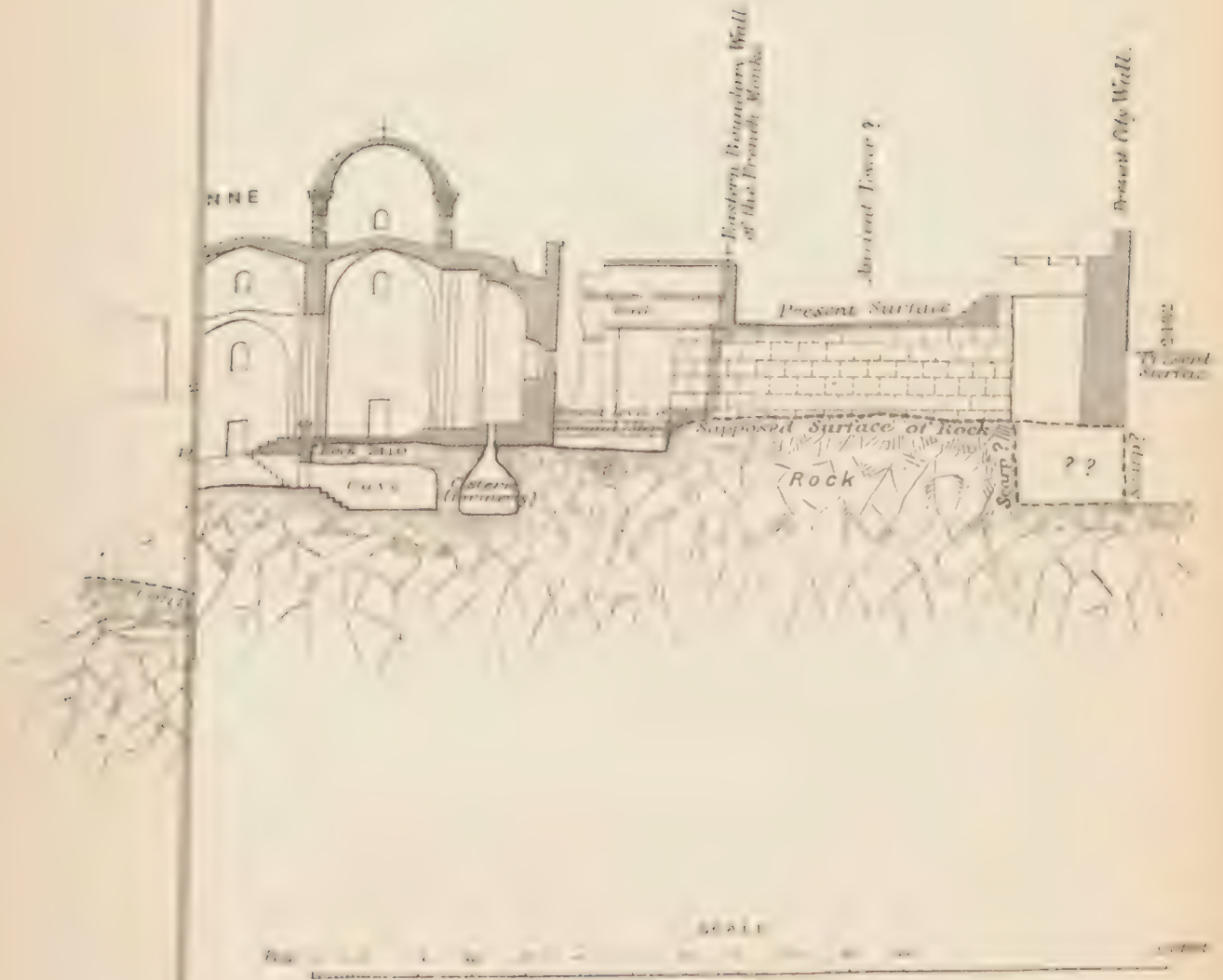
The church is now surrounded by a paved court, bounded on the north and east by high walls, on the south by houses, and in the west by gardens and walls, and low buildings. (See Sections.) The rock-cut caves under the church are now connected, but formerly were not so. The eastern one resembles the bottle-shaped cistern; the western one, a vault, is the reputed lodging of Joachim and Anne, the parents of the Virgin Mary.

#### *Ancient Tower.*

When clearing the place round the church, the architect, Mons. Maux, found this old tower, and cleared away the part projecting into the French property on the east side, and 21 feet 6 inches distant from the church. It was originally 76 feet long from north to south, and 62 feet broad from west to east, extending to the present city wall. Those measurements are approximate to those of the "Tower of David," and also the tower in the north-east corner of the Haram esh Sherif. The stone material used in this old tower I am unable to describe. From the configuration of the ground it would appear to have stood on the top of the ridge, and very probably on the eastern side of the tower a rock, scarp, or ditch may be found, but without excavating it is quite impossible to say. As to the object of this tower there is no evidence to produce; but I think it cannot date further back than the period of Agrippa, in the first century of the Christian era. There is some probability that the belfry of which Blackburn writes stood on this tower: "Era anesso anche el suo Campanile ma non resta di esso se non il primo ordine," 91 (Tobler, "Top. Jerusalem," Berlin, 1853, page 428), which I think to be the case. If so, the ditch or rock-scarp would be east of the tower, and the same as that of the present town wall.

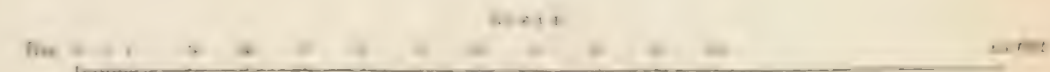
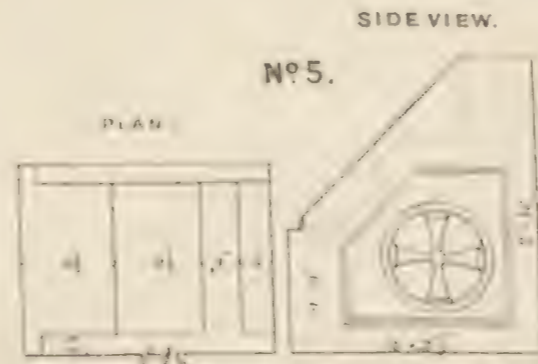
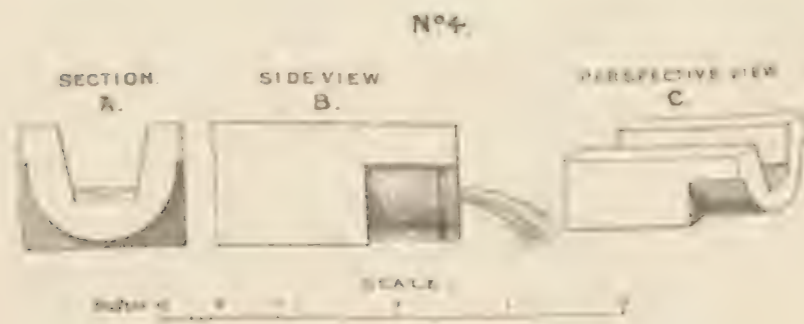
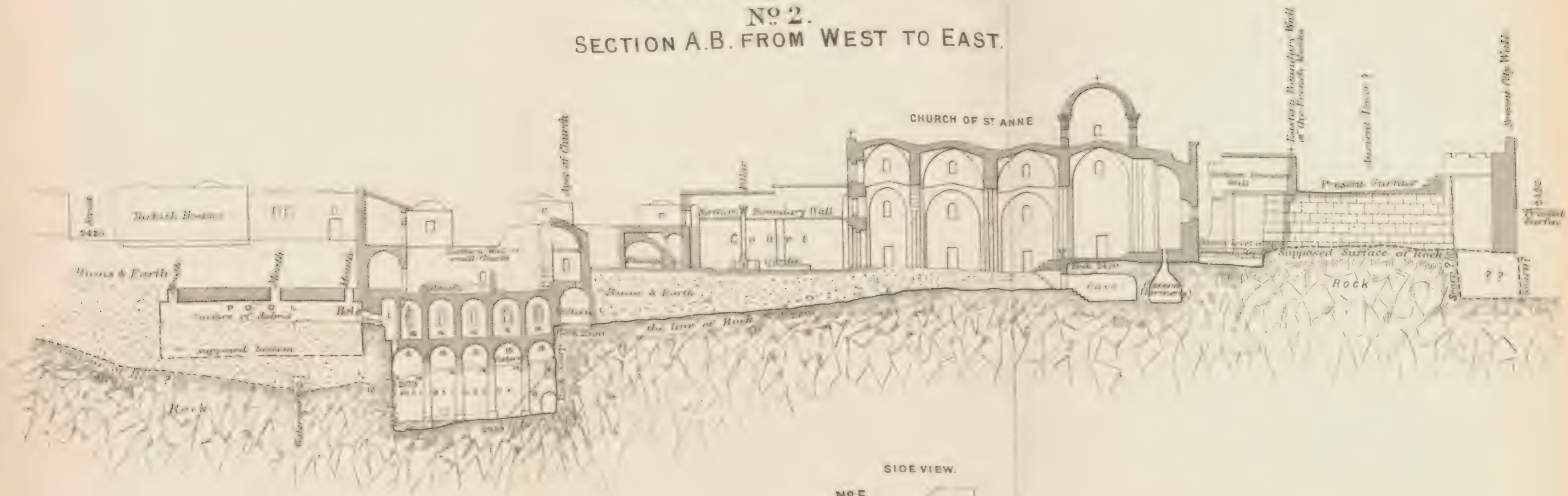
#### *The Pool of Bethesda.*

From the court west of the Church of St. Anne, and opposite the north-western angle, is the entrance to a passage, newly opened up, 24 feet in length, which leads into a court of about 50 feet square; the surface is very uneven, consisting of rubbish and ruins, sloping towards the north-west. On the east side of this court is a large arched room, open towards the west, marked 8 on Plan I; it is half full of earth; the masonry is Crusading. The north wall of this chamber is 6 feet 3 inches thick, in which is a wide door and short passage, with two steps leading down to a row of narrow (only 9



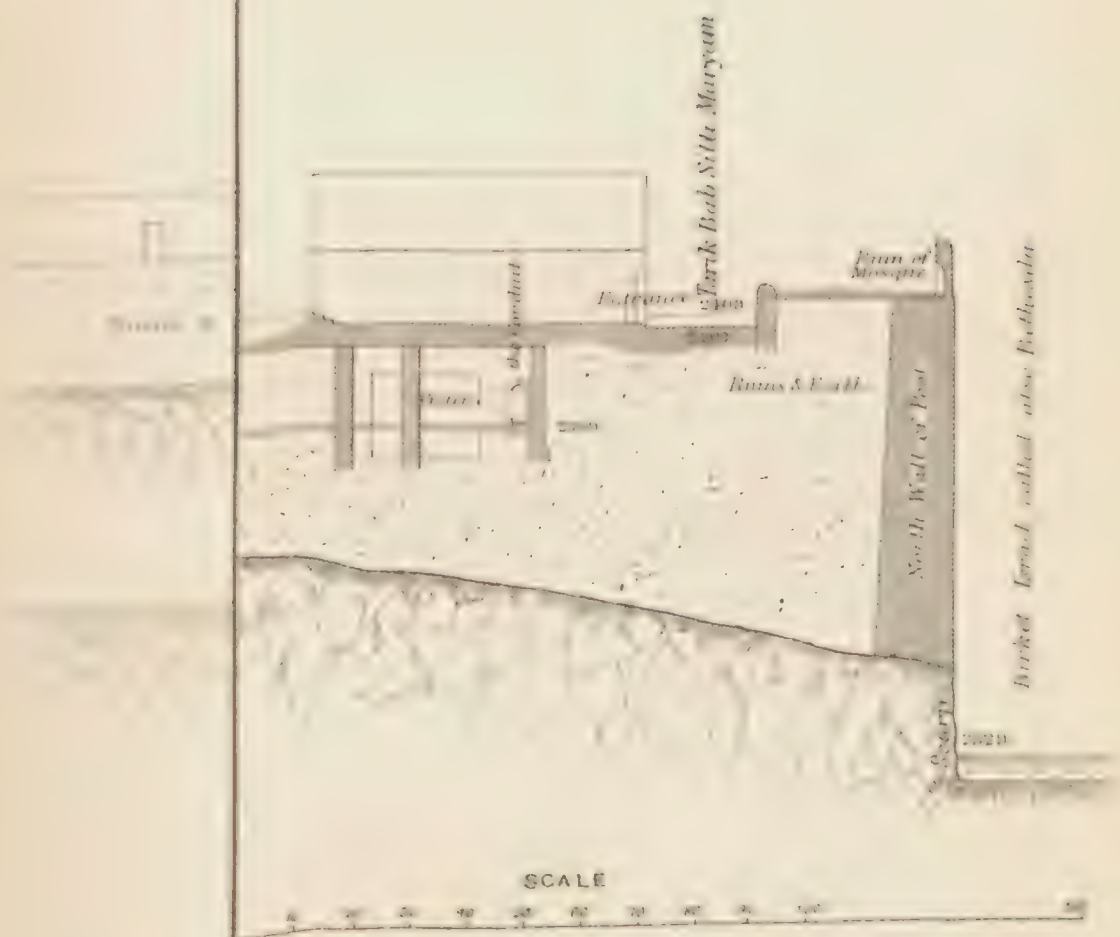
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POOL OF BETHESDA,  
 No. 2.  
 SECTION A.B. FROM WEST TO EAST.



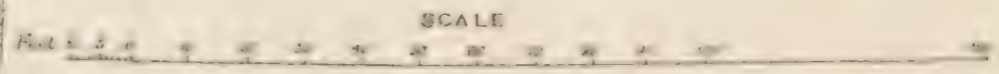
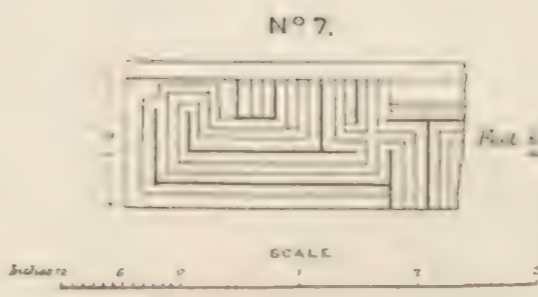
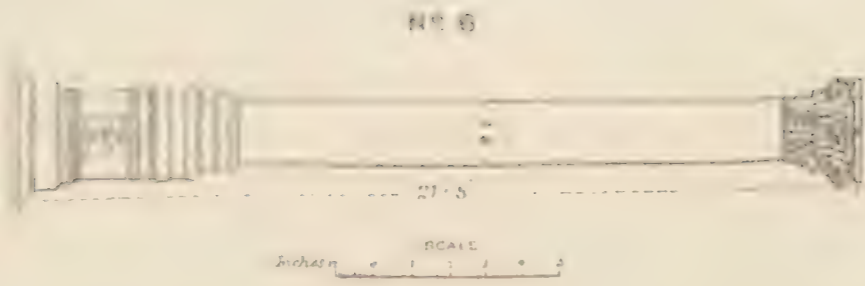
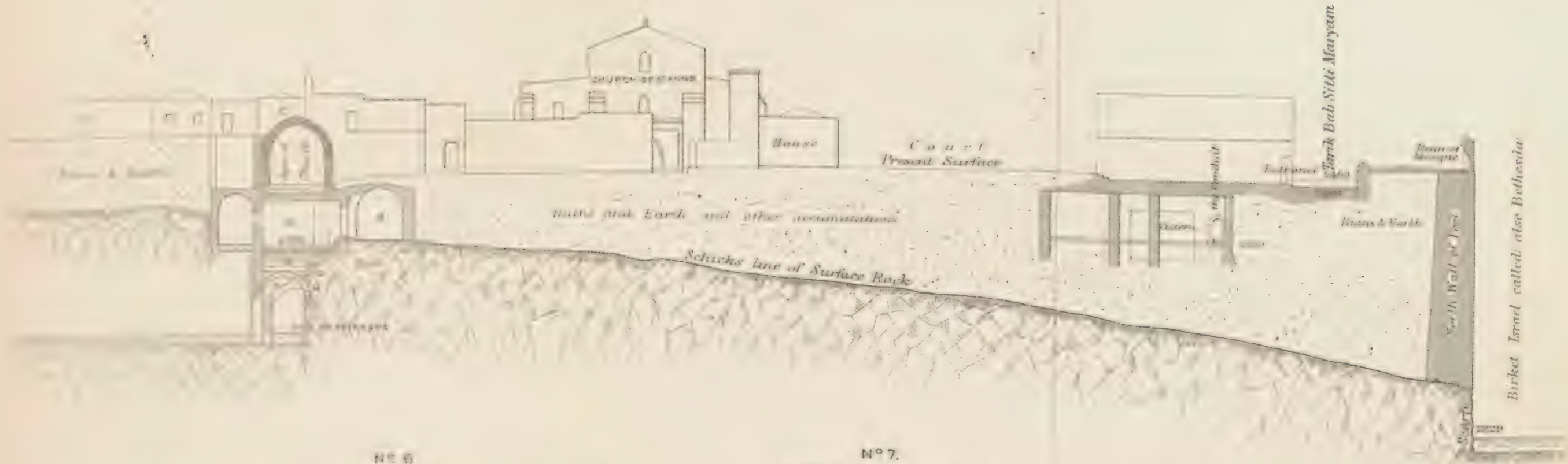
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POOL OF BETHESDA.  
 No 3.  
 SECTION C. D. FROM NORTH TO SOUTH.



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feet wide) rooms ; traces of the eastern two are still visible, the three to the west being buried under rubbish. The monks, in digging along the western end of the court, came upon the wall between the fourth and fifth room, exactly of the same thickness as that between the first and second (the eastern two) ; this is evidence that there were five rooms of equal size, each 9 feet wide and about 14 feet long ; the exact length I could not decide, as there are no traces visible to show the southern ends of the walls. It seems that towards the south the halls or porches were open with a narrow passage in front of them, as indicated in Plan No. 1. The half-circled barrel arches of these vaults or porches were 13 feet in height in the centre ; each vault had an arched window in the northern wall, which seems to prove that they looked into an open street or passage, 11 feet in breadth, but which is now covered by a half-circled barrel arch in its whole length ; the wall in which the windows are is 2 feet 8 inches thick, but the thickness of the one opposite I could not obtain. Now on the top of these vaults a church once stood, the apse of which in the east is to a great extent preserved as indicated in Plan I, and Sections 2 and 3. The church was evidently not large, for, without the apse, only 20 feet wide (inside measurement), and, from an indication in the northern wall, seems to have been only 20 feet long. In the northern wall some stones are seen projecting ; I rather think these did not belong to the western end of the church, but that the church and ante-church extended over all the five vaults, for there is, a little to the west of the stones projecting in the same north wall, a very nicely shaped recess, such as are always found near the altar or font, so I imagine that over the middle porch stood the font, and this outer or ante-church was the baptisterium of that period. When the church was in use the font would be above the centre of the pool below, and the apse over the cistern, on the higher rock, which is 14 feet deep (see Section 2). A narrow door on the northern side of the apse leads to a small chamber, in which is the mouth of the cistern (see Plan I).

The flooring of the apse has disappeared, and is grown over with grass ; to the north and on higher ground are some Moslem houses, of only one storey high, in a bad state of repair.

Having explained all this, which is visible by day, it is time to light candles and go down below, descending by steps leading to the flooring of the porches ; over two high steps (9, Section 3) a wooden ladder is placed, and resting on a flat place marked 10 on Plan I, connecting the head of a flight of steps (marked 11 on Plan and Sections) which lead 19 feet down to a tank, containing, even to-day, some water. The bottom of it is partly uneven and sloping towards the west ; the steps end where the bottom is highest and dry when the water is low.

The west, south, and eastern sides of the tank are cut in the rock to the greater part of its depth, and are perpendicular. The northern side is a wall.

The general level of the bottom at the foot of the stairs is 2,359 feet above the Mediterranean Sea ; the top of rock on west side is about 2,373

feet (could not obtain exact level), the south side is 2,376 feet, rising a little more, and on the east side it rises up to 2,390 feet.

As Sir Charles Warren's contour (marked 12 on Section 2), giving 2,369 feet, passes only about 10 feet west of the tank, and comparing it with the heights of the rock on the other side of the valley, it is clear that the water course is actually about 20 or 25 feet more west, as I have shown in Section 2 (13). Probably, on the eastern slope, there had been originally a cliff or precipice.

The pool is now 55 feet long, but this was most probably the breadth, and 12 feet 6 inches of an average in width ; but, apparently, towards the north it extended much farther, as the present northern wall was subsequently built, for it does not appear to belong to the original work, excepting the round bases of the five piers, which are hewn out of the living rock. These bases are not all of equal height, but about  $2\frac{1}{2}$  to 3 feet each above the bottom of the pool, having a diameter of 3 feet 2 inches. On these once stood round pillars, with the exception of one (the second from the west) which is square and walled in, and having a diameter of 3 feet. As regards the height of these pillars we may conclude that they would be about the same elevation as the surrounding rock : the roofing was probably constructed of long flat stones stretching from pillar to rock, on which perhaps the five porches mentioned in John's Gospel, v, 2, were erected.

The five porches with the roofing and the pillars were destroyed, and on a restoration square piers were built of hewn stones in place of the pillars, and arched across over the tank (14). On top of the tank roof (14) barrel arches (15) were built. Such is my reasoning of the plan of erection with the five porches from the traces (16) that exist at the present day (compare Plan I, Sections 2 and 3). Later on, the openings between the piers were shut up with walls, as the masonry of these walls is not connected with the masonry of the piers.

I was told that there is always some water in the cistern, but the source from where it comes I could not ascertain.

The steps leading down into the pool are not the original ones, they are neither ancient nor modern ; they are built, and the original ones were certainly hewn out in the rock, as we generally find them in cisterns ; they vary in their height and width, and have apparently been several times repaired. There is an iron railing which is quite modern ; besides the two large ones, I counted twenty-four regular steps.

The bearing of the tank below differs slightly with that of the porches above. The bearing of the church of St. Anne is somewhat curious too.

From the examination of the details on the ground now described, I am under the impression that the cistern is the Pool of Bethesda ; at least it was the place which in the Middle Ages was considered to be the Bethesda.

I now append a short history of the Pool of Bethesda :—In the Old Testament the Pool of the Bethesda is not mentioned, but in the New Testament, St. John v, 2, we read, "There is at Jerusalem by the sheep

market, or gate, a pool, which is called in the Hebrew tongue Bethesda, having five porches" (in Neh. iii, 1, "Sheepgate"). The pool was near the Sheepgate; the Sheepgate was north of the Temple, which I believe to have been under the Harem Area, and a little south of Bab el 'Atm, or Hytta; and the pool, now examined for the first time, is north of the Harem Area, and in the neighbourhood where the Christians always thought it to be, though in later times, when it got buried up in ruins and *débris* and lost, the name Bethesda was applied to the Birket Israil. In the 4th century the "Bordeaux Pilgrim" writes: "There are two great pools at the side of the Temple, one on the right and the other on the left, made by Solomon." As it appears he came in by St. Stephen's Gate, and proceeded westwards, he would have Birket Israil on the left, and the one now discovered and examined on the right, near the church of St. Anne. Continuing along the street, he came to the "twin pools," which are outside the north-west corner of the Harem Area and under the new convent of the Sisters of Zion, and calls them Bethsaida = Bethesda, and mentions the five porches and the sick that were healed there; also notes the red colour of the water—and so does Eusebius—"that in one it was red, and the other it was rain water." But, as both pools, under the "Sisters of Zion," are so closely connected, the water in them both must have been always of the same colour—rain water, coming from a distance over the surface of the ground, is at the moment always red. If in the 4th century the "twin pools" were wrongly called Bethesda, the name later on was transferred to the one (the real Bethesda) now recovered, and which the Bordeaux pilgrim says was on the right hand. After the church of St. Anne and the convent were built the proper name was then renewed to the pool, which has since always been stated to be near to the church of St. Anne. Williams, in "The Holy City," p. 484, came to the same conclusion, that the lost pool (Bethesda) would be found near the church of St. Anne.

The pilgrims, in their accounts of Jerusalem, generally describe the pool with the five porches over it as being near the church of St. Anne. In later times, when the situation of the pool was lost, and spoken of as having two porches, the name was transferred to the Birket Israil, which is also near the church of St. Anne.

Gumpenberg, in the 15th century, notes that there were twenty-three steps leading down to the water, which can only be applicable to the one now recovered, which has twenty-four steps to the bottom; but very possibly in Gumpenberg's time the water was a foot higher. Tschudi gives thirty-three, but the two large steps over which is now placed a wooden ladder would make ten regular steps, which would account for the thirty-three. The Birket Israil would want at least seventy steps.

"The Holy City," by Williams, I do not possess a copy of, but I know he states that the natives speak of underground springs and large tanks in the neighbourhood of the church of St. Anne.

In closing this report I only wish to add that the Birket el Hedjeh, outside the city wall and east of Bab es Sahire (Herod's Gate), is only 700

feet north of the pool and in the same depression of ground, and may have been connected.

If the Bethesda extended farther north and under the present houses, the distance between the two would not be very great—about the same as that to the Birket Israil. I am convinced that we have in this pool, which has lately been discovered, the Bethesda of the mediæval times, and would hail with delight any notes from the Pilgrims and others appended to clear up and confirm the matter.

C. SCHICK.

JERUSALEM, 5th April, 1888.

## II.

SOME weeks ago I forwarded a plan and sections of the quarter in Jerusalem called "Salahieh," showing the newly discovered pool with traces of five porches or chambers over it. Since then further excavations have revealed another cistern or pool.

In order to understand what I have now to say, I enclose three small plans which, when put together, show the three storeys, the second pool, and the one already reported on; also a section.

The plans are marked A, B, C, D.

A.—When I revisited the place again I found that I had made some mistake in laying down on the plan the direction of the tank from the bearing I had taken, which is now corrected as shown.

B.—Is a plan of the probable, or what I suggest, five porches or chambers, the remains of the two eastern ones being covered up, and also the western one, the arches being all broken down. The walls between the chambers were apparently not entire, but partly arched, and communicating one with the other.

In digging through the western one, which is full of earth, and the arch fallen in, a rather low arch was found on its western side, belonging to a more recent period, evidently erected for the support of the present wall of the chamber over it. In the latter wall was found an opening, or doorway—a view of which I give on Plan E. This doorway was well made, and in front of it (west) was formerly an open passage (*i*). Another and wider passage came from the east, into which the windows of the porches or chambers opened, but both are now covered up. There may possibly have been a similar passage from the west, a continuation of *l, k*, but no indications of it were found. The masonry marked *a, b*, is apparently of the same period as the apse of the little church already mentioned.

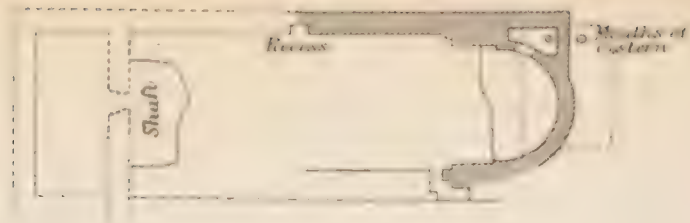
The passage marked (*i*) is peculiar from its having a rock-scarp at its southern end, which surprised me very much to find, the rock rising to such a height. Consequently the rock is much higher than I at first observed (Section 2).

It seems that the shoulder wall on the west side is also rock, as shown in Plan B and Section 2. Behind the rock wall or scarp is a very thick wall built of small stones; a hole, see Plan B and Section 2, was made



PLAN OF THE CHURCH.

C.



*Shaded portions Crusading*

PLAN OF THE PROBABLE 5 CHAMBERS & WESTERN POOL.

B.

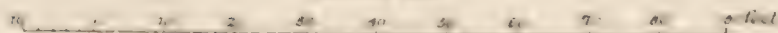


PLAN OF THE TWO POOLS

A.



SCALE  $\frac{1}{500}$

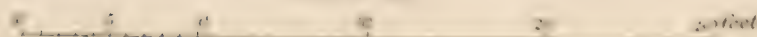


VIEW OF DOORWAY

E.



SCALE  $\frac{1}{1000}$



in this wall, and a labourer from the village of Selwan crept in to see what was behind. He returned very quickly and died soon after, either from fright (he said that he had seen a large serpent) or from the impure air.

When I heard of this I immediately went to the place, and examined and measured the hollow or tank, but observed no serpent or anything strange, and found it to be an arched tank or cistern, tunnel-shaped, about 16 feet 6 inches wide. I could not measure it exactly at the springing of the arch, as there is so much earth. The length, from the thick wall westwards, I ascertained to be 64 feet, and about the middle of it is a special arch or girder built of hewn stones, on which the wall of small stones rests.

This second pool or cistern has three mouths—one in the centre, near the special arch, and the other two near the end walls.

I could not obtain the correct bearing or direction of the side walls, but they appeared to be running in the same line as those of the five chambers or porches, apparently of the same depth (probably deeper) and width.

On the flooring of the passage (*i*) south of the doorway is a small mouth to the pool below.

On the north end of the passage (*i*) is a badly built-up door, the lintel being a pillar, leading to a little room (*l*) of no special interest, but it was formerly part of the passage (*k*).

The size of the cistern east of the five porches or chambers, and under the apse, I have not ascertained, but think that it must extend as I have shown it on plan in a dotted line.

It has two mouths, one in the little side chamber of the apse of the church, and the other to the east of it, in the courtyard of a Moslem house.

C.—Is a plan of the little church over the vaults, &c., and the position of the shaft which the monks sank for their excavations, and which I have explained were found.

D.—Is a part of Section 2, already submitted, showing the corrections, the second tank or pool, and the passage (*i*) with the well-made doorway. The wall in which it stands is only 1 foot 9 inches thick, and has, 11 feet from the flooring, two nicely-carved corbel stones projecting about 1 foot; the wall above then becomes thicker. The passage (*i*) was formerly open, and on its flooring is a mouth to the tank or pool underneath, and it seems that the bottom here consists of rock or, it may be, very large flat stones, similar to the "pavement" described in the *Quarterly Statement*. The south wall seems to consist of rock, rising to a considerable height, as shown in Section 2, similar to the lower part of the tank wall, then forming a kind of bench 1 foot 8 inches broad, as shown in B. Behind is the 6-foot thick wall through which the hole was broken.<sup>1</sup>

<sup>1</sup> All embodied in Section 2 and Plan B.



E.—A view of the well-made door with projecting corbels.

In conclusion, I wish to state that further examinations will bring more details to light, consequently some of my suggestions or explanations may be wrong. However, I record what I have seen, and submit it for consideration.

May 9th, 1888.

C. SCHICK.

### III.

From the "Bordeaux Pilgrim" (Appendix III), published for the Palestine Pilgrims' Text Society.

THE questions connected with the Pool of Bethesda are of so much general interest that it has been considered desirable to treat them at some length.

*The Name.*—(1) In the Authorised Version (John v, 2) the pool is said to have been called in Hebrew Bethesda (Βηθεσδα), as if "house (place) of mercy," or perhaps, as suggested by Reland (856), the "place of the pouring forth" of water.<sup>1</sup> This reading is supported by the high authority of the best known Syriac text, the Peshito; it has also respectable support in MSS. and Versions, and internal evidence pleads strongly for it. The complete absence of any allusion in non-Christian writers to such a pool makes it very likely that its name is an invention of the Evangelist, and, if so, Bethesda was the one likely name for him to choose (Späth. "Protestn. Bibel ad Joann.," v, 2). The weight of MS. authority is, however, undoubtedly against the reading Bethesda; and the Revised Version gives, in the margin, the alternative readings Bethsaida and Bethzatha.

(2) The reading Bethsaida (Βηθσαιδα), "a fishing place," is supported by the Vatican and Vulgate texts, and by the Syriac Version revised by Thomas of Harkel (616 A.D.); it is also the form used by the Pilgrim of Bordeaux. This name, however, which might naturally be given to a town on the shore of the Sea of Galilee, is scarcely applicable to an open reservoir crowded with bathers.

(3) The reading Bethzatha (Βηθζαθα), "place of olives," is supported by the high authority of the Sinaitic text, and it is the form used by Eusebius in the "Onomasticon" (s. v. Βηζαθα), where a θ has dropped out. The Belzetha (βελζεθα) of the Cod. Bez. is also a corruption of the same word.

(4) The name Bezetha (βεζεθα), by which Josephus distinguishes the hill north of the Temple, is merely a different form of Bethzatha (Βηθζαθα);<sup>2</sup> and it may be suggested as possible that the pool derived

<sup>1</sup> With this may be compared the Arabic *Beit el Ma*, "place of water"—a name applied to springs near Antioch, and at *Náblus*.

<sup>2</sup> In the LXX we occasionally meet with Beth (Β:θ) instead of Βαιθ, or Βηθ, as in Βεθγειδώρ (Vat.), 1 Chron. ii, 51; Βεθσούρ (Alex.), Josh. xv, 58, etc. The θ also sometimes disappears, as in Βαιφαλάθ (Vat.), Josh. xv, 27, and Βαιμών (Vat.), Jer. xlvi, 23; and in Syriac and Chaldee the final "th" may be and is

its name from the hill, and was known as the "Pool of Bethzatha" (Bezetha). In connection with this suggestion it may be remarked that the "Pool of Siloam" is supposed to have been so named from the rock-hewn channel which conveyed to it the waters of the Fountain of the Virgin.

(5) In John v, 2 (R.V.), the Pool of Bethesda is said to have been "by the sheep-gate," where the word "gate" is supplied. Eusebius, however, in the "Onomasticon," calls Bethesda "the sheep-pool," and all other writers follow him. Chrysostom, quoting John v, 2, reads *προβατικὴ κολυμβήθρα*, "sheep-pool;" and this agrees with the reading of the Sinaitic Version, as well as with that of the Vulgate, "probatia piscina." See also Athan., Cyril, &c., as quoted below.

*Notices in Early Writers.*—"Now there is in Jerusalem by the sheep-gate a pool, which is called in Hebrew Bethesda, having five porches (*στοαὶ*). In these lay a multitude of them that were sick, blind, halt, withered. [Waiting for the moving of the water, for an angel of the Lord went down at certain seasons into the pool, and troubled the water: whosoever then first after the troubling of the water stepped in was made whole, with whatsoever disease he was holden.<sup>1</sup>] And a certain man was there . . . I have no man, when the water is troubled, to put me into the pool."—John v, 2-7 (R.V.).

Bethesda, "a pool (*κολυμβήθρα*) in Jerusalem, which is the sheep-pool, formerly having five porches. It is now identified with the twin pools (*ἐν ταῖς λίμναις διδύμοις*), of which one is supplied by the periodic rains, whilst the water of the other is of a ruddy colour—a trace, they say, of the carcasses<sup>2</sup> of the sacrifices which were formerly cleansed in it before offering, whence also it was called *προβατικὴ*, 'sheep-pool.'"—Euseb., "Onom." (*s. v.* Βηζαθά); 330 A.D.

"There was at Jerusalem a sheep-pool, which is still in existence; it had five porches (*στοαὶ*), but the structures surrounding it are now destroyed."—Athanasius (?), "De Semente;" Migne, xxviii, 164; 320 A.D. (?).

"Further in the city are twin pools (*piscinæ gemellares*), with five porticoes, which are called Bethsaida. There persons who have been sick for many years are cured; the pools contain water which is red when it is disturbed."—"Itin. Hieros.;" 333 A.D.

"The sheep-pool (*προβατικὴ κολυμβήθρα*) was in Jerusalem; it had five porches (*στοαὶ*), four surrounding it and one in the middle" (*τέσσαρας μὲν περιτρεχούσας, μέσην δὲ τὴν πέμπτην*).—Cyril of Jerus., "Hom. in Par.," § 2; Migne, xxxiii, 1133; 370 A.D.

"There is in Jerusalem a sheep-pool (*προβ. κολ.*) . . .," John v, 2, as quoted by Chrysostom, "In Joan.;" Migne, lix, 203. This reading agrees with the Sinaitic Version and the Vulgate.

dropped. No importance therefore attaches to the substitution of ε for η, or to the disappearance of the θ; and, so far as reasons of language go, Βεζεθά, Βηζαθά, Βηθζαθά, etc., may be different forms of the same word.

<sup>1</sup> In the margin only.

<sup>2</sup> Lit., of the "victims."

Jerome ("Onom.") agrees with Eusebius as quoted above ; 420 A.D.

"The pool which was once called sheep-pool."—Cyril Alex., "In Joan.," lib. 12 ; Migne, lxxiv, 636 ; 430 A.D.

"Bethesda is visible and remarkable by its double pool (*gemino lacu*) ; the one is commonly filled by the winter showers, the other is distinguished by its red waters."—Eucherius, "De Loc. Sanct.;" 440 A.D.

"From the house of Pilate to the sheep-pool (*piscina probatica*) is more or less one hundred paces. There Christ cured the paralytic, whose bed is still there. Near the sheep-pool (or 'in the sheep-pool' according to some MSS.), where the sick wash and are healed, is a church of the Blessed Virgin."—Theod., "De Terr. Sanct.," viii ; 530 A.D.

"Returning to the city (from Aceldama), we came to a swimming-pool (*piscina natatoria*) which has five porticoes, and in one of them is the Basilica of St. Mary, in which many miracles are wrought. The pool itself is now choked with filth, and therein are washed all the necessary utensils of the city. We saw in a dark corner an iron chain with which the unhappy Judas hanged himself."—"Ant. Mart.," xxvii ; 570 A.D.

"I enter the holy Probatia (*προβατικὴ ἀγία*), where the illustrious Anna brought forth Mary."—Sophr. ; "Anac.," xx ; Migne, lxxxvii, 3, p. 3821. In the same place the paralytic was cured, *l. c.*, p. 3823 ; 630 A.D.

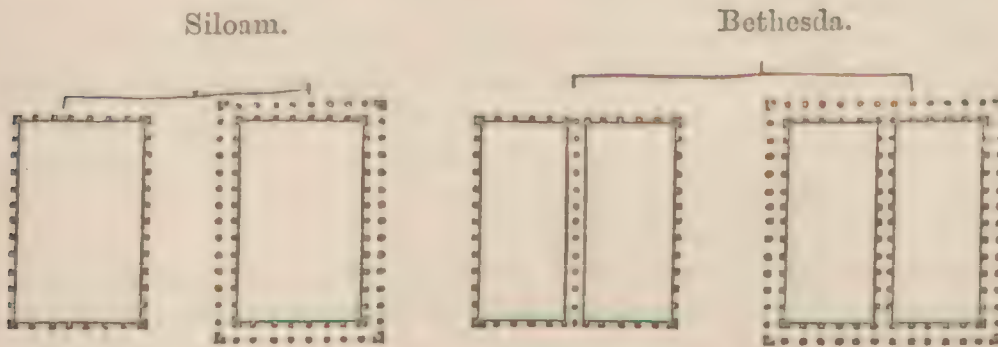
"Unto us is born, in the holy Probatia (*ἐν ἀγίᾳ προβατικῇ*), the mother of God," etc.—Joan. Dam., "In nat. B. V. Mar.;" Migne, xcvi, 669. See also the curious apostrophe to the Probatia (*l. c.*, p. 677) and "De Fide Orth.," lib. iv ; Migne, xciv, 1,157 ; 730 A.D.

From the church of St. Sion, in the middle of Jerusalem, Willibald went "to the porch of Solomon, where is the pool where the infirm wait for the motion of the water, when the angel comes to move it ; and then he who first enters it is healed. Here Our Lord said to the paralytic, 'Rise, take up thy bed and walk.'"—Will., "Hod.," xix ; 726 A.D.

A church of St. Mary, in the Probatia, where she was born ("Commem.," circ. 808 A.D.). The tract, "Qualiter sita est Civ. Jerusalem," supposed to have been written before the First Crusade, places the sheep-pool east of the *templum Domini* (Dome of the Rock), and outside the gate of the Atrium, which appears to have been conterminous with the Haram Area.

*Nature of the Pool.*—The Greek word *κολυμβήθρα*, "a swimming bath," translated "pool" in John v, 2, is used in John ix, 7-11, for the "pool" of Siloam, and in Josephus for the pools Struthion and Amygdalon ("B. J.," v, 11, § 4) and the pool of Solomon ("B. J.," v, 4, § 2) ; its equivalent in Latin is *Piscina*. These swimming baths, pools, or reservoirs were, as a rule, rectangular in form, and open to the air ; and they were often surrounded by columns or by porticoes (*στωαί*), in which the bathers undressed themselves and lounged before or after bathing. Siloam is said by the Bordeaux Pilgrim to have had four such porticoes, and remains of them have been found by excavation at the modern pool of that name. The Roman bath (*piscina*) at Bath seems to have had similar porticoes, and its appearance when perfect must have been not unlike that of the

Pool of Siloam. Bethesda had five porches, or porticoes, and much ingenuity has been expended on their arrangement. The explanation is very simple when it is remembered that Bethesda was a *double* pool; there was a portico on each of the four sides, and the fifth, as stated by Cyril of Jerusalem, was in the middle, between the two pools. It may be inferred from this arrangement that the twin pools were on the same level, close to each other, and not of any very great size. The porticoes of the pools of Siloam and Bethesda may have been on some such plan as those suggested below :



*Position of Bethesda.*—The Bible narrative indicates that Bethesda was in Jerusalem, and that it was an open reservoir having five porticoes. In the fourth century Eusebius, who gives no indication of position, speaks of the porticoes as having formerly existed; and the tract “De Semente” expressly states that they had been destroyed. Eusebius, moreover, says that the *κολυμβήθρα* was then identified with the twin *λίμναι*, as if some change had taken place in the character of the reservoir; and it may be remarked that Eucherius uses the word *lacus* instead of the usual *piscina*. The Bordeaux Pilgrim tells us that Bethesda was more within the city than two large pools at the side of (in the vicinity of) the Temple, which have generally been identified with the Birket Israil and the pool that formerly existed near the church of St. Anne. In the sixth century Theodosius says that the pool was about 100 paces from the house of Pilate, which he and Antoninus identify with a church of St. Sophia, apparently not far from, if it be not the same as, the “Dome of the Rock.”

The general tenor of these accounts seems to indicate that Bethesda was identical with the twin pools now known as the “Souterrains” of the Convent of the Sisters of Sion. We have here two pools cut in the rock, side by side, with a partition 5 feet wide between them, and covered by vaults. The total length is 165 feet, and the breadth 48 feet, and a never-failing supply of water enters at the north-west corner. The pools are peculiarly situated in what must have been the rock-hewn ditch between Bezetha and the fortress of Antonia, and this may have led to the name “Pool of Bezetha or Bethzatha,” as suggested above; their position with regard to the Temple would also have been convenient

for washing the "victims" offered on the altar.<sup>1</sup> The source from which the pools derived their supply of water is unknown, but an aqueduct has been found running into the western pool from the north; and there may also have been one of those "drifts" or rock-hewn tunnels for the collection of water, of which there is an example in the Wâdy Biyar, near Solomon's Pools. Water running into the pool from such a drift would naturally carry with it and deposit some of the red earth of which the soil north of Jerusalem is composed, and this, when disturbed, would produce the ruddy colour noticed by Eusebius and the Bordeaux Pilgrim. With regard to the movement of the water, which appears to have taken place at uncertain intervals, it is now generally accepted that the passage attributing the disturbance to the intervention of an angel is spurious; we know nothing of the times and circumstances under which the movement occurred, and can only suggest that it may have been caused by an intermittent flow of water from the aqueduct or "drift." During the rainy season, and for some time afterwards, there would be nothing unusual in such an intermittent flow.

Mons. Clermont-Ganneau<sup>2</sup> has identified these souterrains with the Pool Struthion of Josephus, at the side of which Titus erected one of his mounds against the fortress Antonia; and he explains the meaning of the name Struthion to be "the sparrow's pool," that is to say, the little pool, by a sort of popular *sobriquet*. It seems, however, more probable that in this case the word Struthion means "soapwort," and that the name "Soapwort Pool" was connected with the plant used for cleansing the wool of the sheep used in the sacrifices. There would thus seem to be a connection between the "Soapwort Pool," the "Sheep Pool," and Bethesda, and they were possibly different names for the same pool.

The history of the pool appears to have been somewhat as follows: When Titus erected his mound against Antonia the porticoes were destroyed; and on the rebuilding of Jerusalem, as *Ælia Capitolina*, the open pool (*κολυμβήθρα*) was transformed into a closed reservoir (*λίμνη*). The pool gradually became choked with filth, and at some period prior to the Crusades the site of Bethesda was transferred to the pool near the church of St. Anne. The general aspect of the pool before the destruction of the porticoes is indicated in the subjoined sketch, for which I am indebted to Captain Conder, R.E.<sup>3</sup>

The Pool of Bethesda, or *Piscina Probatice*, is now identified with the Birket Israil, but this identification does not appear in any writer

<sup>1</sup> The lambs for the daily sacrifice were kept in one of the chambers of Beth Mokadh at the north-west corner of the Temple court.—Lightfoot, "Prospect," xxix.

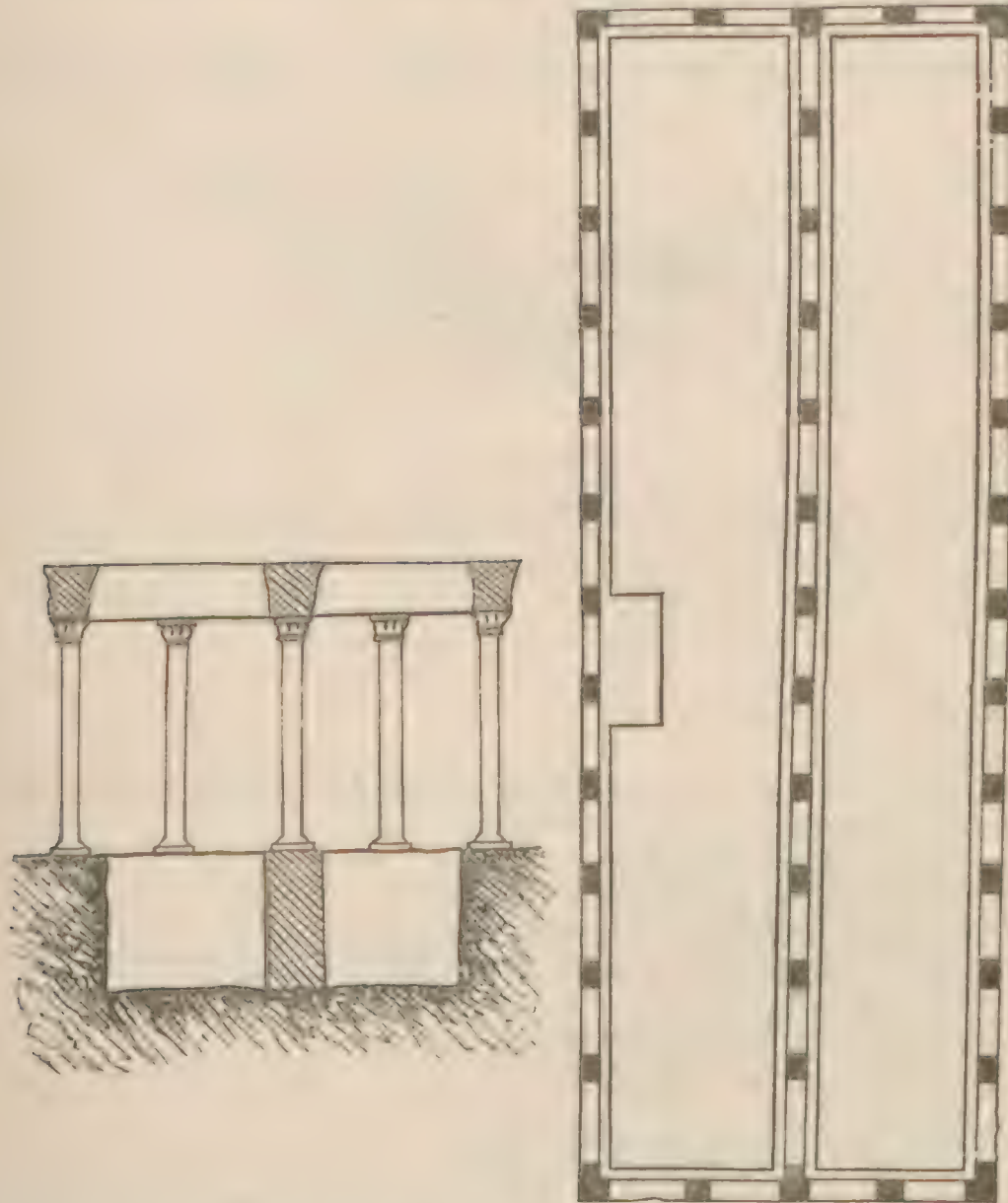
<sup>2</sup> See P.F. Q.S., 1872, pp. 47-51; and, for a description of the souterrains, "P. F. Mem. : Jerusalem," pp. 209-212.

<sup>3</sup> P.F. Q.S., 1871, 106.

<sup>4</sup> It is quite possible that the whole extent of the pool has not yet been discovered, and that it may have had a greater width than is shown on the plan.

before Brocardus (1283 A.D.). The earlier historians of the Crusades applied the name *Piscina Probatica* to a large reservoir adjacent to the church of St. Anne, which is now completely covered up and lost. This pool and the Birket Israil are generally supposed to be the two large pools alluded to by the Bordeaux Pilgrim as being near the Temple (*ad latus templi*); and William of Tyre (viii, 4) states that their water

SIR C. WILSON'S PROPOSED RESTORATION OF THE TRADITIONAL POOL OF BETHESDA.



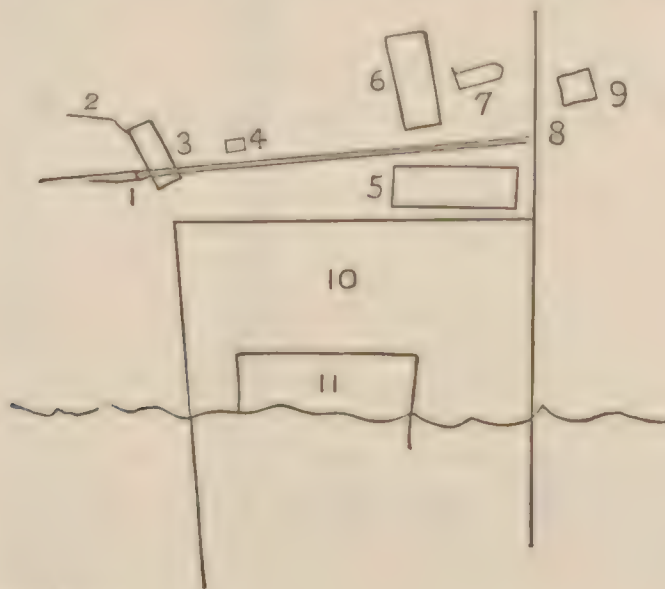
supply was brought by aqueducts from without the city. The Birket

<sup>1</sup> In the "Citez de Jerusalem" a spring is mentioned in front of St. Anne; Brocardus and others allude to water in the upper pool; and Sandys saw water, which must have come down the valley, trickling through the north wall of the

Israil is situated near the mouth of the valley which runs into the Kedron, south of St. Stephen's Gate; the other pool is higher up the same valley, and must therefore be at a higher level; it is clear, then, that no arrangement of five porches, such as that described above, could have existed, and that these pools cannot represent the Bethesda of Eusebius and the Bordeaux Pilgrim.

Dr. Robinson's suggestion that Bethesda may have been at the Virgin's Fountain in the Kedron Valley is hardly tenable, for there is no trace or tradition of anything that could be called a *κολυμβήθρα* in that locality.<sup>1</sup>

SKETCH SHOWING POSITION OF POOLS NORTH OF THE HARAM AREA.



1. Ecco Homo Arch.
2. Aqueduct.
3. Souterrains at the Convent of the Sisters of Sion; Struthion of Josephus; Bethesda of fourth century.
4. Church of the Flagellation.
5. Birket Israil; the modern Bethesda.
6. Supposed position of the mediæval Bethesda.
- 5 and 6. The two large pools of the Bordeaux Pilgrim.
7. Church of St. Anne.
8. St. Stephen's Gate, or Gate of the Lady Mary.
9. Pool of the Lady Mary.
10. Haram Area.
11. Platform of the Dome of the Rock.

Birket Israil. The source from which this water came is an interesting subject for speculation; it was probably to the north of the city, and the same as that which supplied the souterrains at the Convent of the Sisters of Sion, and the reservoir at the Church of the Flagellation.

<sup>1</sup> It may be remarked that the Jews, at the present day, bathe in the Virgin's fountain when the water rises, as a cure for rheumatism.

*Church of St. Mary.*—Before leaving the Pool of Bethesda a few words seem necessary on the curious tradition which places the birthplace of the Virgin in close proximity to the pool, or, according to some writers, in one of its porticoes. The earliest notice of this tradition is in Theodosius, 530 A.D., and it is scarcely necessary to add that it rests on no foundation. The legend appears to have originated in that desire to localize all the events of the Virgin's life (*e.g.*, her death in the "Mother Church of all Churches" on Sion) which grew up in the fifth century after the Council of Ephesus; and we should probably not be far wrong in attributing it to Juvenal of Jerusalem. The modern Church of the Flagellation apparently occupies the site of the original Church of St. Mary; and when Bethesda was transferred to the pool near the Church of St. Anne the birthplace of the Virgin was found in the grotto beneath that church.

It is perhaps worthy of remark that the Arab name of the Church of St. Anne is *Beit hanna*, "House of Anne," an expression which is exactly identical with Bethesda, both signifying "House of Mercy." The Mary legend has also left traces in the Arab nomenclature of this portion of the city; as *Bab Sitti Maryam*, "Gate of the Lady Mary" (St. Stephen's Gate), and *Birket Sitti Maryam*, "Pool of the Lady Mary," outside the walls.

C. W. WILSON.

N.B.—The recent recovery of a portion of the mediæval Pool of Bethesda in the immediate vicinity of the Church of St. Anne, and the probable existence of a second pool beside it, is in favour of the view that the Pool of Bethesda, of Eusebius, was in this locality. Some other explanation must, however, be found in that case for the description of the Bordeaux Pilgrim, which I have supposed to refer to the twin pools beneath the Convent of the Sisters of Sion.—C.W.W.

#### IV.

A NEW discovery of great interest has just been reported by Herr K. Schick, namely, that of a large tank to the north-west of St. Anne's Church, about 100 feet distant. Crossing a courtyard and entering by a narrow passage, a building, measuring about 70 feet east and west, by 25 north and south, with an apse at the east end, is found. Its floor (about on the level 2,400) is some 7 feet below the general surface of the courtyard. Under this building are vaults about 10 feet deep, the floor level being that of the surface of the natural rock. Through the floor of these vaults a cistern is reached, cut in rock to a depth of 30 feet. It lies under the line of the building (apparently a church) with an apse, above-mentioned. Its measurement east and west from one rock wall to another is 55 feet; north and south it measures  $12\frac{1}{2}$  feet, but the north wall is of masonry, with four piers standing on rock bases supporting arches; the spaces between the piers have been filled in with masonry



after building, probably at a later period; and Mr. Schick supposes the pool to have extended further in this direction, perhaps in five arcades or porches between the piers. A flight of twenty-four steps leads down into this pool from the east scarp.

The church or chapel was probably built at a later period, when the surface level was within 6 or 7 feet of its present height, after an accumulation of 10 feet of earth over the rock, which, as we shall see, seems to have been still visible in 1172 A.D. This is also indicated by the position of the walls over the pool. The vaults from the rock surface were no doubt constructed to bear the floor of the new church.

In a note on the Pool of Bethesda (*see* "Bordeaux Pilgrim," P. P. T. edition, p. 54) Sir Charles Wilson has indicated (No. 6 of the diagram) the position of the mediæval Pool of Bethesda just where the newly-discovered pool exists. He has also shown that the Bethesda of the fourth century A.D. was at the Twin Pools (No. 3 of his diagram), at the north-west angle of the Haram.

In an ancient map of Mediæval Jerusalem, published with Marino Sanuto's account of the city (1322 A.D.), a pool is marked north-west of St. Anne, and shown running east and west, or across the valley which here exists. The pool is that mentioned by Ernoul, in 1220 A.D., as the site of Bethesda, though in the second part the author inclines to the later identification of Bethesda with the Birket Israil—the modern Bethesda.

The following notices of the pools are of value in connection with the new discovery:

The Bordeaux Pilgrim (333 A.D.) speaks of two large pools near the Temple—one on the right, the other on the left—in addition to the Twin Pools which he identifies with Bethesda. He ascribes these two pools to Solomon (*see* P. P. T. edition of this pilgrim, p. 20).

In the Onomasticon (Eusebius and Jerome, 330-420 A.D.) Bethesda is said to have "formerly" had five porches, "but now is shown as a Twin Pool."

Theodosius (530 A.D.) places the Probatia Piscina (*i.e.*, Bethesda) near a Church of St. Mary. In 570 A.D. Antoninus Martyr (xxviii) apparently alludes to the Twin Pools as Bethesda. St. Willibald, in 723 A.D., only alludes to the "Porch of Solomon, where is the pool where the infirm wait for the moving of the water."

In the Middle Ages, however, the pool near St. Anne—perhaps, like the Bir Eyûb, rediscovered and cleared by the Franks—becomes more important. Siswulf in 1102 speaks of the Church of St. Anne, and "near it Bethsaida (*sic*), having five porches."

John of Würzburg writes, "in exitu ejusdem ecclesiæ ad dextram manum non longe per diverticulum est Probatia Piscina," clearly describing the newly-discovered pool. In 1172 Theodoricus speaks of the Church of St. Anne: "ad ejus aquilonalem partem qui progreditur, in valle profunda, juxta lapidosam quendam collem cui vetus quoddam opus

incumbit, Piscinam Probatiam inveniet." The mention of an adjacent "stony hill" with "remains of ancient work" and a "deep valley" shows that the accumulation of earth over the rock, which led to the site of the pool being lost, had probably not yet taken place.

We have also the two notes in the "Citez de Jherusalem," where first we find notice of the church over the fountain—written about half a century after Theodoricus.

William of Tyre, ch. 1 (*see* Bongar's "Gesta Dei," p. 473), says of this pool: "Veteris piscina adhuc vestigia retinens quinque porticus habens . . . ad quam nunc per porticam unam descenditur et reperitur aqua ibi gustu amara." Hence in his time (about 1180) the pool had already its present form, and was supposed to be only in part accessible—one out of five porches being open. The bitter water here noticed agrees with Mr. Schick's view, that the channel found near the pool and leading to the Birket Isrâil was a drain. William of Tyre places Bethesda at the newly-found pool, and mentions the Birket Isrâil as *Lacus quidam*.

In 1283 Brocadus, however, places the Probatia Piscina south of the road to the east gate of the city (*i.e.*, at the Birket Isrâil); and north of that road he mentions "a very large pool," which he says Hezekiah made, and which he calls Piscina Interior, or the "inner pool." This becomes the recognised name of the St. Anne Pool, after the change of situation of Bethesda to its modern traditional site.

John Poloner (1422) speaks of the "Piscina Interior quæ est ad S. Annam," and Marino Sanuto (1322) notices the pool by the same name as being near St. Anne. In the "Travels of Sir J. Maundeville" (*see* Bohn's series, "Early Travels in Palestine," p. 172) we read that in the Church of St. Anne "is a well in manner of a cistern, which is called Probatia Piscina, and which hath five entrances." Even as late as 1509 Anselm says that not far from St. Anne, towards the House of Pilate (*Ecce Homo Arch*), is a very large pool.

From these notices we gather the history of the pool. It apparently existed in 333 A.D., and, being rock-cut, may be one of the ancient pools of Jerusalem. Josephus, however, only mentions one pool (Struthion) in this quarter of the city (5 Wars, xi, 4), which appears to have been that known as the Twin Pool "at Antonia."

We gather also from the passages cited that the church over the pool existed in the Crusading period, but probably not earlier, and that the present north wall of the pool existed already about 1180 A.D. In the twelfth century the pool was regarded as the Bethesda (or Bethzatha or Bethsaida) of the Gospel (John v, 2), and called the Probatia Piscina or "Sheep Pool;" but about 1230 A.D. (the time of the second Frankish occupation) the Birket Isrâil begins to be regarded as Bethesda, although the Piscina Interior was known and occasionally called the "Sheep Pool" down to 1500 A.D.

It may here be noted as of some interest that Marino Sanuto gives an account of Hezekiah's alterations in the water supply of Jerusalem. He

regards the Piscina Interior as the "Upper Gihon," and apparently thought that originally an aqueduct ran from Birket Mamilla (west of the city) across to the Piscina Interior, but that Hezekiah diverted the water "west of the Tower of David" to the Lacus Germani (Birket es Sultan). The Birket Mamilla is connected by aqueduct with the citadel (near the Jaffa Gate), and its level is about 110 feet above that of the Piscina Interior.

Whether any of these pools can claim to be the true Bethesda is doubtful. The word in Hebrew, according to Reland, means (בֵּית אֵיזְרָא) "house of pouring forth" (see Sir C. Wilson's note in "Bordeaux Pilgrim," P. P. T. edition, p. 45; and compare Ashdoth Pisgah, "the streams of P.") The only place near Jerusalem where a periodical "troubling of the waters" is now known to occur is the Virgin's Fountain, which Robinson regarded as Bethesda, and where the Jews still wash to cure disease. If this be the true site, the *Probatike*, or "Sheep place," would be a name referring to the collection of flocks for watering at this spring.

C. R. CONDER.

## RECENT DISCOVERIES AT CÆSAREA, UMM EL JEMAL, AND HAIFA.

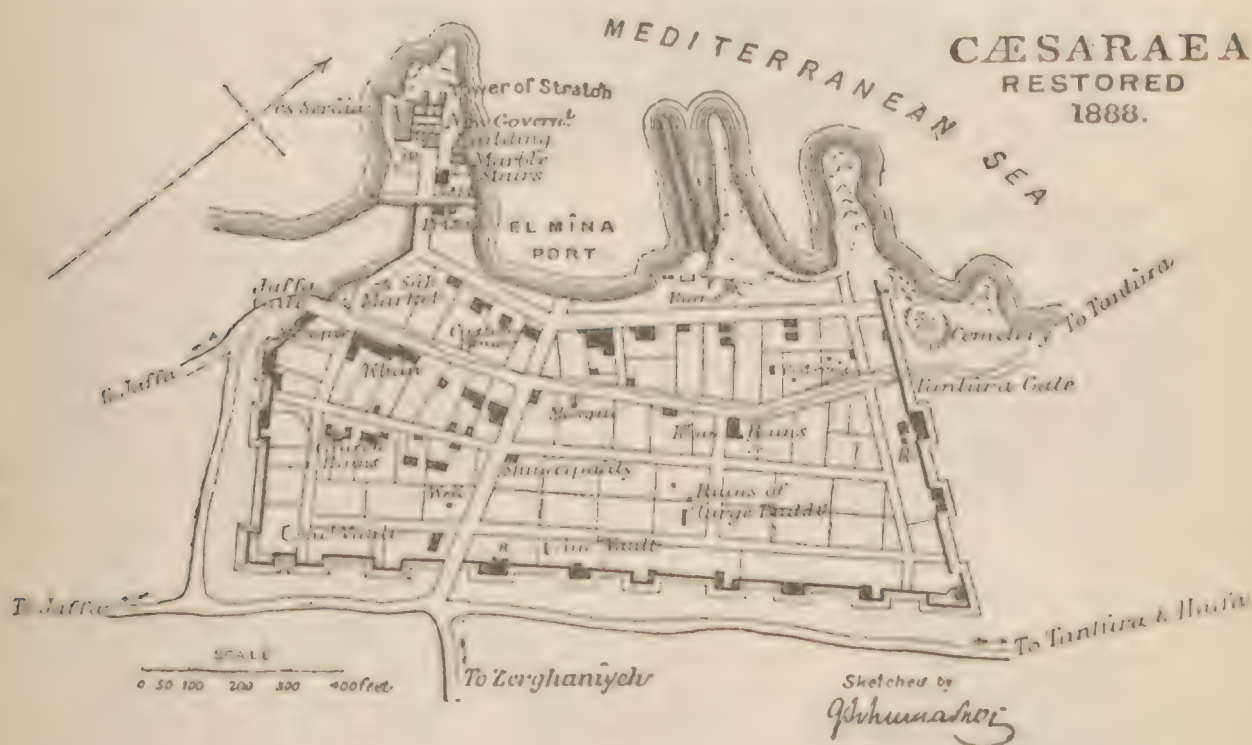
### I.

*Cæsarea*.—The ancient site of Cæsaræa, as already mentioned in former *Statements*, has been restored by immigrants from Bosnia, who, after the Austrian occupation, fled to the Ottoman Empire and found a refuge at Cæsaræa, where extensive parcels of land were granted to them by the Sultan. This place now contains forty-five families of Bosniaks, who erected solid dwellings with tile roofs, which renders the place quite an European aspect, entirely different to the poor huts of their fellahin neighbours, but their roads remain in a primitive state; no general plan was observed, and frequently disputes arose amongst themselves as to the lots they occupied within the city wall, still existing from the Middle Ages. In consequence thereof, the Government ordered its engineer to lay out the place in equal lots, not exceeding one-third of an acre each, and to construct roads, reserve a market place, a lot for a custom-house and a municipality. The annexed sketch will illustrate the plan of restored Cæsaræa, dividing the plain into seventy-five lots, forty-five of which, as before said, are already occupied, the remainder being in reserve for future Bosnian immigrants.

On the western part of the ancient site a narrow peninsula projects into the Mediterranean, on which the ancient tower of *Straton* was erected. According to Sepp ("Jerusalem und das heilige Land," vol. ii,

p. 573), and Reland, p. 670, a certain Straton of Greece first founded the city, who evidently was a Syrian general, and the fact that the "day on which the kings from the dynasty of the Chasmonians (Chasmonäer) commenced to govern was called the day of conquest of the tower of Straton" illustrates its importance.

Dr. Sepp further states that in the interior of the tower a "tabula Domini," a table where Christ ate with His disciples (Olorich, 1330, c. 55), was shown. Strabo (xvi, 2) knows the place by the name of the "tower of Straton with a port," and Josephus (Wars, chap. xxi, 5) mentions its fall into decay, and its re-erection by Herod the Great, as well as the foundation of the beautiful city of Cæsaræa. This tower of Straton is no more; the high tower ruin, characterising Cæsaræa in modern times from a considerable distance as such, has been pulled down, and a modest Government building, the seat of a Moudir, replaces it partially. Many



okes of powder were used to destroy this remarkable monument, with its walls up to 12 feet thick, but its vaults remained in the first storey and may wait a generation more until they are opened; as much as I could make out, these vaults were plastered and must have been used as water reservoirs; the tower, rising to about 60 feet above the sea, was in want of sweet water.

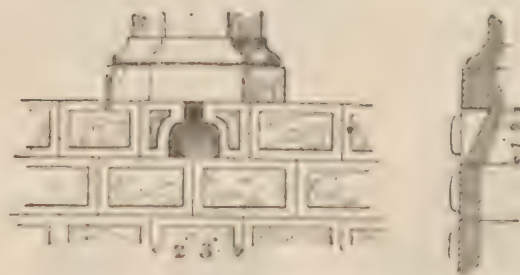
Amongst the *débris* of the floor of the first storey the octagonal pedestals of former pillars were brought to daylight; the pillars had a diameter of 5 feet 3 inches, were yet in all 3 feet 7 inches high, and showed the simple cornice as sketched. They were built of sandstone similar to all the other buildings.

The large building stones of the lower part of the tower are bossed,

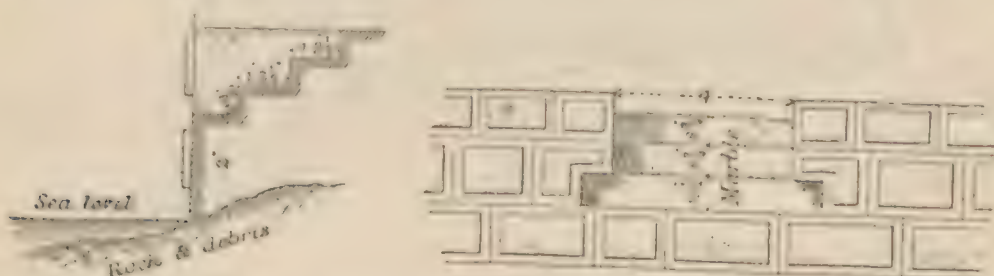


Vault Pillar.

and below the pillar above given, on the eastern front, arranged as sketched.



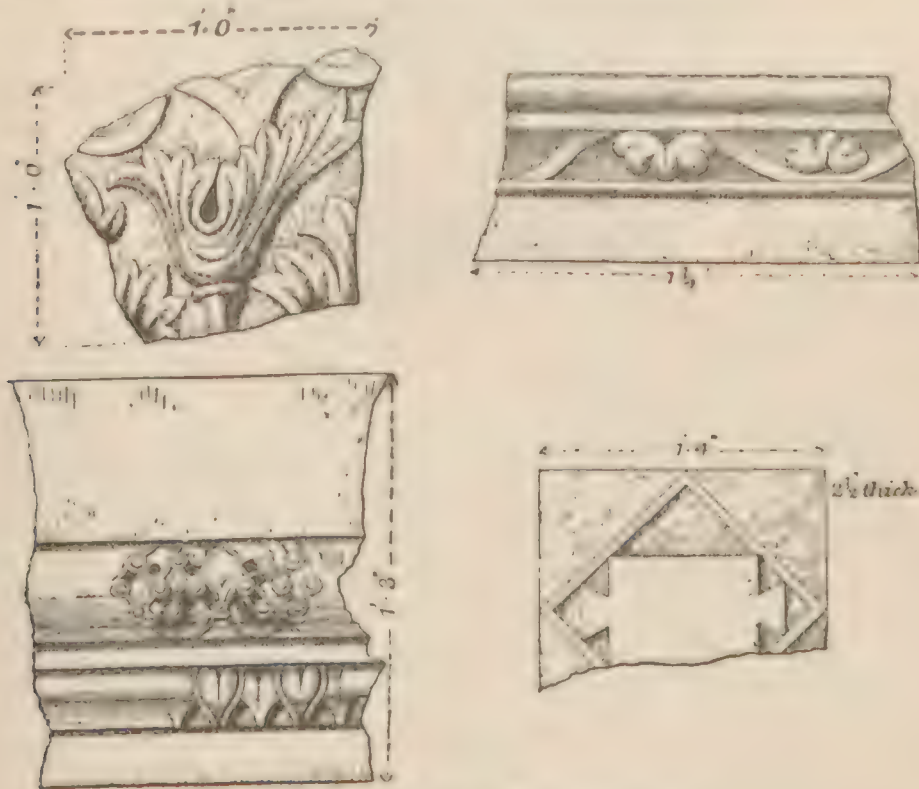
The floor of the tower is similar to the Arab cementing, "Barbarika," frequently used in this country for floors and roofs; a layer of good mortar,  $1\frac{1}{2}$ -inch thick, in which small fragments of flint and other hard stones, pieces of brick and tile, are laid, and the whole mass stamped until it hardens. On the north of the tower a stair was opened which evidently led to the small northern harbour; its steps are made of good white marble, 4 feet wide, and each  $9\frac{1}{4}$  inches to  $10\frac{1}{2}$  inches high, surrounded by bossed blocks.



The ancient Christian Basilica, in the south-east corner of the Middle-Age city wall, is entirely laid in ruins, and the apses are overbuilt by a Bosniak dwelling-house, while a new mosque is erected a little to the west of it; all I could save were a couple of fine Corinthian marble capitals and fragments of the vaults. The Bosniak houses partly occupy the counter-forts of the city wall. Near the southern gate a small vault, 5 feet wide, carefully built, was opened, but immediately filled up with straw, and another, with thirty steps leading into the corridor surrounding the wall on the outside, near the church mentioned; every discovery is carefully hidden by the Bosniaks, who, hostile as they are, fear nothing more than

the penetration of foreign elements ; therefore no stranger is welcomed there, and, although they recently were obliged to erect a "Menzül" or fellahin inn for travellers or guests, no visitor will remain longer than absolutely necessary, he finding the streets desolate, and no sympathetic friendly face to answer to his wants.

After passing through the gate leading to Zerghaniyeh, I arrived at the depression marking the Roman hippodrome. I here and there found recent excavations, and the field covered with fragments of marble and building stones—of the latter, thousands and thousands being constantly exported to Jaffa. Of the fine marble ornaments brought to daylight, I here add a few sketches.



Marble Ornaments from Caesarea.

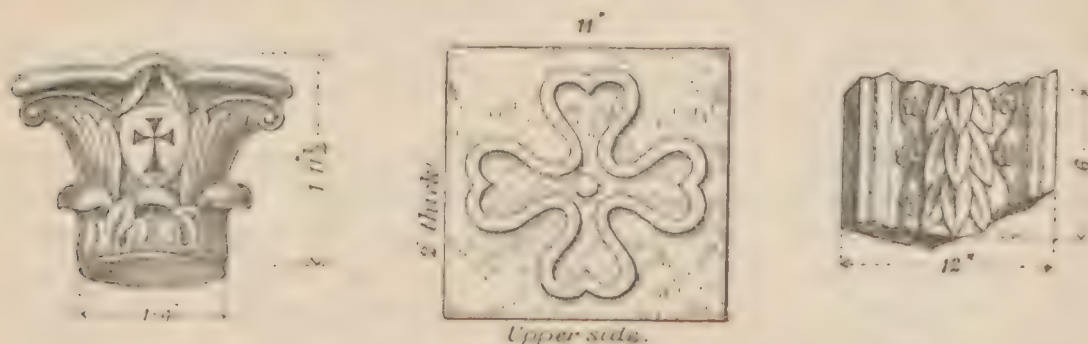
Besides a number of Christian emblems, crosses, laurels, &c., I also found a fine small marble capital 1 foot 11½ inches high, 1 foot 4 inches



Marble Ornament and Greek Inscription from Caesarea.

in diameter, which shows a carefully-hewn cross on a sort of scutcheon,

and on a planted field next to the Hippodrome a Greek inscription on a



Marble Ornaments from Caesarea.

marble piece. The Bosnian immigration is still continuing, although on a very small scale.

*Umm el Jemâl.*—The Jewish colony on this ancient site in the neighbourhood of Zimmârîn will soon be inaugurated; seven buildings are ready for habitation. Of ancient remains very little was found. Large hewn building stones, 4 feet below the surface of the earth, and foundation walls, parts of sandstone columns 2½ feet in diameter, four large cisterns, a small press, and some graves were found; the press is but 3 feet long, and consists of the Nâri-stone. The graves were about 3 feet below the surface, were 5 to 6½ feet long, surrounded by rough stones and covered by limestone plates, and contained some human bones. There was no sign of any carving on the slabs. Just above these graves, on the surface of the earth, there are also signs of an old cemetery of Bedawin origin, as stated by the fellahin of the district, and also signs of the wely of a Muhammedan saint under an old oak tree.

*Haifa.*—In the interior of the present city, near where the southern part of the city wall formerly stood, an old house, said to have been built before the regular settlement of the place commenced, was pulled down, and in the foundations of the new one the masons struck an upright standing granite column with a marble capital and some foundation walls. I tried to convince the proprietor to follow up the subterranean walls, but in this did not succeed. Nevertheless, I brought the capital to daylight, and annex its photograph, from which will be seen that it is of Christian origin, it bearing a cross in the upper part of each of the four sides. The diameter of the column was 1 foot 1 inch; the height of the capital 1 foot 3½ inches. The sculpture is not very fine, but distinct, and resembles the works of Crusade churches.

This column head is actually the first antiquity found within the limits of the present city of Haifa, and I feel convinced that it belonged to a crusading monument. Röhrich (*Zeitschrift Deutsch. Paläst. Verein*, Bd. x, 4, pp. 203, 207, 216, 227, 310 ff.), in his highly valuable account on *“Studien zur mittelalterlichen Geogr. u. Topographie Syriens,”* states that, among the properties held by the Crusaders in the 12th and 13th centuries, a house in Cayfas, on this side of the river,

next to the gate which leads to Accon, belonged to the Abbey of Galilee, and on p. 310 he states the existence of a church, "ecclesia S. Mariæ." On pp. 207 and 208 he says that the Church of the Holy Sepulchre had property between Chayfa and Palmarea ("in villa deserta



Marble Capital found at Haifa, from a Photograph.

inter Cayfam et Palmaream sita," etc.). Palmarea must have been built on the actual place where the present city of Haifa stands, while the old site of Cayfa was at Hêfa el 'Atika, on the Râs el Krûm; and the name, the Palm City, owes its origin to the existence of a fine palm grove east of Haifa, near the Kishon river, where still hundreds of palm trees are cultivated, and where here and there cisterns and ruins are found. Also close to the so-called Gate of 'Acca (Buâbet 'Acca) a rock-cut Birket with water channels, and a destroyed tomb, carefully pierced into the solid sandstone rock, were laid open at the construction of a road from said city gate towards 'Acca.

Besides these facts, which already seem sufficient to prove that modern Haifa is analogous to Palmarea, it must be stated that, according to reports from old inhabitants, Haifa (or Hêfa) was built on ground with scattered ruins by Daher el Omar, who destroyed ancient Haifa because that position was too much exposed to the invasions of Bedawîn and the renowned highwaymen of the neighbouring village of et-Tîreh, and built a wall and castle more towards 'Acca, from where he could attend easier to the inhabitants, respectively send them protection, and obliged the old Hâiotes to settle the new place within the wall he built, which settlement was first called el 'Amâra, until the old signification, Hêfa, again became familiar. By old fellahîn Sheikhs now and then 'Amâra is yet named for Hêfa, and this name sounds similar to Palmarea. Briefly, there is no site of an ancient place between Hêfa el 'Atika and the Kishon on this side of the river except the building ground of modern Hêfa, which must therefore represent Palmarea.



## NOTE.

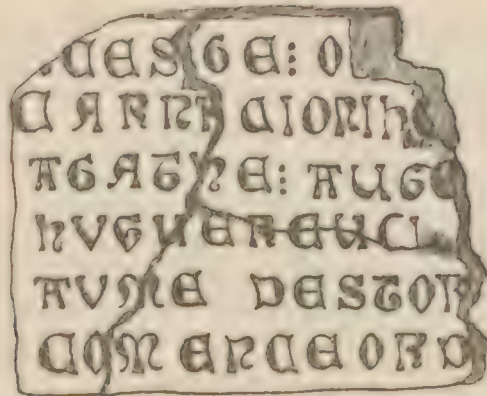
On the last page of the "Zeitschrift D. P. V.," Vol. x, Heft 4, at the end of Röhrich's interesting account I above mentioned, I find a remark by Herr Dr. Wetzstein that Mejd el Kerûm, mentioned in the Name lists of the Palestine Exploration Fund Map, Sh. III, is wrong, and should be called Merj (Merdsch) el Kerûm. As this place is often visited by me, I convinced myself of its true spelling and pronunciation, and can state that the name Mejd el Kerûm, *مجد الكروم*, the glory of vineyards (plantations, gardens), as called in the Name lists, is the right one, and could, besides this, find no objection to it being a good Arabic word. Both mejd and merdsch are often used in local names, and Mejd el Kerûm has every right to bear this distinguishing name, for its very extensive olive groves produce the finest olive oil found in the surrounding country.

G. SCHUMACHER.

HAIFA, May 7th, 1888.

## II.

'Acca.—Among the *débris* of a house within the present fortification wall at Acca the following inscription was found engraved on a broken marble slab:—



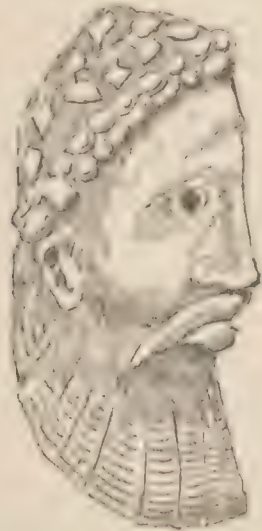
The characters of the above are the so-called (modern) Gothic letters used between the 13th and 16th century, especially by monks. They closely resemble the characters of the inscription on Philip D'Aubigné's tomb at Jerusalem (*Quarterly Statement*, April, 1887, p. 76), and may have been placed on the tomb of a certain "AGATHE," which name is contained in the inscription.

*Saida* (Sidon).—The Imperial Director of the Museum at Constantinople, H. E. Hamdy Bey, has resumed excavations at Saida, at a place near where the famous sarcophagi were found. He daily employs from fifty to sixty native workmen, but has had no other result yet than to find a necropolis containing some sarcophagi, which had been ransacked before, and were entirely empty.

*Beisân*.—Natives brought to me last week an interesting mask of a human head, made of pottery, which they found among the ruins of Beisân. I here add a photograph of same. The ears and eyes contain

small holes. The Persian beard is regularly curled—the hair twisted round the forehead in the shape of a garland of pearls; the upper part of the head, the crown, contains ornaments of vine leaves, very primitively made:—

Side view.



Near 'Abillin more tombs, cut into the soft limestone rock of the vicinity, were lately found. Most of them contained sarcophagi made of pottery. (See description of such, by L. Oliphant, Esq., *Quarterly Statement*, April, 1886, p. 80.) From one of these tombs I purchased a small earthenware lachrymatory (at least, natives pretended that they found it there). The antiquity contains on both broad sides the same figure, holding in its spread arms an animal; and to the right and left of the human head a cross is placed. The whole picture seems, as both sides are exactly alike, to have been stamped into the soft clay. The enclosed drawing shows its natural size and shape.

G. SCHUMACHER.

HAIFA, *May 16th*, 1888.

#### ON THE TRANSFERENCE OF THE ARAB NAMES OF SOME OF THE GATES OF THE HARAM ASH SHERIF BETWEEN THE ELEVENTH AND FIFTEENTH CENTURIES.

IN the note on the Gates of the Haram which I contributed to Mr. Guy le Strange's translation of *Mukaddasi* I was misled by the statements of Mujir ad-Din, and by modern tradition, which follows that author. A comparison of the descriptions of *Mukaddasi* (985 A.D.) and *Nāsir-i-Khusrau* (1047 A.D.) with each other, and with the description of *Mujir ad-Din* (1496 A.D.) and existing remains, enables me to correct in great measure the errors in my former note; to identify many of the gates with some degree of certainty; and to show that a change took place in the Arab nomenclature of the gates between the 11th and 15th centuries, possibly when Jerusalem was captured by *Salah-ed-Din*.

Nâsir describes (p. 41) the Bâb an Nabî (Gate of the Prophet) beneath the Mosque al-Aksa in such terms as to leave no doubt of its identification with the Double Gateway and the passage leading upwards from it, beneath the Mosque, to the Haram area. He also mentions (p. 43) another gate, Bâb al Hittah (Gate of Remission), as being excavated in the ground; and the only known gate of this character in the Haram is the closed Gate of Muhammad, or of the Prophet, beneath the Bâb al Maghâribe. If now we turn to Mukaddasi's list of the gates, we find that he commences with Bâb al Hittah; that his second gate is the "two gates of the Prophet;" and that he ends with the Bâb Dâûd, which is without dispute the Bâb as Silsilah of the present day. The inference I draw from this is that Mukaddasi named the gates in order, commencing with the Bâb al Hittah and ending with the Bâb Dâûd, and not, as I supposed in my former note, at hap-hazard.

In attempting to identify the gates with those which now exist, it is necessary to bear in mind that the Haram area, with its buildings and the approaches to it, have been much altered at various periods, as, for instance, during the Latin Kingdom, after the recapture of the city by the Saracens, and when the walls were rebuilt by Sulaiman in the 16th century.

Following Mukaddasi's list, we have:—

1. Bâb al Hittah (Gate of Remission). The Bâb al Hittah of Nâsir, which was excavated in the ground. This is the present closed gate, Bâb al Borak, or Bâb an Nabî Muhammad, beneath the modern Bâb al Maghâribe. It is called Bâb an Nabî by Mujir ad-Dîn, who places the Bâb al Hittah in the north wall of the Haram.

2. The "two gates of the Prophet" (Mukaddasi). The "Gate of the Prophet" in the south wall, and beneath the Mosque al-Aksa of Nâsir. The present Double Gate, the Arab name of which is "the Gate of the Old Aksa," as given by Mujir ad-Dîn.

3. The "gates of the Mihrâb Maryam" (Muk.). These gates must have been close to the Mihrâb Maryam (p. 35), in the south-east corner of the Haram, from which they take their name. They apparently correspond to the Bâb al 'Ain<sup>1</sup> of Nâsir (p. 43), and are now represented either by the closed "Single Gate" in the south wall or by the "Triple Gate."

4. The "two gates Ar Rahmah" (Muk.). The Bâb ar Rahmah and Bâb at Taubah of Nâsir, so called by Mujir ad-Dîn and by Moslems at the present day. The double gateway known as the Golden Gate.

5. The "gate of the Birkat Bani Israîl" (Muk.). The eastern gate in the north wall is called by Nâsir the Bâb al Abwâb (Gate of Gates). It is now called, as in Mujir ad-Dîn, the Bâb al Asbât (Gate of the Tribes), and opens to the road over the dam at the east end of the Birkat Israîl.

<sup>1</sup> The Bâb al 'Ain probably derived its name from the Virgin's Fountain, to which the road passing through it led; the Mihrâb Maryam is a reminiscence of the Mary Church of Justinian, built in this part of the Haram; and the Virgin's Fountain possibly owes its modern name to the same source.

6. The "Gate of Al Asbât" (of the Tribes) (Muk.). It corresponds to the Bâb al Asbât of Nâsir (p. 32), which was in the north wall to the west of the "Gate of Gates." It is now called Bâb al Hittah, and was known by the same name to Mujîr ad-Dîn, who gives with reference to it the legend applied by Nâsir to Gate No. 1.

7. "The Hâshimite Gates" (Muk.). These appear to be the gates leading to two cloisters (daryûzah) belonging to the Sufis, said by Nâsir (page 32) to have been in the north wall to the west of the Bâb al Asbât. It is, apparently, the modern Bâb 'Atm, which is called by Mujîr ad-Dîn Bâb al Dewatar, from a school of the same name, and said by him to have been the gate by which Omar entered on the day of conquest.

8. The "Gate of Al Walid" (Muk.) is possibly the Bâb al Ghawânimah in the north-west corner of the Haram area; it is given the same name by Mujîr ad-Dîn, who says that it was formerly called the "Gate of Abraham."

9. The "Gate of Ibrahîm" (Muk.) is perhaps the same as the Bâb as Sakar, "Gate of Hell," which is the only gate that Nâsir mentions in the west wall: it lay to the north of the Bâb Dâûd (page 31). It is apparently the modern "Bâb an Nâthir," which, according to Mujîr ad-Dîn, was formerly called the "Gate of Michael," and was an ancient gateway. The street "Akabat at Takiyeh," which runs westward from the Bâb an Nâthir, is supposed to follow the line of an ancient street, which supports the view that this gateway is on the site of a much older one.

10. The "Gate of Umm Khâlid" (Muk.). Either the modern Bâb al Hadîd or the Bâb al Kattanîn, which, according to Mujîr ad-Dîn, was in his time, as it is now, near the Gate of the Bath.

11. The "Gate Dâûd" (Muk.) is the same as the Bâb Dâûd of Nâsir. It is now the Bâb as Silsilah (Gate of the Chain), and the adjoining gate Bâb as Salâm (Gate of Peace) is the Bâb as Sakînah of Nâsir (page 43). Mujîr ad-Dîn mentions this double gate under the names Bâb as Sakînah and Bâb as Silsilah, and says that the latter was formerly called the Bâb Dâûd.

One gate mentioned by Mujîr ad-Dîn, the "Gate of Borak," appears to have been completely destroyed when the walls were rebuilt by Sultan Sulaiman in the sixteenth century. He says that the East Gate of the Dome of the Rock, called the "Gate of Isrâfil," led to the steps of Borak, which were opposite the "Dome of the Chain;" and that opposite the steps was the "Gate of Borak," so called because the Prophet entered by it on his night journey, and named the "Gate of Funerals" because they went out by it. This is apparently the Gate of Jehoshaphat of the Crusaders, but it does not appear to have been in existence when Mukaddasi and Nâsir wrote their descriptions.

The following table shows concisely the proposed identifications:—

Mukaddasi. 985 A.D.	Nâsir-i-Khusrau. 1047 A.D.	Mujîr ad-Dîn. 1496 A.D.	Modern. 1888 A.D.
1. Bâb al Hittah..	Bâb al Hittah ..	Bâb an Nabî ..	Bâb an Nabî, below Bâbal Maghârîbe.
2. Bawâb an Nabî	Bâb an Nabî ..	Gate of the old Aksa.	Gate of the old Aksa. (Double Gate.)
3. Gates of the Mihrâb Maryam.	Bâb al 'Ain (?) .. (Gate of the spring)	..	Single Gate (?).
4. Gates ar Rahmah.	{ Bâb 'ar Rahmah { Bâb at Taubah..	Bâb ar Rahmah Bâb at Taubah..	Bâb ar Rahmah. Bâb at Taubah. (Golden Gate.)
5. Gate of the Birkat Bani Israîl.	Bâb al Abwâb ..	Bâb al Asbât ..	Bâb al Asbât.
6. Bâb al Asbât ..	Bâb al Asbât ..	Bâb al Hittah ..	Bâb al Hittah.
7. Hashimite Gates.	Gate to the Sufi's Cloisters..	Bâb al Dewatar..	Bâb 'Atm.
8. Gate of Al Walîd.	..	Bâb al Ghawânimah.	Bâbal Ghawanimah.
9. Gate of Ibrahîm	Bâb as Sakar (?)	Bâb an Nâthir ..	Bâb an Nathir.
10. Gate of Umm Khâlid.	..	Bâb al Hadîd or Bâb al Kattânîn.	Bâb al Hadîd or Bâb al Kattânîn.
11. Gate Dâûd ..	Bâb Dâûd .. Bâb as Sakînah ..	Bâb as Silsîlah .. Bâb as Sakînah..	Bâb as Silsîlah. Bâb as Salâm.

The page references are to Mr. Guy le Strange's translation of Nâsir-i-Khusrau, published by the Palestine Pilgrims' Text Society.

C. W. W.

### THE TEN TRIBES.

THAT Israel was carried into captivity the most sceptical will hardly deny in face of the historical tablet which relates how Sargon, in 722 B.C., took 27,280 prisoners from the city of Samaria, and how he supplied their place with foreign colonists.

The question is what became of these Israelite captives, and this is one which has been very variously answered. I do not here refer to the legend of Jeremiah visiting Ireland, and of the "Stone of Bethel" becoming the Stone of Seone, and the coronation stone now in Westminster Abbey, for, as Dean Stanley once observed, this stone is of some kind of sandstone not to be found in Palestine, and certainly not at Bethel, where all is hard limestone: and these mediæval legends no doubt grew up in England long after Christianity reached our shores, much as the Boer in South Africa yet believes that the Promised Land lies not far north of the Transvaal, which belief caused misery and death to

many families during the extraordinary exodus of the "Trek Boers" north of the Zambesi.

But the question what became of Israel, and what is to happen to Israel in the future, has exercised the minds of Jews, Samaritans, and Christians from the Christian era downwards, and has been very variously answered. The Samaritan solution was simple. Israel returned to Palestine about the time when Judah and Benjamin returned to Jerusalem under Ezra. A great gathering in the Haurân was followed by an advance under the guidance of Sanballat the Levite (or the Horonite) to the sacred mountain at Shechem, and of these returning exiles the modern Samaritans are the descendants. Unfortunately, the "Samaritan Book of Joshua," in which this story occurs, is a late mediæval book, full of strange legends, mostly of Persian origin.

In the early centuries of the Christian era there appears to have been great diversity of opinion among the Jews on this subject. In the Mishnah (Sanhed x, 3) we read—"the ten tribes will not return" in the days of Messiah, because it is written "and the Lord rooted them out of their land in anger and in wrath and in great indignation, and cast them into another land as this day" (Deut. xxix, 28). On the other hand, passages were understood by other Jewish writers (Philo and the author of the Apocalypse of Baruch) in a contrary sense—"I will gather the remnant of my flock" (Jer. xxiii, 3), "Israel shall dwell safely" (verse 5), "and I will save the house of Joseph, and I will bring them again" (Zech. x, 6). It was on these passages apparently that Rabbi Eliezer relied in controverting R. Akiba's opinion that Israel would not return to Palestine.

In the second book of Ezdras (xiii, 41-50) we learn that the Ten Tribes are in a country never before inhabited, and called Arzareth, beyond a river which is to be dried up when they return.

This is perhaps the earliest foundation of a legend which attracted great attention in the Middle Ages, and induced adventurous travellers to set out in quest of the ten tribes. Mr. William Simpson has called my attention to passages in the travels of Wolff which tend to show that the idea of the Ten Tribes in central Asia survived to the present century; and other travellers have pointed out that the Nestorians claim to be of Hebrew origin. We may first consider the legends and then the historical foundation on which they rest.

In the Korân we find a legend, no doubt partly of Jewish origin, which relates the journey of Moses in search of El Khudr ("the green one"), who answers to the Jewish figure of Elijah as an immortal and ever present spiritual power. In the region of the Greek and Persian seas (apparently the Black Sea and the Caspian) Moses found a people oppressed by Gog and Magog. El Khudr was the Minister of Dhu el Karnein, "he of the two horns," usually identified with Alexander the Great, who on his coins has rams' horns, and who had drunk of the fountain of life and become immortal. Here also was the place where the sun sets in a miry fountain. Moses built an iron wall between two

mountains to shut in Gog and Magog, and poured molten brass over it (Sura xviii, 59-99). It should be noted that the mention of Alexander the Great tends to show that this story may have been partly of Persian origin—legends of that hero being common in Persia; and a few centuries later (in Firdusi's *Shah-Nama*, about 1000 A.D.) we get the same story in Persia, where Gog and Magog are represented as demons and giants who devoured man and beast, and who were shut up inside a wall by Alexander the Great himself.

Sir John Maundeville, in the 14th century, connects Gog and Magog with the Ten Tribes (chap. xxvi), and says that they were shut up till the end of the world between two mountain ranges in Scythia.<sup>1</sup> The Emperor Frederic II says, in a letter to Henry III, that the Tartars were descendants of the Ten Tribes shut up by Alexander the Great in the Caspian Mountains. As time went on, however, and as a Christian kingdom became established in Armenia, the story seems to have migrated east, and the wall was transported to the Great Wall of China in Marco Polo's time (*see* Yule, *Marco Polo*, i, pp. 50, 250, 257, 259).

As regards the river of the land Arzareth, it would seem that the localisation of the legend points to Arzareth being Erzerum, and the river probably the Araxes; and it is remarkable that a Persian legend (mentioned by Du Perron) speaks of Zoroaster, when thirty years of age, as crossing dryshod with his followers over the river Araxes, coming from the mythical mountain Elburz, where he received the Zendavesta from Heaven. According to a mediæval Jewish legend the Ten Tribes dwelt beyond the river Sambation, or Sabbatical River. This, though identified with the Ganges (*Mid. Bereshith Rabba*, 2; *see* Neubauer's *Geog. Tal.*, pp. 33, 380), was originally the present Nahr es Sebta, in Northern Syria (*Pliny, Hist. Nat.* xxxi, 2; *Josephus, Wars.* vii, 7, 5), an intermittent torrent which I have noticed in "Heth and Moab." Josephus says it flows on the seventh day; Pliny, that it flows six days and rests on the Sabbath. Josephus was nearer the truth, for the rise of the stream is uncertain, and it runs only for a few hours. Thus the mystic river, like the wall of Gog and Magog, was never certainly identified.

Local traditions appear from an early date to have represented the inhabitants of Georgia and Kurdistan and of Bactria, east of the Caspian, as descendants of Israelite tribes.

Thus Benjamin of Tudela, who travelled in the twelfth century from Spain to inquire into the condition of the Jews in the East, speaks of four Israelite tribes in Bactria living under independent rulers. The Nestorian Christians who live in the Kurdish Mountains on the borders of Armenia,

<sup>1</sup> About 1244 Matthew, of Paris, says of the "Enclosure of the Caspian Mountains": "There dwell the Jews whom God shut in at the prayer of King Alexander, who shall come forth before the Day of Judgment, and shall make great slaughter of all kind of folk. They are shut in by mountains, high and great, and cannot come forth." He thus identifies them with Gog and Magog of the book of Ezekiel.

having been driven by Timur and the Mongols from Mesopotamia, are said to claim to be descendants of the tribe of Naphtali, and are closely connected with the Jews of that region. According to Dr. Wolff (*Travels*, vol. ii, published 1861), the inhabitants of Merv and Khiva were regarded by the Jews of that region as descendants of Hivites, Perizzites, and Jebusites,<sup>1</sup> who fled from Joshua to the Caspian and went yet farther north in little boats; and the Jews had, it appears, intermarried with Turkomans of Khiva, whom they regarded as Hivites.

Now, if, as I believe to be the case, the Canaanites were a Tartar people, the Bactrian Jews were not so far wrong. The story shows that a Jewish influence must have existed for some time in the Turkoman country, and we are consequently interested in tracing its history.

The corner of Asia with which we are concerned is one which on account of its mountainous character has always been the hiding place of oppressed nationalities, and the existence of a very mixed population in this region is generally admitted. Thus Armenian is an Aryan language full of Turanian words. The Medes of the time of Cyprus were a mixed Aryan and Turanian people. The Georgian language is inflexional, but many of its particles are apparently Turanian, and the term Alarodian, by which the Caucasian languages are described, serves mainly to show how little is known about them. In the Kurds we have descendants of the Parthians, and, till quite recent times, they preserved the Parthian horn bow; and, in addition to these mixed races, the Jews in the Byzantine age, and subsequently when Islam first conquered Persia and Mesopotamia, fled from alien oppressors of other faiths to the region north of the Caucasus, between the Crimea and the Caspian.

In this connection it is interesting to note that rude sculptures occur both in Turkestan and in Southern Russia, which have been supposed to be of Scythic origin. We may finally discover in these monuments akin to those of Asia Minor and Northern Syria; one of these statues, described

<sup>1</sup> In another passage he includes the Hittites. Now the Hittites were by no means a "peculiar people," they were only one out of numberless Tartar tribes, and it is remarkable that a great tribe existed west of Manchuria, called Khitai (bounded on the west by the Gobi desert, on the north by the Pohai Tartars, and on the south by China); their language approached the Mongol and the Tunguse. Here, rather than among the mixed populations of Georgia, we may seek the Hittite type. The history of the Khitai is traced back to 230 A.D. Their name is said to mean "tattooed," or "painted red"—a practice found among Etruscans, Romans, Guanchos, and Hottentots, who all painted themselves red in sign of rejoicing; but it may have other derivations. (See J. R. A. S. xiii, II.) Tch'ang Te, travelling in 1259 in Turkestan, west of Kuldja, was told that the Kitai formerly dwelt there. Plano Carpini, in 1245, found the "Black Khitai" east of the Aral Sea. Rubruquis, in 1253, says they used to dwell near Lake Balkash (*see* Schuyler's *Turkestan*, I, note 3). Thus the Khitai were believed to come from Turkestan itself, where languages closely akin to the ancient Melic and Akkadian are still spoken.



by the Chinese traveller Sui-Sun, near Lake Issyk-Kul, represents a man girt with a sword, and placing his left hand to his forehead (compare the Hittite figures for this attitude), and in the same vicinity, north-east of Kashgar, Colonel Tchaikofsky found a human face, with a long text in a character which he supposed to be Thibetan. Further information as to the supposed Scythian statues would be of interest.

No less than 700 Hebrew tombstones, with inscriptions dating from about the second to the tenth century, have been found in the Crimea. The sect of the Karaites, to which these Jewish emigrants belonged, was akin to that of the Sadducees, and their alphabet was the square Hebrew which originated in Aram. They appear to have begun to spread northwards in the Roman age, during which the Jews, already strong in Egypt and in Mesopotamia, were dispersing all over the Roman world, and had their cemeteries also at Naples, Rome, and elsewhere in Italy (*see* "Syriac Stone Lore," p. 228). The same kind of movement which drove the Karaites to the Caucasus may, without any great improbability, have driven some of the Israelite captives from Assyria at an earlier period to the same region;<sup>1</sup> but, on the other hand, the whole account may be of Jewish origin.

Carmoly, in his valuable notes on the Khozars, shows us how the Karaites came to be so numerous in this region. The Khozars, or Khazars, were a Turkish people who lived west of the Caspian, which was at one time called the Sea of the Khozars. They occupied the Crimea and the region of Daghestan, near Derbend. It is related by Moses of Khorene that they invaded Armenia about 178-198 A.D. In 449 they were under the power of the Hunns. In the 6th century they were sufficiently powerful to attack Persia, but Khosru Amurshivan is said to have shut them in by building the Caucasian wall, of which the ruins are said to exist in the passes of Daghestan, near Derbend.\* In 625 Heraclius made peace with the Khozar king near Tiflis. In 661 Rabiat el Bahli was sent by the Khalif to attack the Khozars, but they allied themselves with the Greeks and repulsed him. In the 10th century their power appears to have extended from the Sea of Asof to the Crimea. The Mongols subdued them in 1221, and found many Christians among them.

To this pagan kingdom the Jews fled from Christian persecution in the time of the Byzantine Emperors Basil I and Leon VI, and later on the Christians fled to the same region from the Moslems. It is related by Moses bar Nachman, and by others, that in 740 A.D. a certain Is-hak Sindjari converted the King of the Khozars to Judaism, and many of his subjects became Jews. This curious kingdom is described by Ibn Haukal in 921 A.D., and by Mas'udi in 943 A.D. In 958 the Minister of

<sup>1</sup> In 2 Kings xvii, 6, we read that Israel was taken to Halah, Habor, and "the cities of the Medes." Media lay just south of the Caspian.

<sup>2</sup> Such defensive walls were of early construction. Arrian (iii, xviii) says that Alexander found the Persian Straits blocked by a wall with towers south of Ecbatana (Hamadan) as he advanced into Media.

the Spanish Khalif, 'Abd er Rahman III, who was a certain Chasclai II n Is-hak Ibn Ezra Ibn Sprot, hearing of this Jewish kingdom in the Caucasus, wrote a letter (which Carmoly gives) to the Khozar King, which was answered. These letters were published by Is-hak Akrish in 1575. In 1175 the Jewish traveller Petachia, of Ratisbon, set forth to find the Ten Tribes, of whom the Khozars now claimed to be representatives, and, passing through Persia and Media, he found the tribe of Issachar in the mountains beyond—in the Khozar country.

According to Ibn Haukal, in the 10th century there were 6,000 Moslems among the Khozars. The king was a Jew, with 1,200 soldiers; and at the city of Asmid was another allied Jewish king.

Some Khozars were Turks, black-haired; some were very dark, like Indians, some lighter (perhaps Aryans); the latter, he says, sold their children—as the Georgians have always done. They practised the "happy despatch" (like the Chinese), and called their king, who was always a Jew, the Kha-Khan.

Mas'udi, twenty years later, says that all the Court of the Khozar kings consisted of Jews who had come from Moslem and Christian countries. There were pagans of different races among them, and some burned their dead and practised suttee—probably Aryans. They traded in the skins of black and red foxes.<sup>1</sup>

There is thus little difficulty in understanding the mediæval ideas about the Ten Tribes. The region in which they were supposed to dwell was the region where the Jewish Kingdom of the Khozars actually existed from 740 to 1220 A.D.—nearly five hundred years—together with the adjoining regions in Bactria, east of the Caspian, which were no doubt influenced by them. Hence the confusion with the Tartars, and with the biblical Gog, for it is generally admitted that Gog (*see* Ezekiel xxxviii, xxxix), connected with Tubal and Ashkenaz (*cf.* Gen. x, 2), represents a Caucasian people.

The legend of the wall originates either in the wall which Alexander stormed in Media or in the later wall of Chosroes, north of the Caucasus, which was built before the Koran and the Shahnamah were written. The story of the river is older, since it is mentioned in Ezdras—probably in the same region (Arzareth; perhaps the western region Arzah of the Persians, Bundahish xi, 4); but, as already mentioned, it is connected with a Persian legend. Those who in more recent time have sought the

<sup>1</sup> There was a great skin trade with the north in Crusading times, when *Fair*, the skin of the Siberian squirrel, was so highly esteemed. The *peltry* or "skins" of the Land of Darkness are mentioned by the mediæval geographers, and the trade with the unseen inhabitants of these Arctic regions is noticed by Ibn Batuta and Abu el Feda (*see* Col. Yule's "Marco Polo" ii, pp. 414, 415). From a recent paper in the "R. E. Journal" I gather that the Jewish early population in the Caucasus is not yet extinct. In Daghestan and the districts near it about 30,000 souls still reside, but as a decreasing population. Their most remarkable custom is the painting of the face (like Jezebel) by the women, who are said to paint broad bars of yellow and red across the face.

lost tribes in Bactria<sup>1</sup> have, it seems, forgotten the existence of this Jewish influence, lasting for five hundred years on the shores of the Caspian, and extending much further east, for there were Jews in China, as Ibn Batuta mentions—and even as early as the 2nd century A.D. A Jewish-Chinese text of 1511 speaks of a synagogue in Pien in 1164 A.D.

But, while the fact of the eastward spread of the Jews is thus historically traced, it is certainly curious that they regarded themselves as descendants of tribes other than Judah and Benjamin. They may have been preceded by Israelites of those tribes, but it is equally probable that the reason lies in their own knowledge of Bible history, which recorded the return of the two tribes under Ezra. Nor must it be forgotten that a descendant of Asher is mentioned in Jerusalem in the New Testament (Luke ii, 36).

C. R. C.

## THE HITTITE MONUMENTS.

SOUTHAMPTON, 23rd May, 1888.

THE series of articles in *Nature*, based on the lectures of Mr. Thomas Tyler (January, 1888), having now terminated, I would beg to be allowed to make a few remarks on his work. I have no desire to raise controversy, or to force my own views on any who may not agree with me, but, Mr. Tyler having seen fit to allude to my work, and to bring charges of inaccuracy against me, it is evident that I may be considered as bound to answer. Another reason for speaking lies in the fact that many of Mr. Tyler's comparisons are either identical with, or closely similar to, those which I have put for-

<sup>1</sup> In a very interesting paper, Sutej Pujahs (*J.R.A.S.* xvi, 1), Mr. Simpson quotes from Bellew's *Journal of a Political Mission to Afghanistan, 1837*, who again quotes from Afghan legendary histories an account of the *Tabut i Sakinah*, or "Ark of the Shekinah," among the Afghans, who call themselves *Beni Israil*. The Hebrew history may, as he suggests, have come into Afghanistan with the Moslems, but there is another possible origin. One of the authorities quoted is *Habb ben Mania*, "the Son of Manes." Now the *Bundahish* agrees with *Mas'udi* in making the Turko-Tartar tribes in Turkestan, and as far as China even, Manicheans, in the 10th century or earlier, and Manes included Jewish ideas in his great syncretic system.

The word *Tabut* is applied by Shi'ah Moslems (who have much in common with the Manicheans) to a model of Husein's tomb.

Arks were very commonly used in Asia by the Babylonians and Egyptians and Phoenicians, as well as by the Hebrews. The Canaanites had arks, according to a text translated in "*Records of the Past*," as early as 1600 B.C. The *Khitai* in Cathay, in the 10th century, had a consecrated tent used as a temple during their war expeditions.

As regards Manes, however, it should be noted that the legendary ancestor of the *Kirghiz* in Turkestan was the giant called *Manias*.

ward at different times between 1883 and 1887; and, although Mr. Tyler is clearly acquainted with my writings, he has not thought fit in these cases to acknowledge my priority. Not that I stand alone in this respect, because in some cases discoveries by Professor Sayce have in the same way appeared in these papers without note as to their origin.

I first began to study these monuments in 1880, and have devoted nine years of leisure time to the subject with the assistance of very well known scholars; and I may perhaps, therefore, be allowed to remark generally that Mr. Tyler's papers show only an imperfect knowledge of his subject. He claims to set forth "just principles," and to found his work on "very recent" discoveries. Yet, with exception of a seal from Tarsus, which, as he allows, advances our knowledge very slightly, he refers to nothing which has not been known for many years to students of the subject, while, as regards principles, I am at a loss to understand what these are, unless they be the Pythagorean and abstract meaning of one or two emblems—a speculation which Professor Sayce last year dismissed with a curt (and I fear I must say contemptuous) note in the Academy. Mr. Tyler has picked out a few emblems here and there in an arbitrary manner. He has not adopted the only methods which seem capable of giving scientific results, namely—1st, the comparison of all the combinations in which any emblem is known to occur; 2nd, the comparison of Altaic emblems with known phonetic and ideographic values in other systems; 3rd, the use of the *sounds* recoverable from Cypriote.

Before noticing details I would ask to be allowed to explain the principles on which I have attempted the decipherment, which are either not understood or else ignored by Mr. Tyler. It appeared to me that the emblems must be treated as a cypher is treated, by observing the relations which they bear to each other in as many cases as possible—a method by which Mr. Tyler might have avoided palpable errors. It further appeared to me that a knowledge of the ideographic (or picture) value of the emblems was attainable by comparison with the use of similar emblems in other systems—such as cuneiform Egyptian and Chinese—rather than by relying, as Mr. Tyler so often does, on conjectural values based on nothing but arbitrary suppositions.

Finally, in 1883, after consultation with the lamented Dr. Birch, with Dr. Isaac Taylor, and with Professor Sayce, I came to a conclusion which the first of these authorities suggested to my mind, but which was not then held by the other two, namely, that the Hittites were a Turanian tribe, and that their language was probably akin to the old Turanian speech of Chaldea and Media.

To Professor Sayce is due the discovery that in the Cypriote emblems we have the hieratic forms of the Hittite emblems. This suggestion seemed to me at first unproven in view of the eight comparisons in Dr. Taylor's "History of the Alphabet" (six of which are, I think, wrong), and of Professor Sayce's comparisons with the early and inaccurate copies of the Hittite texts. When, however, I became possessed of complete lists of these Cypriote characters it became clear to my mind that Professor

Sayce's principle was sound, and I have now proposed forty such comparisons.

From the Cypriote emblems *sounds* are derivable, which, as Dr. Taylor saw, might serve to fix the language of the texts. It does not appear to me that Professor Sayce made sufficient use of these sounds when he attempted to decipher the texts (*see* his proposed readings in Wright's "Empire of the Hittites"), and it was through these sounds, and through an analysis of the "cypher value," so to speak, of each emblem, that I arrived at the results published last year. No scholar had, as far as I know, before that date been able to show either the phonetic or the grammatical values of the emblems in such a manner as to connect them with an Asiatic tongue. The values assigned had always been as arbitrary as was the assumption that the texts are historical.

During the present year I have published (*Quarterly Statement*, April, 1888) the results of another year's study of the question, and have shown in a manner which has met with acceptance from many scholars that the proposed values agree, not merely with the sounds of the dead languages of Media and Akkad, but with those of the living Turko-Tartar and Ugric languages—a result further confirmed by comparative study of 30 personal and 200 geographical names from the Hittite country.

The present state of the question is this: Dr. Isaac Taylor has lately expressed his present belief that the Hittite chiefs were Turanians, and his opinion on my recent paper is most satisfactory to me.

Mr. T. G. Pinches and Mr. G. Bertin, who are probably the best Akkadian scholars in England, have told me that the important words *Ku* and *Ma* on the bilingual are (as I urged) Akkadian. Mr. Bertin, author of the "Grammar of Cuneiform Languages," just published by Trübner, states that he thinks my comparison with Akkadian represents the safest method of study, and Mr. Pinches believes that a people speaking some such tongue must have lived near Carchemish. Professor Sayce, while regarding the Vannic language (akin to Medic) as the best for comparison, is also, I believe, now in agreement as to the Mongolic type of the Kheta, and as to the agglutinative character of their language.

I might then afford to disregard the opinion of a writer who seems as yet imperfectly acquainted with the subject, were it not that he charges me with inaccuracy in a manner which I feel to be undeserved.

All that I claimed in 1887 was to have discovered the group to which the Hittite language belonged, and to have commenced the decipherment on principles not arbitrary or conjectural. The method which I adopted has obtained increasing favour with scholars, and I feel no doubt that the discovery of the language will in time lead to a complete decipherment.

As regards the proposed comparison of Hittite, Vannic, and Medic with the Georgian and other languages of the Caucasus, all that can at present be said is that these languages have been tried, and have not

served to give such results as are obtainable from the Ugro-Tartar Group.

I now proceed to substantiate the statements which I have made as to Mr. Tyler's papers, in detail. So far as he reproduces the work of Chabas, Brugsch, and Perrot, and the later publications of Dr. Sayce, which are available to the general public in Wright's "Empire of the Hittites," his work may be useful, but these are not new discoveries, since Chabas wrote his monograph in 1866, and Professor Sayce's chief discoveries date from 1876 and 1880. I am also in agreement with him in those cases where he apparently adopts suggestions of my own. As regards his original work, I think that it will tend rather to produce controversy and confusion than to contribute to the cause of science.

Mr. Tyler states that certain hypotheses ("and vagaries") repugnant to the scientific spirit have of late been advanced, yet he himself adopts, without question, two most improbable ideas: 1st. The existence of Hittites (as an empire or otherwise) throughout Asia Minor. 2nd. The Hittite origin of all monuments on which a curly-toed boot is represented. As regards the first, the Bible, the Egyptian monuments, and the cuneiform texts agree in representing the Hittites as an important tribe of Northern Syria. The monuments speak of no Hittites elsewhere, nor does Herodotus or any other ancient author. It is certain that there were tribes of kindred race and civilisation north, north-west, and north-east (and I believe also south-east) of the Hittites; but when Mr. Tyler adopts my view<sup>1</sup> as to the independence of these various tribes he might also set an example in discontinuing to use the unscientific term "Hittite" in describing the Altaic or Turanian hieroglyphs.

As regards the curly-toed shoe,<sup>2</sup> Mr. Tyler might have satisfied himself that the Egyptians wore it, for there are several pairs in the British Museum. The Etruscans and Armenians alike wore it, as did and do the Crusaders, the Turks, and the Arabs and Kurds. It is not unlike the Chinese and old Japanese shoe; and it is somewhat absurd to class ancient peoples by their boots, especially when the information relied on is so partial and misleading.

The pigtails of the Kheta were, I believe, first noticed by Dr. Birch. I called attention to them in 1883.<sup>3</sup> Mr. Tyler does not refer to the latest information (the casts by Mr. Flinders Petrie), and he should have known

<sup>1</sup> See "Heth and Moab," 1st edition, p. 422, 1883; "Syrian Stone Lore," 1886, p. 23; "Altaic Hieroglyphs," 1887, p. 8, &c.

<sup>2</sup> Dr. Sayce calls this a "snowshoe," and says it is adapted for walking on snow. It is true that it resembles a skate of old-fashioned form in having a curl in front, but it bears no resemblance to any snowshoe worn by northern peoples. These are always large flat surfaces for distributing weight. As I have attempted to walk on snow in the ordinary Turkish shoe, I may be allowed to say that it is less fitted for the purpose than an English boot. Sir C. W. Wilson put forward a much sounder comparison some time since with the boot now worn in Asia Minor.

<sup>3</sup> See "Heth and Moab," 1st edition, p. 22.

that Rossellini's drawings have been found not to be thoroughly reliable. He would then have avoided the error of reproducing these in Fig. 2. The comparison with the Manchu Tartars which follows represents the theory which I have steadily advocated now for five years. Some of his observations on the point are, however, of value. The pigtail is certainly not characteristic of female figures, as he states Professor Sayce to have asserted: what is represented in the case of females is probably a long plait of hair like that worn by the Etruscan women. The British Museum contains a magnificent example of these long braids in the terracotta figure of an Etruscan woman.

Mr. Tyler allows that the word *Sar* cannot be purely Semitic when it is suffixed. The remark is not new, but Mr. Tyler omits to point out that in Akkadian *Sar* for "prince" or "chief" has just this position (as I noted in 1886),<sup>1</sup> and that it is a very common Turanian word, whence the Russian *Tsar* is derived. In the next sentence he refers to *Bek* as Mongolian, but unfortunately forgets that the words he quotes are names not of persons, but of towns. I have recently shown<sup>2</sup> that the word occurs as meaning "fortress" or "shrine" in many Tartar and ancient Turanian dialects.

Mr. Tyler thinks that the figures at Boghaz Keni represent kings and Amazons. He does not say what nations used to stand erect on the backs of lions and of two-headed eagles. He omits the figures with wings which occur in this sculpture, and he does not refer to the well-known representations of Asiatic deities erect on various animals. As to the supposed "mural crowns," he reproduces an observation by Professor Sayce, but I confess that Perrot's original drawings, from which he gives a somewhat inaccurate sketch, do not indicate mural crowns, but only bonnets such as are still worn by Tartar women. The sticks in their hands are not curved, as he supposes, and certainly do not represent bows. As to the Amazons, even they did not ride two-headed eagles—Herodotus mentions them as Turanians in Scythia—and it is to Professor Sayce that a suggestion of their connection with the Hittites is due. I hope hereafter to demonstrate that they were Tartar queens.

The mandrake theory does not demand more than a passing notice. In none of the known systems of hieroglyphic writing does the mandrake appear as an emblem. The Hittite (or Altaic) emblem appears to mean "male deity."

As regards the bilingual, which Professor Sayce first recognised as such, Mr. Tyler's proposals are ingenious, but not likely to be accepted. In the first instance, his reading of the name of the country is clearly wrong. The characters, as Mr. Pinches and Professor Sayce have seen, read *Urme*, not *Zume*. The emblem bears no real resemblance to the cuneiform *Zu* at any period, but is clearly the cuneiform *Ur* or *Eri*, even in comparatively early forms.

The suggestion that these hieroglyphs represent a Semitic speech

<sup>1</sup> "Syrian Stone Lore," p. 16.

<sup>2</sup> Palestine Exploration Fund, *Quarterly Statement*, April, 1888, p. 82.

contradicts the opinion of all who have given much attention to the subject. Semitic writing, as known to us, is syllabic or alphabetic—as is natural for an inflexional language—and not ideographic, as is natural to non-inflexional speech. A word like *Sacer*, containing a strong guttural, would probably be represented by two syllables, and if the second emblem on the bilingual be compared with the earliest form of the emblem *dim*, used in Akkadian, it will be seen that this value is more probable than is the tri-syllable *Kutimme*. As to the cone, Mr. Tyler follows Professor Sayce in rendering it “king,” but regards the double cone as meaning “people.” This is purely arbitrary, since in no known hieroglyphic system does any parallel exist, whereas, if it mean “country,” which would upset Mr. Tyler’s reading, it may be compared with emblems for country and mountain in Egyptian, in cuneiform; and in ancient Chinese.

Mr. Tyler is, I think, wrong in regarding the fifth emblem as unique, since it resembles an emblem often found on other texts; and certainly it in no wise suggests an idiogram for country. As regards the sixth, he adopts a comparison which I suggested in 1887<sup>1</sup> for the first time, only he gives the Assyrian value instead of the Akkadian,<sup>2</sup> in which he is, I think, wrong, since the Akkadian is the older, and because a series of strokes represents the plural in other hieroglyphic systems. According to the values which I obtain from Cypriote sounds, the Hittite emblems (so called) read *Tark-dim-Ku-ma-erme*. *Ku* and *Uk* occur for “king” in Akkadian, according to many scholars, and recall the Chinese *Chu* (older *Ku*) and the Tartar *ok*, meaning “Lord.” *Me*, *Ma*, *Mu*, is a common word for “country” in Ugric speech. *Me*, for the plural, is known in the Medic, and, according to Professor Sayce, also in Akkadian.

Mr. Tyler is also unaware of the meaning of the word *Tarku*, or *Tarkon*. It is a common Tartar word for chief, and has been traced from Siberia as far as Italy, where Dr. Taylor has recognised it in the Etruscan *Tarquin*.<sup>3</sup>

As to the idea that some of the emblems on the boss are inverted, it may be noted that ancient scribes were not accustomed to write upside down as a rule.

Mr. Tyler regards the comparisons of Cypriote and so-called Hittite as “visionary.” I must leave him to settle this with Mr. Perrot, Professor Sayce, Dr. Taylor, Dr. Deecke, and the other well-known scholars who hold the opposite view. The resemblances are often so remarkable and exact in detail as to leave no doubt on the mind. It is natural to suppose that the Cypriote or Asianic script, belonging as it does to the same country in which the older Altaic hieroglyphs are found, bears to them the same hieratic relation that the later Egyptian writing does to the monumental hieroglyphics of Egypt, or that the cuneiform

<sup>1</sup> “Altaic Hieroglyphs,” Plate IV, Fig. 10.

<sup>2</sup> “Altaic Hieroglyphs,” p. 161, Plate II, Fig. 14, p. 48.

<sup>3</sup> See Palestine Exploration Fund, *Quarterly Statement*, April, 1888, p. 78.



bears to the archaic Akkadian ideograms. We have also transitional inscriptions found of late, which serve to connect the early and the later incised forms.

Mr. Tyler states that I have not given the Hittite emblems in my latest work "with such essential accuracy as is desirable," but he cannot substantiate this assertion. I have studied the original monuments and the casts, and have drawn the emblems from these. Mr. Tyler's rude sketches are often clearly from drawings and photographs, and I am prepared to point out the inaccuracies of these sketches, and of his reproduction of the Yuzghâd Seal, of which a good photographic reproduction was published in 1886.<sup>1</sup>

As regards the texts occurring on statues of the gods, I adhere to my previous statement. At Boghaz Keui some figures, not reproduced by Mr. Tyler, are winged. The others, standing on animals, have been recognised as deities by Professor Sayce, and any student of ancient symbolism will know that he is right. A text from Jerabis, not yet in England, occurs on a plaque presenting a winged female figure. One of the figures at Ibrez certainly represents a deity. The Babylonian bowl is generally admitted to have on it a votive text, and the question of religious connection is thus reduced to a few texts which present a very similar group of emblems to those found on the texts above noticed.

Of course the "analogy of (historic) Assyrian inscriptions" cannot show that other texts must be historic, for this is purely begging the question. There are innumerable ancient texts, Akkadian, Egyptian, Assyrian, Etruscan, and Greek, which are votive, not historic. The Akkadian magic texts, as I have before noticed, present a very close parallel to my proposed readings of the so-called Hittite texts. The great stone lion in the British Museum, which I compared with the Lion of Mersa (a comparison which Mr. Rylands afterwards adopted), bears an invocation to Istar; and I am unable to see that "heads of oxen and asses" have any necessary connection with war.

Mr. Tyler has not thought fit to explain my views or to state the language which I recognise on these monuments. He selects one of the most fragmentary and defective of the texts, and gives the impression that the gaps on the monument are gaps in my decipherment. Even then there is more that is consecutive than in his own arbitrary selection of portions of certain groups. If the order of the words as I place them were in accordance with English syntax, that would be a certain mark of ignorance on my part. Turanian syntax is entirely different from either Aryan, or Semitic, or Egyptian syntax. We have to deal with a language of suffixes, with a verb placed at the end of the sentence, with post-positions and affixes. It is because I am able to identify these in their proper grammatical position, and because I have recognised (as Professor Sayce admits) "packets" as in agglutinative speech, and small suffixes with larger strong roots (as he also admits), that I

<sup>1</sup> Proceedings Soc. Bib. Arch., November, 1886. Note by Mr. E. A. W. Budge.

feel safe in identifying the general structure of this new dialect of Turanian speech.

Mr. Tyler states that "the Hittite inscriptions are in the main ideographic or pictorial." That they are not purely pictorial is very easily proved. That they are ideographic is one of my chief contentions, and indeed I do not feel sure that I have not rather exaggerated than otherwise the exclusively ideographic value of some of the emblems.

As to the Yuzghâd Seal, I do not think any scholar will suppose it to represent the "successful chase of the stag," and Mr. Tyler's reproduction contains errors on which he bases assertions. The seal, like the Tarsus Seal, is one of a large class, possibly of Turanian origin, and probably used as amulets. The Babylonian sun deity and the bull-horned Ea occur on it, but it is as doubtful if any of the emblems have value as ideograms as in other cases. The supposed "trident" does not even in Mr. Tyler's sketch (and still less on the original) resemble a trident at all, but a tree. As regards the curious emblem (Fig. H.), Mr. Tyler adopts my suggestion that the crescent moon is intended,<sup>1</sup> but there is no reason why he should select the triangle only out of the several phonetic emblems which occur with it. The supposed "baby" on the Yuzghâd Seal is not a baby on the original, nor do monumental females hold unfortunate infants by the neck, but nurse them in their arms. I am not acquainted with ancient races who adored triangles, though the cone was a Phœnician sacred emblem.

Mr. Tyler's suggestion to read all the texts "hind before" will not meet with approval. All scholars are agreed that the Hittite emblems face to the beginning of the line (a comparison of H. 1, 2, 3, 5, and J. 1, is sufficient evidence), just as in Egyptian or in the early Akkadian cuneiform. It follows that all Mr. Tyler's attempts to read are vitiated by his error in reversing the texts, as well as by his arbitrary selection of a few emblems, which is contradicted by comparative study of the groups.

Mr. Tyler regards the emblem, which he incorrectly describes as a parallelogram and two squares (which is not the normal form), as "the sign for plurality." Further study will show him his error. The emblem is known in more than ninety cases, and is very frequently a prefix. In no Semitic tongue is the plural prefixed, nor is the plural emblem prefixed in any Asiatic system. It is true that Bantu languages have prefixed plural sounds, but Mr. Tyler will not find such a language in Western Asia. Clearly he is wrong about a very important emblem, and wrong because of insufficient comparative study. The Cypriote *Ne* so exactly compares with the emblem in question as to make it certain that the common demonstrative and personal pronoun of that sound, found in numberless Turanian dialects, ancient and modern, is to be recognised, and this identification, which I proposed last year,<sup>2</sup> has been admitted to be probable by various scholars, including Professor Sayce.

<sup>1</sup> "Altaic Hieroglyphs," p. 182.

<sup>2</sup> "Altaic Hieroglyphs," p. 39.

That the closed hand<sup>1</sup> represents "power" is also not a discovery of Mr. Tyler's, but a remark which I believe I was the first to make, and he cannot claim priority in fixing the value of the "foot" for going.<sup>2</sup> I might add a great deal in confirmation of the ideographic values which Mr. Tyler here gives—a year later than myself. The idea that the figure (Fig. K.), which commences several texts, represents "a servant," rather than a king, also suggests an observation which, I believe, was not made by any previous writer, but which I have somewhat lengthily elaborated, to the effect that this attitude signifies "supplication."<sup>3</sup>

The suggestion that the Babylonian bowl was carried to Babylon as a trophy I made in 1886,<sup>4</sup> and I am not aware that it is to be found in any book before I first made a note on the subject. As to the supposed "agricultural implements," I am familiar with the threshing sledge used in the East, and see no resemblance to the Hittite emblem, nor is Fig. N. at all like a plough, or like any ancient representation of a plough. If Mr. Tyler had compared the various recurrences of this emblem, he would not have selected this out. The figure above (M.) is like the oldest form of the cuneiform *Ri*, and like the Cypriote *Ri*. It occurs in the name of a deity on the bowl, and there was a well-known Akkadian deity called *Ri*.

As regards the Shaduf, the suggestion is due to Professor Sayce, as should have been acknowledged. The explanation of the final group of the Hamath stone No. 3 is, to my mind, most improbable. The emblems are really used phonetically, and the supposed ideographic value is based in part on a copy from a very imperfect cast. The very abstract and philosophical meaning attributed to the emblems is not supported by our knowledge of other hieroglyphic systems.

As regards the emblem which Mr. Tyler supposes to represent Ashitroth (and apparently he thinks that all gods had this name), no sound argument is given in support, and the group, Fig. Q., No. 2, is not correct. The identification of the sacred tree is due to Professor Sayce. The identification of the heads below, as representing "spiritual beings," agrees with a view which I proposed last year, only I regard them as demons and Mr. Tyler as gods.<sup>5</sup> The gods are not, however, so represented by ancient peoples, whereas similar heads representing demons are often found in Etruria and are known in Chaldea. The opposed attitude is also that in which demons are often represented, as I have long since remarked.<sup>6</sup> Horns are proper to demons in many ancient systems.

Mr. Tyler takes up Professor Sayce's discarded view that the Hittite emblem for deity really represents city. There is an argument in favour of its meaning deity which he overlooks. The very group which he

<sup>1</sup> "Altaic Hieroglyphs," pp. 52-192.

<sup>2</sup> "Altaic Hieroglyphs," p. 54.

<sup>3</sup> "Altaic Hieroglyphs," p. 53.

<sup>4</sup> "Syrian Stone Lore," p. 26.

<sup>5</sup> "Altaic Hieroglyphs," p. 206.

<sup>6</sup> "Altaic Hieroglyphs," p. 93.

sketches (Fig. R.) occurs on a seal, with a star (the common Akkadian emblem for deity), instead of the conventional eye.<sup>1</sup> As regards the central emblem, it is not always lozenge-shaped; and, as regards the eagle, Mr. Tyler adopts my view that it is the celebrated sun eagle, but does not acknowledge the loan.<sup>2</sup>

The remaining groups require no notice. They are read backwards, and separated from their context in an arbitrary fashion. The value *su su* is given to the emblem, which a careful comparative study would show Mr. Tyler to be the *Me* of the bilingual, and two ideographic values are borrowed from my system without acknowledgment. The remarks on Fig. U. are due to Mr. Tyler's having worked from a photograph. Had he carefully inspected the original text, he would have seen that the weathering is represented on the photograph in a misleading fashion.

The Tarsus Seal belongs to a large group. Mr. Tyler should have mentioned the Lydian and Cappadocian cylinders figured by Perrot, which are much more instructive, but in the same style, representing deities of Turanian or Semitic origin.

As regards the supposed triangle, it is, I think, a cup, like that often held by deities. It is unfortunate that in Fig. Y. a broken cuneiform emblem is reproduced lying on its side. There are numerous complete examples of this archaic form known, and in these a stroke, broken off in the specimen selected, exists, and shows that it is not a triangle, but perhaps, as Mr. Bertin thinks, a cup.

The comparison of the ankh with a Phœnician and a Hittite emblem is, I think, sound; I first proposed it in 1883, and have compared the Phœnician and Egyptian also in 1886.<sup>3</sup>

It would have been more to the purpose, had Mr. Tyler noted that the Cypriote value is *Er* or *Ra*, which as a Turanian word means "power."<sup>4</sup> The triangle has clearly no connection. The Indo-Scythian coin is also very different, and these coins are much too late to compare safely.

Mr. Tyler doubts the age of the texts. He forgets that in one case at least there is evidence that the text is older than 1340 B.C.<sup>5</sup>

It is no great pleasure to me to write this criticism; but before charging me with inaccuracy Mr. Tyler must look at home. He has not fairly represented my method or principles, and his proposals, as I have shown, repeat those which I have made ideographically in the majority of the emblems of which he treats. I have much yet to say on this important subject, but the above is a sufficient answer to Mr. Tyler's papers.

C. R. CONDER.

<sup>1</sup> "Altaic Hieroglyphs," p. 245.

<sup>2</sup> "Altaic Hieroglyphs," p. 82.

<sup>3</sup> "Syrian Stone Lore," p. 72.

<sup>4</sup> Palestine Exploration Fund, *Quarterly Statement*, April, 1888, p. 100.

<sup>5</sup> "Altaic Hieroglyphs," p. 156.

## EARLY RACIAL TYPES.

THE publication of the photographs from casts taken by Mr. Petrie in Egypt gives us very valuable and authentic material for the consideration of racial types as early as the 14th and 16th centuries B.C. ; but the study of these types will not be complete until these pictures are compared with the representations of race which occur in Asia Minor, Mesopotamia, Phœnicia, and Etruria.

The cuneiform texts appear only to distinguish two races,  $\times \times$   $\text{𐤀𐤃}$ , "race bright," and  $\times \times$   $\text{𐤁𐤃}$ , "race dark," as mentioned also in the story of Sargina. The Egyptians, on the other hand, distinguished four races : 1, white (Lybian) ; 2, brown (Asiatic) ; 3, red (Egyptian) ; 4, black (Negro), all of which are traceable as early as the 16th century B.C.

The Bible distinguishes three races : Japhet "the fair," including the people of the Caucasus and some tribes of Asia Minor ; Ham, whose name comes from a root meaning "hot," whence the Assyrian Khammu, "midday," or the "south ;" and Shem, including the peoples usually called Semitic, and apparently meaning "dusky."

On the monuments now copied there are five very distinct types : 1, white, blue-eyed, with light hair ; 2, the red Egyptian ; 3, the bearded Semitic people, reddish or yellow ; 4, the Negro ; 5, the hairless brown or orange race, with receding forehead and a big nose from straight to aquiline.

As regards complexion, there are several points to be considered. In some cases the colours have faded, so that we have green eyes and hair. In other cases figures are alternately red and yellow for pictorial effect. As regards the red, it is not certain that this represents natural skin colour. The Guanches, the Etruscans, the Romans, the Hottentots, and the Red Indians alike have had the custom in different ages of colouring themselves. The Zulus paint white, the Hottentots orange, the Guanches painted red, white, yellow, and green. The Red Indians also paint themselves many colours. Again, in Etruscan pictures the men are very red or dusky, but the women are white. The great terra-cotta group in the British Museum represents an Etruscan woman yellow, and the man with her is dark or sunburnt ; yet the type of face is exactly the same : on Etruscan vases and in Etruscan tombs the men are painted red and the women left white. The colours on the monuments are, therefore, not a safe guide for the student.

As regards the four Egyptian races, the following reflections occur to me after comparing the photographs with other authentic representations :—<sup>1</sup>

<sup>1</sup> The following are the types with which I am familiar in Syria. 1. The Aramean ; dark, red-brown, aquiline, heavy beard, as seen in the Fellahin. 2. The Arab ; dusky, aquiline, scanty hair and beard, and very much lighter build. 3. The Turkoman ; approaching the Turk, with Turanian round head

1. The light people with blue eyes may be an early Aryan type. The Kabyles probably offer the nearest approach—a long-headed white race, with blue eyes and light hair, on the south side of the Mediterranean. The Guanchos seem to have been much the same. The cheekbones are said by Mr. Wallachs to be prominent, the nose straight, the forehead somewhat receding. The Guanchos were a tall well-made people. If it be the case that one of these light people is an Asiatic, it seems probable that the early Aryans spread in Western Asia earlier than scholars are inclined to suppose, and there can be little doubt that they existed in the Caucasus some time before 500 B.C. How they reached Lybia is at present unknown; perhaps by sea from Greece, or perhaps through Syria.

2. As regards the Egyptians, it is to be observed that the early statues at Boulak, like the heads from a tomb of the 6th dynasty, represent a very different type from that of the time of Rameses II; the nose is straight, the features generally less marked, and there is no beard. But this might be due to increased care in drawing.

If the reader compares this earlier type<sup>1</sup> with the heads of the Cappadocian deities,<sup>2</sup> or with the round-headed beardless type found at Tell Loh, he cannot fail to be struck with the resemblance. The later aquiline type is that presented by the mummy of Thotmes III (which I saw in 1882) and of Rameses III. It resembles the Abyssinian finest

and projecting cheekbones. The Greek, the Jew, the Persian, the Copt, the Abyssinian, the Circassian, the Georgian, the Armenian, and the Negro may also be studied in Palestine. In South Africa I have studied the Bantu (Bechuana, Basuto, and Zulu), the Hottentot, and the Bushman. In Turkey I was much struck with the Mongolian appearance of the peasantry. In Egypt I found the Fellah to be quite different to the Syrian peasant, and hardly Semitic at all. The Copt, the pure Arab, the Berberi, and Nubian I have also observed in Egypt. The type of the Red Indians who visited England struck me as very different from what I had expected, the figures being so very thick-set and the cheekbones very broad. There is a certain affinity to the Aztec and the Red Indian in the Hittite and in some Etruscan types, which is very curious. Dr. Taylor, in 1872, classed some at least of the American languages in the Turanian family.

<sup>1</sup> The Cushite stock—if the Tell Loh pictures are correctly described—must have been darker than the Semitic, approaching black. The “race (or blood) dark” of the Akkadian is rendered *Adamatu* “red” in the Assyrian. The dark ruddy colour of the Palestine Fellahin is at once recalled, and this might be the complexion of the Egyptians—very different from the greyer colour of the pure Arab. The modern Egyptian Fellah, like the Copt, has probably much Turanian blood in his veins. The later Egyptian language approaches in structure more closely to Turanian syntax than does the earliest Egyptian dialect.

<sup>2</sup> Investigating the Carian words which have survived, I find them to be all apparently Turanian, and some Scythian words given by Herodotus seem to have the same origin. The Carians were akin to the Cappadocians and Hittites, who were also Turanian.

type, and the dressing of the hair (see the great wig in the British Museum) recalls that of the non-Arab tribes of the Soudan.

3. The Semitic type is very clearly marked by the aquiline features, the beard, and generally by the head-dress, resembling the modern Kufeyeh. The side curls, plaited and often very long, which occur on these photographs, were worn by the Phœnicians, and are still worn by the Bedouin.

4. Both the Rutennu and the Hittites present a Mongolian type, with brown or orange complexion, sometimes reddish. Generally, but not always, they are beardless. The hair appears to be dark, when coloured at all. The Rutennu, in some cases, are more Mongolian than the Kheta, whose noses are often aquiline. The receding forehead and chin and aquiline nose occur, however, among the modern Kirghiz. The general type is not unlike the extremely exaggerated Etruscan type, with a big long nose, high cheekbones, and very slanting eyes, with black hair and receding forehead. The pigtail of the Kheta is not known in Etruria. The heads on Hittite monuments (such as J., I and III) approach the Egyptian representation of some of the Kheta. The Kheta chiefs were perhaps not pure Mongols, but had Semitic blood in their veins; but the head of a modern Kirghiz is as like the Hittite type as it is possible to conceive. The Kirghiz are a mixed Turko-Mongolian race, speaking a Turkic language. The bearded big-nosed heads at Ibreez are illustrated by a bearded Kheta chief on these monuments. In Chaldea, also, we have bearded non-Semitic portraits,<sup>1</sup> and bearded figures occur also in Etruria.

The two races of the cuneiform documents were perhaps the Northern Aryo-Turanian and the Southern Egypto-Semitic. The new monuments appear to connect Kush with the Egyptians (as does the Bible). The division agrees with the present scientific view as to the relationship of Aryan and Turanian, Semitic and Egyptian languages, but the early home of the southern race is still doubtful.

<sup>1</sup> The Bible connects the Canaanites and the Philistines with the Egyptians and the Cushites; and the Hyksos, the Kheta, and the later Egyptian facial types are not far apart, but the Egyptian and Kheta languages are very distinct. Although race does not of necessity involve language, it seems to me that the distinction has of late been exaggerated. It must be to a somewhat late period that a change of language in any race is to be attributed, otherwise language would not develop at all. The approximation of Kheta and Egyptian types may be due to the infusion of Semitic blood in both. It seems that the division in Genesis x is geographical rather than ethnic, belonging to an age when it was already impossible to distinguish race very clearly, since the migrations of the various stocks had been going on for many centuries, and mixed breeds of all kinds already existed. There were, however, most Semites in the south-east or east, most Aryans in the north, while Ham ("the south") included the Turanian Canaanites and the Asiatic Egyptians. The Egyptian language shows how very early Turanians reached Egypt, importing 150 Turanian words into a distinct language which is nearer in structure to the Semitic. By 2000 B.C. also a large Semitic element had found its way to the Delta.

It may be regarded as fairly certain that the Turanians came from the region south of the Caucasus and perhaps from further east, and the Aryans perhaps divided off, and had their home in the valleys of the Volga, and the Don; the southern race perhaps belonged originally to the Mesopotamian valley. As to the European origin of the Aryans, the evidence is not strong, and the subject has not been worked out to its full bearings. Scholars have argued for a Semitic race in Chaldea preceding the Akkadians, and there are no river-valleys in Arabia to form their home. Either they reached Arabia from the Nile in Africa, or they spread south from the Euphrates, which appears most probable, since the true Egyptian type has been long since pronounced to be Caucasian, and is very different from the Negro, the Nubian, or even from the type of the people of Pun, which is nearer perhaps to the Bantu.

The identification of the names of some of the tribes represented at Karnak is tolerably certain, including Amorites, Hittites, the Shasu, or nomadic Arabs, the Derdeni, or Dardanians (a bearded people), the Rutenu, or Canaanites, and the inhabitants of Ascalon and Damascus. Others, such as the supposed Etruscans, Cilicians, Sardinians, and Teucrians, are, to say the least, doubtful. If the Pulistha be correctly identified as Philistines, it is interesting to note that their headdress is the same worn by the Takru, or supposed Teucrians. Their appearance is non-Semitic, and perhaps Turanian. This would seem to agree with Hitzig's theory that the Philistines were akin to the Pelasgi, or pre-Aryan race of Greece, and the Philistine names in the Bible often appear to be non-Semitic.

The peculiar helmet of the Shakalsha is found also on statues from Cyprus, and other Cyprian statues (called Phœnician) give head-dresses very like that of the Pulistha. Some of these statues are beardless, with slanting eyes.

In this connection it seems important to consider the evidence lately brought forward in support of the supposition that the Aryans were of Finnic extraction. The arguments are three:—1st. Comparison of the roots of Aryan and Finnic speech. 2nd. The fair complexion of the Aryans, supposed to indicate a northern origin. 3rd. The early existence of words in Aryan languages denoting a northern European fauna and flora. Neither of these arguments is, however, very strong. 1st. The roots in question are found also in Akkadian and in Tartar languages, as well as in Finnic and Aryan. 2nd. The fair race has preserved apparently its blue eyes and light hair, though dwelling for two or even four thousand years in North Africa. 3rd. The fauna and flora are not peculiar to Northern Europe, as has been supposed by those supporting this theory. This last point may be noticed in detail. The oak grows well in Palestine and Asia Minor. The beech is found all over the north of Asia, and the birch in Turkestan and Mongolia. Snow and ice are common in Palestine and Turkestan. The bear, the wolf, the stag (roe and fallow deer), the goose, the crane, the starling, the wasp, and the bug, all occur in Syria



and in Central Asia. The eel is very susceptible of cold, the oyster occurs in the Persian Gulf. Barley is common, wheat is scarce, in Palestine. The elk occurs in the Caucasus and in North China. The seal is found in the Caspian and in the Aral, and Lake Baikal. The salmon in Asia Minor and in the region of the Hindu Kush, as well as in Algiers. Thus the linguistic evidence on which the new theory has been based crumbles away when examined by the aid of such a work as Wallace's "Distribution of Animals," or Tristram's "Natural History of the Bible." It also appears that the horse must have been known to the early Aryans, and the home of the horse is certainly not in Finland, but in Central Asia.

The general result of such considerations seems to show how much caution is required in treating the question of the early populations of Western Asia.

C. R. C.

## NOTES ON THE PLATE.

### *Turko-Tartar types.*

- No. 1. From photograph of a Kirghiz Tartar in Schuyler's "Turkestan," vol. i, page 42.
- No. 2. Tartar boy of Tashkent, from same, vol. i, page 142.
- No. 3. Tartar elder, from same, vol. ii, page 28.
- No. 4. Samarkand Tartar, from same, vol. ii, page 107.

### *Canaanite.*

- No. 5. Hittite from Karnak monument, cast by Mr. Flinders Petrie (compare No. 1).
- No. 6. Rutennu, from the same.
- No. 7. Syrian, bearded, from the same (compare No. 3).
- No. 8. Syrian, from the same.

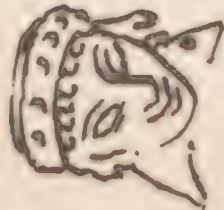
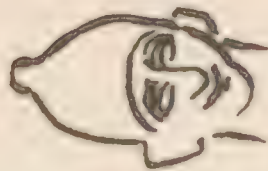
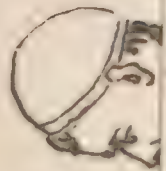
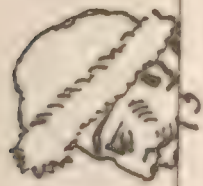
### *Asia Minor and Syria.*

- No. 9. From Hittite text, J., I (compare the cap with Nos. 2 and 3) : the pigtail is curled up.
- No. 10. Beardless God at Pterium. From Perrot (vol. iv, page 639, "Histoire de l'Art").
- No. 11. King from Ibreez, perhaps Semitic, but with a Hittite text (Sketch by Davis), same publication, page 725.
- No. 12. Rutennu, from cast by Mr. Flinders Petrie (compare with 2, 4, 9, 10).

### *Akkadian.*

- No. 13. Head of a statue from Tell Loh, from photograph in de Sarszee's "Découvertes en Chaldée;" found with Akkadian texts.

TURANIAN TYPES.



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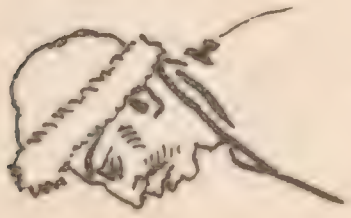
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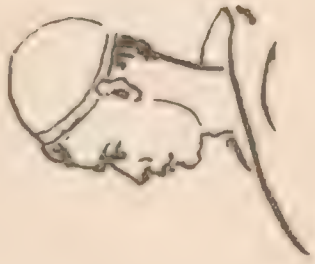
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TURANIAN TYPES.



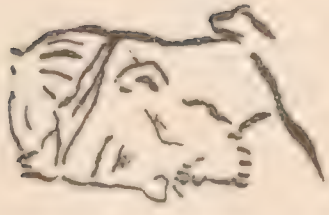
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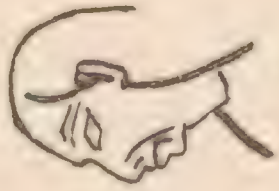
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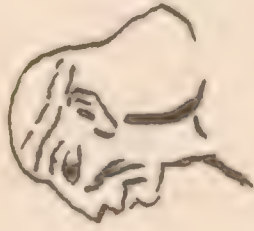
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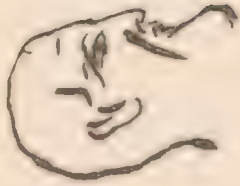
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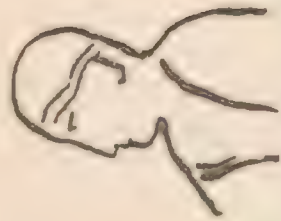
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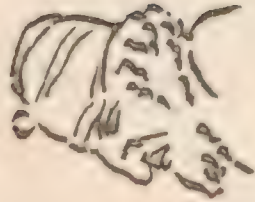
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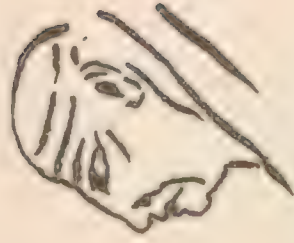
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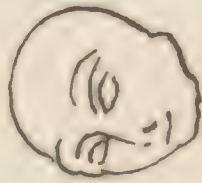
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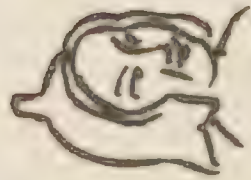
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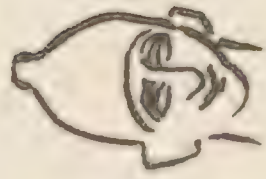
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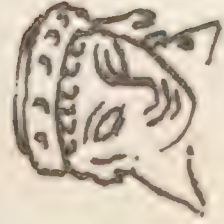
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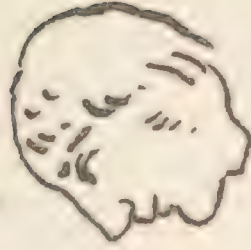
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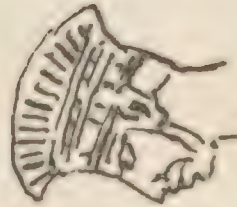
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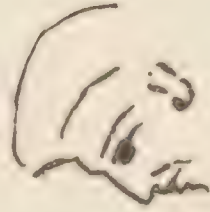
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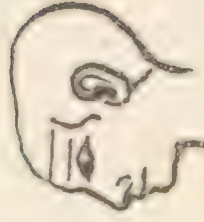
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- No. 14. Same source (compare the cap with No. 1).  
 No. 15. Bronze figure, same source, bearded, but with non-Semitic features (compare No. 3).  
 No. 16. Same source (compare Nos. 1 and 5).

*Western.*

- No. 17. Etruscan, after a sketch by Dr. Isaac Taylor.  
 No. 18. From Cyprus, supposed to be Phœnician (from Perrot's "Hist. de l'Art," vol. iii).  
 No. 19. From Cyprus (same source), perhaps female. This type with slanting eyes and long nose is also found on Etruscan monuments.  
 No. 20. Cyprian (same source).

*Southern.*

- No. 21. Pulestha (Philistine ?), from Karnak monument. Cast by Mr. Flinders Petrie.  
 No. 22. Takrui (Teucrian ?), same source, showing same head-dress.  
 No. 23. Ascalon, a male captive, from cast by Mr. Flinders Petrie.  
 No. 24. Early Egyptian type (same source).

There are many other similar heads in the various collections from Egypt, Cyprus, Asia Minor, Chaldea, and Etruria, giving the round-headed headless types, with broad cheekbones and eyes sometimes slanting as on this specimen plate.

## NOTES ON CALVARY.

Is a pamphlet published in 1886 at Jerusalem, and in a recent letter to the "Sunday School Times" in America, Dr. Selah Merrill intimates that, in advocating the site at Jeremiah's Grotto as Calvary, I am appropriating discoveries of Otto Thenius in 1849, and of Fisher Howe in 1871. I have never seen the works of either writer, and do not know what they may say as to Calvary. It is very probable that this hill suggested itself to many visitors as the true site; but what I was, I believe, the first to publish was not the *theory*, but the *tradition*, connecting the site with the Jewish place of execution. Dr. Merrill mentions this tradition without giving his authority, but he fails to point out that this was the chief reason for my fixing on the site. When I was in Jerusalem in 1874-75 the site of Calvary was regarded by residents as being a knoll west of that which I suppose to be the site. Dr. Chaplin, as I have said, called my attention to the Jewish tradition, and sent Jews to see me on the subject. Our enquiries then established the site to which they referred, and, as far as I know, this was never previously brought to public notice. From what he says, Dr. Merrill is apparently afraid lest this discovery should be attributed to himself, and the present note may serve to relieve his apprehensions.

C. R. C.

## THE CROCODILES IN THE NAHR EZ ZERKA.

THE only place in Palestine where—according to natives—crocodiles are found is the Zerka river, near Casarea. They are mentioned as coreodrils by Sir John Maundeville. The following passage from a tract of the 13th century is interesting, as perhaps founded on some fact which may account for the presence of crocodiles in this river. The salt pans mentioned are those at El Melât and elsewhere along this coast, as mentioned in the "Palestine Survey Memoirs":—

"From Chastel Pelerin (Athlit) one goes to Casarea. The city stands by the sea, where one finds on the right hand (*i.e.*, of the road) the salt pans of the Hospital of St. John, and then by the sea one finds Panperdu, a tower of St. Lazarus (*i.e.*, of the order so called). On the other side, to the left hand inland, is a church of Our Lady of the Marshes (*i.e.*, of the Zerka), and there come many folk in pilgrimage from Casarea and from Chastel Pelerin. In this marsh are many cocatrices—fierce beasts which were put there by a rich man of Casarea, and he had them fed, for he would have them devour his brother, because of a quarrel he had with him, and for this he had them brought from Egypt. And one day he brought his brother to bathe, secretly to slay him. And his brother was wiser than he, and made him go down first, and the beasts which he had fed so soon dragged him down that he might never be found, and the treason was known through those who had agreed to it, and thus was the traitor lost and his brother saved."—(See "Publications de la Société de l'Orient Latin, Série Géographique III," p. 191).

C. R. C.

## NEBI DHAHY.

IN the "Memoirs" (vol. ii, p. 132) I have given the legend of the dog who buried Neby Dhahy or Duheiyeh. This may be connected with Dahya el Kelbi (the dog-like Dahya), who was one of the early converts to Islam before the Battle of the Ditch.—(See Rodwell's "Koran," p. 409.)

C. R. C.

## THE "VIA MARIS."

I HAVE read with much interest Herr Schumacher's survey of "The Jaulan," and shall be much obliged to any reader of the *Quarterly Statement* who will explain the ground for his identification of the *Via Maris* of antiquity with the caravan road which bisects Upper Jaulan in the direction of Akka and Haifa, as described on page 65 of the English translation of his work.

The question is of some importance in connexion with the right interpretation of Isaiah ix, 1, and S. Matthew iv, 13 to 16. Commentators are



RONA B  
 ABOUT 50

*B*

	Mean
Mean.	Dry Bulb.
50.7	50.0
55.7	57.0
56.6	61.0
63.6	68.0
69.0	75.0
73.6	80.0
77.2	84.0
79.0	84.0
71.8	76.0
73.6	79.0
85.8	72.0
66.0	67.0
66.4	70.0
11	1



MONTHLY METEOROLOGICAL TABLE DEDUCED FROM OBSERVATIONS TAKEN AT SARONA BY J. DREHER IMMEDIATELY NORTH OF THE GREAT ORANGE GROVES OF JAFFA, SYRIA, 1½ MILE FROM THE SEA SHORE, ON SANDY SOIL, AND ABOUT 50 FEET ABOVE SEA-LEVEL. LATITUDE 32° 4' N., LONGITUDE 34° 47' E.

By JAMES GLAISHER, F.R.S.

Months, 1880.	Pressure of Atmosphere in Month. Corrected to 32° Fahrenheit.				Temperature of the Air in Month.								Mean Reading at 9 a.m.			Vapour, 9 a.m.			Degree of Humidity.	Weight of a Cubic Foot of Air.	Wind.								Mean Amount of Cloud.	Rain.	
	Highest.	Lowest.	Range.	Mean.	Highest.	Lowest.	Range.	Mean of all Highest.	Mean of all Lowest.	Mean daily Range.	Mean.	Dry Bulb.	Wet Bulb.	Dew Point.	Elastic Force of Vapour.	Weight in a Cubic Foot of Air.	Additional Weight required for Saturation.	Relative Proportion of								Calm, or nearly Calm.	Number of Days on which it fell.	Amount Collected.			
																		N.			N.E.	E.	S.E.	S.	S.W.					W.	N.W.
January .. ..	30·269	29·873	0·396	30·046	63·0	32·0	31·0	58·5	42·9	15·6	50·7	50·9	47·7	44·4	·293	3·3	0·9	79	545	0	4	4	9	9	2	0	0	3	5·8	17	ins. 5·92
February .. ..	30·155	29·635	0·520	29·942	78·0	32·0	46·0	65·5	45·8	19·7	55·7	57·0	51·4	46·3	·313	3·5	1·7	67	536	0	3	1	11	1	5	1	0	7	5·3	12	4·29
March .. ..	30·166	29·615	0·551	29·882	83·0	31·0	49·0	66·4	46·9	19·5	56·6	61·2	55·4	50·4	·366	4·1	2·0	68	531	1	5	1	4	3	2	6	2	7	6·0	7	2·28
April .. ..	30·051	29·489	0·562	29·814	94·0	41·0	53·0	75·2	52·0	23·2	63·6	68·4	59·7	52·9	·401	4·3	3·3	57	522	0	0	0	1	5	10	5	3	6	5·8	5	1·22
May.. ..	29·947	29·610	0·307	29·776	103·0	50·0	53·0	80·9	57·0	23·9	69·0	75·2	66·7	60·7	·530	5·6	3·8	60	514	0	3	1	0	0	7	8	7	5	2·7	1	0·12
June .. ..	29·953	29·609	0·344	29·741	91·0	55·0	36·0	83·8	63·5	20·3	73·6	80·3	72·6	67·3	·670	7·1	3·9	64	508	0	0	0	0	0	20	4	5	1	1·8	0	0·00
July.. ..	29·791	29·556	0·235	29·679	92·0	63·0	29·0	87·3	67·0	20·3	77·2	84·2	78·8	75·3	·875	9·3	3·2	74	502	0	0	0	0	0	22	6	2	1	2·4	0	0·00
August .. ..	29·827	29·584	0·243	29·716	91·0	66·0	25·0	89·0	69·0	20·0	79·0	84·8	75·6	69·6	·725	7·7	5·0	60	503	0	0	0	0	0	18	1	5	7	2·5	0	0·00
September .. ..	29·925	29·720	0·205	29·808	102·0	57·0	45·0	88·3	65·2	23·1	71·8	76·7	72·3	69·2	·715	7·7	2·2	78	512	0	3	0	1	1	15	4	4	2	2·2	0	0·00
October .. ..	30·018	29·819	0·199	29·916	96·0	57·0	39·0	84·7	62·6	22·1	73·6	79·8	71·3	65·5	·627	6·7	4·1	64	511	2	4	0	2	2	5	3	3	10	3·1	3	0·45
November .. ..	30·091	29·780	0·311	30·019	96·0	52·0	44·0	79·9	57·6	22·3	68·8	72·1	64·2	58·2	·485	5·3	3·2	62	521	0	2	3	7	2	5	0	0	11	4·1	6	4·95
December .. ..	30·189	29·748	0·422	29·944	77·0	44·0	33·0	64·8	49·0	15·8	56·9	57·5	50·6	44·3	·292	3·3	2·0	61	536	0	5	2	6	11	2	2	0	3	5·8	15	10·05
Means .. ..	30·031	29·672	0·359	29·857	88·8	48·6	40·2	77·0	56·5	20·5	66·4	70·7	63·8	58·6	·523	5·7	2·9	66	520	Sums. 3	Sums. 29	Sums. 12	Sums. 41	Sums. 34	Sums. 113	Sums. 40	Sums. 31	Sums. 63	4·0	Sums. 66	Sums. 28·65
Number of Column ..	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

divided. Some take the words "Way of the Sea" to mean merely the inhabitants of the neighbourhood of the Lake; others restrict the words to the tract of land *west* of the Lake; others again seem to place "The Way of the Sea" wholly "beyond Jordan," or *east* of the Lake. Following a hint given by Lightfoot (Chorog. Cent., ch. 71), I had thought that "The Way of the Sea" might be a narrow strip or "full line" of dry land on the east coast of the Lake, belonging to Naphthali, whereon the fishers of Naphthali might "draw out their nets," for (according to Lightfoot) the Lake was wholly within the territory of Naphthali.

In the midst of all this uncertainty, it is refreshing to learn that the *Via Maris* is simply a "well-known and important commercial highway" connecting Damascus with the Mediterranean Sea; that it crosses the Upper Jordan at the Bridge of Jacob's Daughters; and that it is much frequented, though in a ruinous state, at the present day. Perhaps Josephus (Ant. v, i, 22) is merely alluding to the point at which the *Via Maris* crosses the Jordan, when his words *seem* to include the city of Damascus within the portion of Naphthali—an interpretation which Lightfoot (*l. c.*) says "would be ridiculous."

Can the identification of the *Via Maris* of Isaiah ix, 1, with Herr Schumacher's "third principal and caravan road" be substantiated? And, if so, what does the phrase mean in Kings xix, 43?

CHARLES DRUITT.

## METEOROLOGICAL OBSERVATIONS.

1880.

THE numbers in column 1 of this table show the highest reading of the barometer in each month; of these, the highest appear in the winter, and the lowest in the summer months. The maximum for the year was in January, viz., 30·269. In column 2 the lowest in each month are shown: the minimum, 29·489 ins., was in April; the range of readings in the year was 0·780 inch. The numbers in the 3rd column show the range of readings in each month; the smallest is in October, being a fifth of an inch, whilst the largest is in April, being somewhat more than half an inch. The numbers in the 4th column show the mean monthly pressure of the atmosphere; the largest is in January and the smallest in July.

The highest temperatures of the air in each month are shown in column 5. The highest temperature in the year was 103° in May, but the temperature exceeded 90° in every month from April to November. The first day in the year the temperature reached 90° was on April 12th, and there were two other days in this month when the temperature was more than 90°; in May there were five days when the temperature reached and exceeded 90°; the highest, 103°, took place on the 23rd. In June there were two such days, in July six days, in August seven days, in September

nine days, the highest of which, on the sixth day, was  $102^{\circ}$ ; in October four days, and in November one day—on the 4th, when the temperature was as high as  $96^{\circ}$ , and this was the last day in the year of such a high temperature as  $90^{\circ}$ ; therefore the temperature reached and exceeded  $90^{\circ}$  on 36 days in the year.

The numbers in column 6 show the lowest temperature of the air in each month; in January it was as low as  $32^{\circ}$  on two different nights, and was below  $40^{\circ}$  on three other nights; in February it was as low as  $32^{\circ}$  on one night, and below  $40^{\circ}$  on four other nights; in March it was as low as  $34^{\circ}$  on the 17th, and below  $40^{\circ}$  on two other nights; and the temperature was not below  $40^{\circ}$  in any other month of the year: therefore the temperature at night was as low as  $32^{\circ}$  on three nights, and it was below  $40^{\circ}$  on thirteen nights in the year. The yearly range of temperature was  $71^{\circ}$ . The range of temperature in each month is shown in column 7, and these numbers vary from  $25^{\circ}$  in August to  $53^{\circ}$  in both April and May.

The mean of all the highest temperatures by day, of the lowest by night, and of the average daily ranges of temperature are shown in columns 8, 9, 10, respectively. Of the high day temperatures the lowest was in January— $58^{\circ}5$ —and the highest in July, August, and September. Of the low night temperatures, the coldest,  $42^{\circ}9$ , took place in January, and the warmest,  $69^{\circ}$ , was in August. The average daily range of temperature, as shown in column 10, in January— $15^{\circ}6$ —is the smallest, whilst that in December was of nearly the same value; and the largest was in May— $23^{\circ}9$ .

In column 11, the mean temperature of each month, as found from observations of the maximum and minimum thermometers only. The month of lowest temperature was January,  $50^{\circ}7$ , and that of the highest was August,  $79^{\circ}$ . The mean temperature for the year was  $66^{\circ}4$ .

The numbers in columns 12 and 13 are the monthly means of a dry and wet-bulb thermometer taken daily at 9 a.m.; and in column 14 the monthly temperature of the dew point at the same hour, or that of temperature at which dew would have been deposited. The elastic force of vapour is shown in column 15, and in column 16 the water present in a cubic foot of air in January was as small as  $3\frac{1}{2}$  grains, whilst in July it was as large as  $9\frac{1}{2}$  grains. The numbers in column 18 show the degree of humidity, saturation being condensed as 100; the smallest number is in April, and the largest numbers are in January and September. The weight of a cubic foot of air under its pressure, temperature, and humidity at 9 a.m. is shown in column 19.

The most prevalent winds in January were S.E. and S., and the least prevalent were N. and N.W. In February the most prevalent was S.E., and the least prevalent N. and N.W. In March the most prevalent were N.E. and W., and the least prevalent N. and N.W. In April the most prevalent was S.W., and the least were N., N.E., and E. In May the most prevalent were W. and its compounds, and the least N., S.E., and S. In June, July, August, September, and October the most prevalent were the S. winds, and the least prevalent were N., E., and its compounds.

In November the most prevalent were S.E. and S.W., and the least prevalent were N., N.W. ; and in December the most prevalent wind was S., and the least prevalent were N. and N.W.

The numbers in column 29 show the mean amount of cloud at 9 a.m. ; the month with the smallest amount is June, and the largest March. Of the cumulus, or fine weather cloud, there were 111 instances in the year ; of these there were 15 in May, 17 in June, 18 in July, and 19 in August, and but 2 only in each of the months February and December. Of the nimbus, or rain cloud, there were 58 instances in the year, of which 12 were in January, 12 in February, and 13 in December, and but 3 only from May to October. Of the cirro-cumulus there were 38 instances ; of the cirrus, 41 ; of stratus, 10 ; and cirro-stratus, 5. There were 103 instances in the year of cloudless skies, of which 15 were in September, 12 in June, 12 in October, 10 in August, and 9 in May and November.

The largest fall of rain for the month was in December, 10.05 ins., of which 1.37 in. fell on the 7th, 1.24 in. on the 8th, and 1.08 in. on the 6th. The next largest falls for the month were in January, 5.32 ins., and in November, 4.95 ins., of which 2.15 ins. fell on Nov. 28th, and 1.11 in. on the 29th. No rain fell from the 2nd of May till the 18th of October, making a period of 168 consecutive days without rain.

JAMES GLAISHER.



THE  
PALESTINE EXPLORATION FUND.

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NOTES AND NEWS.

We hear from Herr Schick that a cave has been found in Jerusalem itself at a depth of no less than 47 feet 6 inches below the surface. The discovery was made in certain excavations conducted by the Russians south-east of the Church of the Holy Sepulchre. When the cave is cleared out he will report further upon it. Additional vaults of masonry have also been found in the Muristan.

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Some years ago the Russian mission acquired a piece of land near the ancient site of Jericho. In digging for a foundation, capitals, pillars, lintels, iron weapons and instruments, pottery lamps and jars, brass or bronze trays, candlesticks, rings, &c., have been found—in fact, all the indications of important buildings. The Russian Exploration Society are erecting new buildings for hospices, &c., to the north of the Russian buildings.

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Herr Schumacher reports the discovery of a cave near Nazareth, which he thinks will prove of great interest in connection with Mediaeval traditions.

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We have also received from Herr Schumacher his detailed Report of an examination of Abil—the Abila of the Decapolis—situated in the south bank of the Yarmûk. The Report contains a plan with numerous illustrations. It will be published next year.

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The University of the South has conferred upon Major Conder, R.E., the degree of D.C.L., *Honoris Causâ*; the other honorary degrees for the year conferred on Englishmen being Prebendary Rowe, D.D., and Rev. J. A. Hewitt, D.D.

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The Lists of Old and New Testament names and identifications, with the references to Josephus, are now ready. Subscribers can have copies of the latter, separate, at 1s., and of the two together, in paper cover, for 3s., and bound for 3s. 6d., by application to the office only. To the general public the price of the book is 6s.

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As already announced, with the view of clearing off the MSS. which await publication, the Committee have resolved on issuing an edition, in form similar to, and uniform with, the "Survey of Western Palestine," of the following works:—

1. Conder's "Survey of Eastern Palestine," so far as completed. The MS. is very voluminous, containing as much as will make a volume equal in size to those of the "Memoirs" in the "Survey of Western Palestine." None of it has been published; the drawings are very numerous, and of the deepest interest to the student of prehistoric monuments, as well as for the illustration of the Bible.
2. The Archaeological Mission of M. Clermont-Ganneau, with the drawings of M. le Comte.  
These drawings are many hundreds in number, and executed in the finest style. They figure a vast number of monuments and ruins not in the "Memoirs."
3. The Flora and Fauna of the Wady Arabah, by J. Chichester Hart, Esq., accompanied by many drawings of plants, &c., in the best style.

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The editions will be limited to 500. The first 250 subscribers will pay seven guineas for the three volumes, with an index; subscribers to the "Survey of Western Palestine" will be privileged to have the volumes for this sum. The price will be raised, after 250 names are received, to twelve guineas. The Committee are pledged never to let any copies be subscribed under the sum of seven guineas. Mr. A. P. Watt, 2, Paternoster Square, is the agent.

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Mr. A. P. Watt has now received a sufficient number of names to warrant the commencement of the publication of the Eastern Survey, the results of M. Clermont-Ganneau's Mission and Mr. Chichester Hart's Mission. Intending subscribers to these most important and valuable works are requested to send their names to Mr. Watt (2, Paternoster Square) without delay.

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The Palestine Pilgrims' Text Society has now issued the following works:—

1. "The Holy Places visited by Antoninus Martyr."
2. "The Pilgrimage of the Holy Paula."
3. The Buildings of Justinian. By "Procopius."
4. The Description of Syria. By "Mukaddasi."
5. "The Bordeaux Pilgrim."
6. "The Abbot Daniel."
7. "The Crusader's Letter from Acre to England."
8. "The Norman-French Description of the City and the Country."  
Translated and annotated by Captain Conder, R.E.
9. "The Travels of Nasir-i-Khusrau." Translated by Guy Le Strange.

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In the press, and will be issued before the end of the year:—

"Arculfus de Locis Sanctis." Translated by Rev. R. Macpherson, and annotated by Sir Charles Wilson.

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The friends of the Society are earnestly requested to use the "Memoirs of Twenty-one Years' Work" as a means of showing what the work has been, and what remains to be done.

Subscribers are very earnestly asked:—(1) To pay their subscriptions early in the year—say in January. (2) To pay them direct to Coutts and Co. by a banker's order. (3) If they would rather choose their own time, to send up their subscriptions without being reminded. The Clerical Staff of the Society is small; it is most desirable not to increase it; and if these simple requests are attended to a great saving of clerical labour, postage, and stationery is effected. For instance, there are, say, 3,000 subscribers. If every one of these waits to be reminded, and has to have a receipt sent to him, the Society has to spend £25 a year additional in postage, and to write 6,000 letters, merely to ask for and to acknowledge the receipt of the subscriptions.

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It has come to the knowledge of the Committee that certain book hawkers are representing themselves as agents of the Society. The Committee have to caution subscribers that they have no book hawkers in their employ, and that none of their works are sold by any itinerant agents.

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The Rev. James Neil, author of "Palestine Explored," has issued a pamphlet called "Strange Scenes," in which, for one penny, he gives a series of illustrations of the Bible taken from the country itself—with forty illustrations by Mr. H. A. Harper. The publishers are Messrs. Woodford, Fawcett, & Co., Salisbury Square, E.C.

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The following books are now published uniform in size and appearance:—Conder's "Tent Work;" Conder's "Heth and Moab;" Schumacher's "Across the Jordan;" "The Memoirs of Twenty-One Years' Work;" Conder's "Syrian Stone Lore;" Conder's "Altaic Inscriptions;" and Schumacher's "Jaulan." Subscribers can have the whole set, together with Hull's "Mount Seir," and Names and Places, for 32s., carriage free.

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Mr. Armstrong has prepared a list of the photographs belonging to the Society, arranged alphabetically according to those Bible names which are illustrated by views. This list is now ready. Those who wish for a copy may send in their names.

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The income of the Society, from June 22nd to September 17th, 1888, inclusive, was—from subscriptions and donations, £122 0s. 0d.; from all sources, £296 7s. 3d. The expenditure during the same period was £269 18s. 10d. On June 21st the balance in the Banks was £235 18s. 3d.

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Subscribers who do not receive the *Quarterly Statement* regularly are asked to send a note to the Secretary. Great care is taken to forward each number to all who are entitled to receive it, but changes of address and other causes give rise occasionally to omissions.

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It does not seem generally known that cases for binding the *Quarterly Statement* can be had by subscribers, on application to the office, at 1s. each.



While desiring to give every publicity to proposed identifications and other theories advanced by officers of the Fund and contributors to the pages of the *Quarterly Statement*, the Committee wish it to be distinctly understood that by publishing them in the *Quarterly Statement* they neither sanction nor adopt them

The only authorised lecturers for the Society are—

- (1) Mr. George St. Clair, F.G.S., Member of the Anthropological Institute and of the Society of Biblical Archæology.

His subjects are :—

- (1) *The General Exploration of Palestine.*
- (2) *Jerusalem Buried and Recovered.*
- (3) *Buried Cities, Egypt and Palestine.*
- (4) *Buried Cities of Mesopotamia, with some account of the Hittites.*
- (5) *The Moabite Stone and the Pedigree of the English Alphabet.*

Address : Geo. St. Clair, Bristol Road, Birmingham, or at the Office of the Fund.

- (2) The Rev. Henry Geary, Vicar of St. Thomas's, Portman Square. His lectures are on the following subjects :—

*The Survey of Western Palestine, as illustrating Bible History.*

*Palestine East of the Jordan.*

*The Jerusalem Excavations.*

*A Restoration of Ancient Jerusalem.* Illustrated by original photographs shown as "dissolving views."

- (3) The Rev. James King, Vicar of St. Mary's, Berwick. His subjects are as follows :—

*The Survey of Western Palestine.*

*Jerusalem.*

*The Hittites.*

*The Moabite Stone and other monuments.*

- (4) The Rev. Thomas Harrison, 38, Melrose Gardens, West Kensington Park, W. His subjects are as follows :—

(1) *Research and Discovery in the Holy Land.*

(2) *In the Track of the Israelites from Egypt to Canaan.*

(3) *Bible Scenes in the Light of Modern Science.*

NARRATIVE OF A SCIENTIFIC EXPEDITION IN THE  
TRANS-JORDANIC REGION IN THE SPRING OF 1886.

N.B.—*I have adopted generally, for obvious reasons of convenience, the orthography of proper names used by the P. E. F. in maps and other publications.*

THE object of the expedition, of which the following is a narrative, was the study, in the field, of the Flora of Moab, Gilcad, and Haurân, with special reference to the forthcoming Flora of Syria and Palestine, and to observe and collect the birds of the same region, to be added to the collections of the Syrian Protestant College, with a view to the ultimate preparation of a work on the Ornithology of the same district. In addition to these, the prime objects of the expedition, accurate observations were made and recorded of the readings of two aneroids, one of Browning's and the other of Watson's make, with a view to settling the altitude of the places visited. The *personnel* of the expedition consisted of Dr. Thomas W. Kay, Professor of Zoölogy in the Syrian Protestant College, Mr. Dauid Salim, B.A., an advanced medical student in the same, and the author. The time chosen was that in which the greatest number of plants are in season, some traces of those of the early spring being still found, while the summer plants are in many cases in a sufficiently forward state to enable one familiar with the botany of the country to determine them. As far as the Ghor is concerned, this journey was supplementary to a hasty one made in 1882, but not extended to the Shittim plain.

The barometers used during this journey were observed during the two months preceding at the Observatory of the Syrian Protestant College at Beirût. The mean for the whole of this period, corrected for the sea level, was 30.04 inches. At 5 p.m. of the day we left Beirût for Jaffa it was 29.99 inches. In the following notes B. will stand for Browning's and W. for Watson's barometer.<sup>1</sup>

*April 19.*—As Jerusalem was to be our base of operations, we went first to Jaffa by sea, taking with us only our scientific apparatus and personal baggage, leaving the arrangement of tents, transportation, and provisions to be made at Jerusalem. We had entered upon the season of steady, fair weather, and enjoyed a very quiet sail to Jaffa, arriving early next morning.

*April 20.*—At 7.30 a.m. we disembarked. Barometers: B., 30.05; W. 29.8; mean, 29.92. This observation was taken exactly at the sea level.

<sup>1</sup> I have chosen to record both readings, as well as to give the mean, owing to the fluctuations, for which I am unable to assign a reason. It had been my intention to take also a portable mercurial barometer, but it was unfortunately broken, and could not be repaired in time. I share the opinion of M. Barbey, expressed in his "Herborizations au Levant," as to the unreliability of aneroids for determination of altitudes.

From Jaffa to Jerusalem we made use of one of the rough wagons belonging to the German colonists, and drove over the ill-kept road, which seems to be worse every time one passes over it. We only noted the plants which lay along our road, as we had no time to go to any distance in search of specimens. We observed in the hedges of Jaffa *Vicia sericocarpa*, *Fumaria Judaica*, *Lycium Barbarum*, *Urtica pilulifera*, and *U. membranacea*, *Acacia Farnesiana* stretching its thorny arms over the road, *Bryonia Syriaca* trailing in and out among the hedges, *Ephedra campylopoda*, *Rubus collinus*, and *Smilax aspera*, var. *Mauretanicæ*.

Among the plants noted on the road to the foot of the mountain, beside the commoner species of the maritime plain, we find *Silene Palestina*, *Kruberia peregrina*, *Ferula communis*, *Malcolmia pulchella*, *Cachrys goniocarpa*.

All along the road women and children were seen gathering out weeds, especially tares, from among the wheat. The men were ploughing the ground to prepare it for Sorghum. This seed differs from that of wheat and barley in not requiring rain to cause it to mature, and so may be sown late in the spring, when it will get little or no moisture save that in the soil. The grain is not only fed to camels, but ground to make bread for the peasantry. In one case we passed a single camel yoked to a plough. Sometimes a team is made of a camel and an ass, the former being attached to the shorter and the latter to the longer arm of a rude sort of a yoke.

At Bab-el-Wad, at the foot of the mountains, half-way from Jaffa to Jerusalem, we stopped to bait our horses, who require three feedings to get them to Jerusalem. There is a small hotel here, where a botanist who desires to study the flora of this region may find lodging and a frugal diet. In fact, there were two young Americans then staying there, engaged in collecting flowers for ornamental books illustrative of the flora of Palestine. There is also a miserable café by the roadside. We ordered some coffee, and, being entitled to two piastres in change, we received coppers in nominal value thirteen piastres, and in weight about half a pound. The coinage of Turkey is unknowable. The nominal unit of value is a piastre, but no one has ever seen a coin which represents this unit. It is true that there are numerous coins stamped with the name piastre and fractions of a piastre, but they differ in value in every town. One piece, nominally a piastre, is worth half a piastre in one place and a little less in another, and more in another. A twenty-piastre piece is worth nineteen in one place, twenty-three in another, twenty-six in another, but not these numbers of any actual coin, but of an ideal piastre, which has no existence. In Beirût a Turkish gold medjeedie is worth  $123\frac{1}{2}$  piastres, in Jerusalem  $124\frac{1}{2}$ , and so on. Accurate accounts in such a state of the coinage are quite impossible. There are many coins circulating at half, or a quarter, or even an eighth, of their nominal value. The paper issues of the Government are absolutely worthless.

The way from Bab-el-Wad to Jerusalem lies at first up the valley; it

then passes over several spurs of the mountain, making in some places a considerable descent, with corresponding loss of time in regaining the lost altitude. The most common trees on the road are the terebinth, the ever-green oak, and the olive. The *Arbutus Andrachne* is one of the most conspicuous of the shrubs. There is also an abundance of *Calycotome villosa* and *Rhamnus Palæstina*. It soon grew too dark to botanize, and we did not arrive in Jerusalem until half-past ten at night, twelve hours after leaving Jaffa. Barometer: B., 27·37; W., 27·20; mean, 27·285, at level of second floor of the Mediterranean Hotel.

The birds observed during the day were *Passer domesticus*, *Merops apiaster*, *Alauda cristata*, *Carduelis elegans*, *Accipiter nisus*, *Milvus* sp., *Saxicola* sp. We also saw a few lizards.

*Wednesday, April 21, 7 a.m.*—Barometer: B., 27·39; W., 27·19; mean, 27·29, which indicates a height of 2,500 feet. We had received a hospitable greeting the night before from Rev. S. Merrill, D.D., then U. S. Consul at Jerusalem. We had hoped for his company during the journey, but he was unable to leave his post at that season owing to the great number of American travellers in Jerusalem. We thus lost his valuable experience of the country east of the Jordan, in the knowledge of which he is not equalled by any traveller, having spent many years in studying its archæology, geography, and natural history.

We had great difficulty in arranging for animals to carry our impedimenta and ourselves, as the horses and mules not actually on the march with travellers were all at grass. At last, however, we arranged, through Cook's agency, for the nine animals required, and for a cook, and the stores necessary for a twenty-days' tour. But as there was no hope of our getting off on that or the following day, we had time to see so much of Dr. Merrill's fine collection of bird and animal skins as was not already packed to be shipped. It is, perhaps, with the exception of that of Canon Tristram, the most complete in the world for Palestine. Among other varieties he has the skin of an otter from the Jordan and a wolverene from the wilderness of Judea; also a lizard from the Syrian Desert, about a yard long, of which a specimen (unnamed) exists in the museum of the Syrian Protestant College. The number and variety of birds' skins is very great. This collection is now at Andover, in the United States.

*Thursday, April 22.*—Barometer: B., 27·36; W., 27·12; mean, 27·24. The morning was filled up with arrangements for the journey. Among others, we secured the services of Sheikh Felah Nimr, and his brother, 'Ali Nimr, of the tribe of 'Adwân Arabs in Northern Moab, to conduct us as far as Ma'in on the following terms:—

1st. Three medjeedies (silver) a day during the period of our stay in the dominions of their tribe.

2nd. Should we go further to the southward, as, for example, to Callirrhoë or Kerak, four medjeedies a day.

3rd. They should have no claim to food, but would expect an occasional invitation to a meal. (This practically means that they expected to live off our table.)

4th. At the end of the journey they are to have 5 lbs. of coffee and the same quantity of sugar as a gratuity.

5th. In case of our wishing to pursue our journey into the territories of the Arabs of Gillead, Sheikh Felah agrees to make an arrangement with Sheikh Shibly of that tribe at the same rate.

To confirm our bargain, one Turkish lira was paid down on the spot, and although no contract was written Dr. Merrill assured us that all would be as verbally agreed. We merely noted down the terms as a memorandum to ourselves.

I then made the circuit of the city walls, and found a flora somewhat peculiar to such localities, as *Sisymbrium pumilum*, *Silene apetala*, *S. racemosa*, Willd., *Lepidium sativum*, *Linum Hælava*.

A feature of these plants is that they are more or less stunted by the thinness of the soil and the exposure to the sun. I was unable to complete the circuit of the walls as I had once before done, owing to the peculiar fanaticism of the Moslem pilgrims caused by the return of the sacred banner from Nebi Musa. The annual pilgrimage to Nebi Musa is of modern origin, and was devised by the Turkish Government as an offset to the Christian and Jewish ceremonies of Easter and Pass-over. For the convenience of the pilgrimage, which would have been difficult, if not impossible, had the shrine been on Nebo, where it ought to be, the story was invented that Moses fled from his impending fate on Nebo, crossed the Jordan into the wilderness of Judea, and was not overtaken by the Angel of Death until he reached the site of the present shrine. During Holy Week the peasants throng into Jerusalem from all directions, and march to the sound of drums and pipes and singing down to Nebi Musa, which is situated on a rocky ledge above the Dead Sea, about three-fourths of the way from Jerusalem to the plain. Each company of pilgrims sacrifices a lamb, and eats it with singing and dancing. The banner, furnished by the Turkish Government, which has been taken down by a squad of Turkish cavalry, is escorted back also by the motley throng of pilgrims, and as the procession files around the shoulder of the Mount of Olives, at the very spot where we may fancy the children meeting our Saviour with their hosannahs, it is greeted with salvoes of artillery, posted at St. Stephen's Gate, and the shouts of the multitudes on the hillsides overlooking the Valley of Jehoshaphat and on the walls and towers of the city. The scene has points of resemblance to the triumphal entry of our Lord which make it extremely suggestive, and is one of the most striking spectacles of Passion Week.

Late in the afternoon our riding horses were brought for trial. The Orientals are extremely unfeeling in the matter of riding and loading animals with sore backs; almost all the horses brought for trial had bad ulcers under the saddle pads. At last, after rejecting a considerable number of animals, we found some with backs which, by dint of special padding to avoid the sore places, could bear the saddle.

In the evening I had the pleasure of an introduction to Professor Lewis, of the Committee of the Palestine Exploration Fund, with whom I

had a conversation in regard to the projected journey, and also in respect to the desirability of establishing in connection with the College at Beirût a library of reference composed of works bearing on Oriental research, and a museum of Biblical archaeology and natural history for the use of scholars who may wish to pursue their studies in the East.

*Friday, April 23.*—Barometer: B., 27·38; W., 27·16; mean, 27. No journey in the East can be begun without a controversy the first day in regard to the loads, no matter how explicit has been the bargain; the muleteers always pronounce the loads too heavy, and hope by delays at the last moment to force the traveller to take an extra animal or two. With a little firmness and patience, however, we were under way at half-past nine in the morning.

The vegetation along the road from Jerusalem to Jericho is the same as that of the table-land of Palestine until about half an hour before reaching Khan Hathrûrah, when the desert types suddenly begin to appear. The first of these plants that is met is *Statice Thouini*, then *Chenolea Arabica*, *Erodium glaucophyllum*, *Fagonia mollis* and *F. grandiflora*, *Glaucium corniculatum*. At Khan Hathrûrah the mean of the barometer was 29·04, which makes it a little below the level of the sea. This Khan, on the supposed site of the inn where the good Samaritan left the man who had fallen among thieves, had been rebuilt since my visit in 1882. A large quadrangular enclosure has been provided for the accommodation of beasts, while a substantial row of arched chambers and an open court take the place of the ruined building of former days.

The change of flora after passing the Khan is striking and almost complete. Only a few ubiquitous remain to remind one of the vegetation of the hill country and plain, which is replaced by such plants as *Zygophyllum album*, *Haplophyllum longifolium*, *Allium Hierochuntinum*, *Gypsophila Rokejeka*, *Matthiola oxyceras*, *Diploaxis Harra*, *Centauria eryngioides*, *Pteranthus echinatus*, *Gymnocarpum fruticosum*, and *Galium Judaicum*. On arriving at the plain, *Zizyphus Spina-Christi*, *Balanites Ægyptiaca*, *Solanum coagulans*, *Boerhavia plumbaginea*, and *Loranthus Acaciæ* become the characteristic plants.

We arrived at the New Bridge at 7 p.m. Barometer: B., 31·6; W., 31·5; mean, 31·55. Our tents were pitched, and the appetising savour of our dinner was puffing out from beneath the lids of our tinned-copper cooking vessels. The flimsy trestle-work bridge, built of the wood of the Jordan valley, may last for a few years, but looks as if the slightest freshet would sweep it down the stream. Two red-legged storks were perched on the top of one of the marl hills, a little to the left of our road as we came into camp, but too far away for a shot, and it was too late to stalk them.

The birds of the day were *Passer domesticus*, *Corvus monedula*, *Turtur auritus*, *T. sp.* *Sylvia sp.*, *Saxicola leucomela*, *Alauda cristata*, *Pterocles Senegalus*, *Accipiter nisus*, *Lanius collurio*, *Falco tinnunculus*, *Neophron percnopterus*, *Gyps fulvus*, *Columba livia*, *Caccabis chukar*. We also bagged a few lizards, which have not as yet been studied.

*Saturday, April 24.*—Barometer, a.m.: B., 31·55; W., 31·58; mean,

31565. While the horses were being saddled, and the camp struck, I occupied the time in botanizing in the jungle along the river. *Zollikofferia mucronata*, *Bromus brachystachys* (fine specimens over a yard high), *Tamarix Jordanis*, *Glycyrrhiza glabra*, *Nitraria tridentata*, *Lolium rigidum*, *Asparagus Lownei* (specimens with spurred leaves [in the original description by Baker, founded upon the specimens in Kew Herbarium, which I have since seen, there are no spurs]), *Lolium rigidum* (annual specimens, but in full fruit), *Populus Euphratica* (now past fruiting—I obtained fine fruiting specimens the next day in Wady Nimrîn).

After some bickering between the bridge-tender and our muleteers we crossed into the plain of Shittim. The caravan turned south-eastward toward Tell el-Hammâm, while we rode a little north of east toward Nimrîn. A few hundred feet from the bridge, Dr. Kay shot a bushy-tailed rat, which has not as yet been studied.

The characteristic plants met with in crossing the plain were *Statice Thouini*, *S. spicata*, *Balanites Egyptiaca* (Zakkûm), *Calotropis procera* (Ushîr), *Solanum coagulans* (Fikkis), *Zizyphus Spina-Christi* (Sidr or Nebk), the berries of which are edible, *Mesembryanthemum nodiflorum*, *Atractylis cancellata*, *Tunica Arabica*, *Matthiola oxyceras*.

We lunched at the waters of Nimrîn, and took a rest under the shade of a Nebk tree from the almost tropical heat. We then skirted the Moabite hills, and to our disappointment at the time, reached our camp at Tell-el-Hammâm, at the early hour of 3 p.m. Tell-el-Hammâm is twenty minutes distant from Tell Kefrein, in the valley of the Umm-Hadhar (pronounced by the Arabs M'Hadhar). Our tents were pitched on a hillock just above a morass formed by the water of the Umm-Hadhar, a most insalubrious site, which had been chosen by the obstinacy of our guide, Sheikh 'Ali, who always showed himself less accommodating than his brother, Felah. It had been our intention to encamp at Tell-er-Ramé, an hour further on. As the tents were already pitched, we concluded to make the best of the situation, especially as the swamp gave good promise of game and plants.

The birds of the day had been *Lanius lahtora*, *Coracias garrula*, *Coturnix communis*, *Buteo vulgaris*, *Accipiter nisus*, *Sylvia atricapilla*, *S. Rüpellii*, *Crateropus Acaciæ*, *Carduelis elegans*, *Alauda cristata*, *Ammodramus Heyi*.

We plunged into the swamp, and secured *Alcedo Smyrnenis*, *Oriolus galbula*, *Lanius Nubicus*, *L. lahtora*, *Buteo vulgaris*, *Turtur auritus*. A herd of six wild swine ran down from the opposite bank into the swamp. Presently the Arabs shot a sow, which furnished us at once with a valuable skin, and a good supply of pork.

The swamp also gave us *Asparagus stipularis*, both the type and the var. *brachyclados*, *Saccharum Egyptiacum*, *Populus Euphratica*, *Salix* sp. (near *alba*), and at its border we found *Periploca aphylla*, not heretofore found in the Ghor, and fine specimens of *Retama Rectam* in fruit, also *Trigonella Arabica* and *Daucus Jordanicus*, Post (a new species).

The warm spring from which Tell-el-Hammâm takes its name, is on

the hillock opposite that on which our camp was pitched, in a southeasterly direction. It is a spring of foul, ill-smelling water, with a temperature of 100° F.; gas, which we had no means of testing, rose in bubbles from the muddy bottom. Around the pools were numerous plants of *Phelipea lutea*, and overshadowing them a thicket of *Salvadora Persica*, but differing from the type in its long linear-oblong leaves, many of them four or five inches long. Dr. Merrill argues that these were the springs visited by Herod, rather than the almost inaccessible, though more potent, springs of Callirhoë.

In addition to the insanitary condition of our camp, we were subjected to another annoyance of a botanical character. The whole hill on which we were encamped was covered with a luxuriant crop of *Stipa tortilis*, then in full ripe fruit. The seed of this plant is about a third of an inch in length, and furnished with a needle-like point and retrorse hairs. The long awn is covered with barbed hairs, and sticks fast in the meshes of any fabric with which it comes in contact. Our clothes, bedding, tents, carpets, and wrappings became filled with these needle-like seeds, which tormented us with incessant pricks and scratches. A large part of our time was spent in the vain endeavour to get rid of this pest. Not until several days after we left this camp, and only by dint of incessant picking over of our clothes, tents, and bedding, did we finally clear them all out.

Barometer at 9 p.m. : B., 30·66 ; W., 30·7 ; mean, 30·68.

*Sunday, April 25.*—We spent a quiet day in camp. Barometer, 7 a.m. B., 30·8 ; W., 30·75 ; mean, 30·775. In a walk which we took in the afternoon we observed, on the hill behind our camp, abundance of *Lygai pubescens*, new for this region. The thermometer at noon stood 92° F. in the shade of our tent, but in the afternoon the heat was moderated by a cool breeze. We saw numbers of wild pigs and many birds during the day. They feed at this season on the barley, and take for dessert the berries of the Nebk. 7.30 p.m., Barometer, B., 30·63 ; W., 30·65 ; mean, 30·64.

*Monday, April 26.*—We were up betimes, refreshed by the needed rest of the Sabbath. Travellers and explorers lose no time by keeping the day of rest. Six a.m., Barometer, B., 30·72 ; W., 30·68 ; mean, 30·70. More wild pigs.

While the caravan was being loaded I took the accompanying sketch of the range of Jebel Neba.

The whole range bears the name of Jebel Neba. Jebel Siāghah is its western spur. Of these peaks more anon.

Before starting I noted *Notobasis Syriaca*, *Allium Hierochuntinum*.

We started at 6.30 a.m. for Tell-er-Ramé, leaving the train to take the direct road to Ma'in. An hour of shooting and botanizing among the Sidr trees brought us to Tell-er-Ramé. The hill is one of the landmarks of the Ghor, and has on its summit two whitewashed tombs, and many graves. Excavations would probably reveal ancient ruins, as is almost always the case with these isolated truncated tells in the East. Near it



base is a series of pits for storing grain. They are from four to six feet across, and six or eight feet deep. Bits of broken pottery project from the walls of these pits quite to their bottom. It would seem that for a

#### GENERAL VIEW OF THE NEBO RANGE.

Jebel Siâghah.

Jebel Neba.

Jebel  
El-Maslubiyah.



The Shittim Plain.

considerable depth the soil is full of sherds, the accumulation of many centuries of *debris* in the neighbourhood of human habitations. Our guides assured us that the grain stored in these pits is quite safe from rats and moisture. The Arabs cover the floor of the pit with cut straw (*tibu*), fill it to the level of the ground with grain, cover the grain with more straw, and then heap a mound of earth over all to a height of some feet above the surface of the soil. The wheat of all the trans-Jordanic region is stored in this way.

The road from the Ghor to 'Ayûn Mûsa is steep and stony. At the foot of Tell-er-Ramé I found *Convolvulus pilosella-folias*, Desr., a straggler from the distant plains of Mesopotamia, also *Polypogon maritimum* and *Beta vulgaris*, var. *maritima*, all new for this inland maritime plain. Gradually as we ascended, the flora changed. At first we met with the plants of the wilderness of Judea—*Haplophyllum longifolium*, *Allium Hierochuntinum*, *Centaurea eryngioides*, *Ricinus communis*; presently, *Pimpinella eriocarpa* (with fruit resembling that of *Psammogeton*). Soon we began to discover the characteristic plants

of the western slopes of the Palestine range — *Chrysanthemum segetum*, *C. coronarium*, *Senecio vernalis*, *Scolymus Hispanicus*, *Emex spinosus*, *Aphodelus fistulosus*, *A. microcarpa*, *Urginea maritima*, *Linaria Chalepensis*, *Chenopodium murale*, *Beta vulgaris*, *Salvia Horminum*, *Rhamnus Palæstina*, *Atraphaxis spinosa*, *Erodium cicutarium*, *Geranium rotundifolium* and *G. molle*, *Cichorium Intybus*, *Hordeum murinum*, *H. bulbosum*, *Piptatherum miliaceum*, *Pistacia Terebinthus*, var. *Palæstina*, *Saccharum Ægyptiacum*, *Arundo Donax*, *Capparis spinosa*, *Calendula Ægyptiaca*, *Filago prostrata*, *Polygonum aviculare*, *Juncus maritimus*, *Scabiosa prolifera*, *S. argentea*, *Bromus scoparius*, *Nerium Oleander*, *Gundelia Tournefortii*, *Ononis antiquorum*, *O. Natrix*, *Carriçhtera Velle*, *Rhagadiolus stellatus*, *Ballota saxatilis*, *Teucrium Polium*, *Dianthus multipunctatus*, *Convolvulus althæoides*, *Ephedra campylopoda*, *Muscari comosum*, *Diplotaxis Harra*, *Brassica Tournefortii*, *Dactylis glomerata*, *Erodium gruinum*, *Falcaria Rivini*, *Anchusa strigosa*, *Linum pubescens*, *Fumaria micrantha*, *Hymenocarpus circinnatus*, *Avena sterilis*, *Ajuga tridactylites*, *Helianthemum salicifolium*, *Scrophularia xanthoglossa*, *Pallenis spinosa*, *Asteriscus aquaticus*, *Sonchus oleraceus*, *Umbilicus horizontalis*, *Veronica Anagallis*, *Hyoscyamus aureus*, *Iris Sisyrinchium*, *Lamium moschatum*, *Carduus argentatus*, *Galium tricornè*, *Parietaria officinalis*, *Caucalis leptophylla*, *C. tenella*, *Poterium spinosum*, *Adonis autumnalis*, *Ornithogodum Narbonense*, *Trifolium tomentosum*, *T. stellatum*, *Silene racemosa*, *S. Atocion*, *Chætosciadium trichospermum*, *Lagæcia cuminoides*, *Ranunculus Asiaticus*, *R. myriophyllus*, *Sedum Palæstinum*, *Linum striatum*, *Biscutella Columnæ*, *Valerianella vesicaria*, *Fumaria parviflora*, *Lathyrus Aphaca*, *Geranium lucidum*, *G. tuberosum*, *Lythrum Graefferi*. These, with many others, will serve to give a picture of the floral panorama which unrolled before us as we ascended to 'Ayûn Mûsa.

At 'Ayûn Mûsa we found wild figs almost ripe. In fact some of them were already mellow enough to be eaten.

This fact may shed light on the incident of the barren fig tree, as it was hardly too late for a late Passover season.

We arrived at the fountain at 11.30 a.m. Barometer at the level of the cave, B., 28.5; at upper cave, B., 28.45; W., 28.4; mean, 28.425.

Hanging from the roof of the cavern are splendid fronds of *Adiantum Capillus-Veneris*, and on its floor fine specimens of *Scrophularia macrophylla*, and below the cavern *S. Michoniana*.

We lunched at the southernmost of the fountains, and then started for the summit of *Jebel Sîghah*, which stood up boldly above us. As we are making the ascent let us review the question of Moses' point of view, for the last time, of the promised land which he was not to enter.

We will assume as a fixed point of departure, what perhaps is nevertheless uncertain, that *Jebel Neba* is *Mount Nebo*. *Sheikh Felah*, our guide, who has taken most of the travellers through *Moab* in recent years, says that the whole mountain mass which looms up above *Wady 'Ayûn*

Mûsa is known by the name of Jebel Neba, as that to the south of it is known by that of Jebel el-Maslubiyah. Khurbet Siâghah is the name of the ruin which crowns the prominent shoulder of this mass which looms above 'Ayûn Mûsa, and overlooks the Shittim plain, but does not include the highest rounded summit of Nebo. Moses was in the Shittim plain when commanded to ascend Nebo, to **רֹאשׁ הַפִּסְגָּה** the top of the hill, or the top of Pisgah, making the latter a noun proper—the hill, *κατ' ἐξοχην*. If we suppose, as is altogether probable, that he started from the neighbourhood of Tell-er-Ramé, his road would lie as ours did by 'Ayûn Musa, and up the flanks of Jebel Siâghah, to its top, and thence to the summit of Nebo (the top of the hill) where he met his fate. It is impossible to conceive that he did not continue to pause and cast back his eyes from time to time during the ascent. He would instinctively turn westward at each winding of the road, and look back over the Shittim plain where the great host was encamped; at the green poplars and willows of the Jordan banks, with the silvery water flashing in places through their dense foliage, then across to the glaring desolate rocks of the Judaean wilderness; as he rose higher and higher he would discover the green hills of Palestine. When he reached the bold headland of Siâghah he would linger to take in the wonderful foreground in which the whole host would now be visible filling the plain, the northern third of the Dead Sea, the Jordan Valley, to the cleft at the bottom of which he knew lay the Sea of Tiberias (albeit invisible from this point of view), and the whole profile of Palestine. Neither from this point, nor from the top of Nebo, which is about 350 feet higher, could he literally see the Mediterranean. The including of the great sea in the prospect must be taken in the same sense as the seeing of all the land. No mountain in Moab is high enough to enable one to see the Mediterranean over the hills of Palestine, nor to see anything but the eastern declivity of those hills and their profile against the western sky.

From Siâghah Moses would naturally go on to the *top of the hill*, about a mile away, and 350 feet higher. Here his range of vision, although losing the immediate foreground of the Ghor, and the host of Israel encamped there, would take in a more comprehensive profile of the promised land across the Jordan, and in addition the surrounding hills of Moab. Here, if Neba be Nebo, should be placed the site of his last glimpse of the land of Canaan, and of the world in which he had sinned.

The criticism which derives Pisgah from Siâghah does not find any support in the genius of the Semitic languages. All Hebrew and Arabic words contain three, or at most four, radicals. Those of Pisgah are **פסג**. Those of Siâghah are **ص = س ي = ي غ = ع**. To derive **סיע** from **פסג** follows no known principle of derivation, and cannot be maintained.

Furthermore, there is a fatal scriptural objection to making the *top of*

*the hill* ראש הפסגה Slāghah. Balaam (Num. xxiii, 14) ascended to this point, *i.e.*, the *top of the hill* ראש הפסגה, and from it he saw only the outskirts of the Israelitish camp. Furthermore, it was the express object of taking him there, to prevent him from seeing the whole camp. Had his point of view been Slāghah he would have seen the whole host and not its borders only, whereas from the top of Nebo he would see only the outlying detachments, while Slāghah would hide the main body from his view. We may suppose that it was likewise the object of Jehovah in taking Moses to the top of Nebo, to spare him at the last moment the pain of seeing the host of his brethren, and so mitigate the sorrow of parting.

The attempt to derive Zoar from Slāghah falls to the ground, from philological as well as scriptural reasons. The radicals of Zoar are צוּר, while those of Slāghah are صرِيغ = ציג. Moreover, Slāghah is much too far off from any assignable site of Sodom to suit the narrative.

Our consideration of the walk of Moses would be incomplete, did we forget that he was quite familiar with every coign of vantage for obtaining the best view of Palestine. It must be remembered that Moses made the top of Nebo the first objective in his march into the northern Moab. The host of Israel rolled up the slope of the table-land to the crest of the highlands, and looked over into the promised land. He then addressed himself to the conquest of the country of Heshbon and Elealeh, and then pressed forward into Gilead and Haurān. Weeks, or perhaps months, were occupied in the subjugation of these extensive districts, and much time afterward in rebuilding the cities and putting everything in a posture to favour to the utmost the passage of Reuben, Gad, and the half tribe of Manasseh, across the Jordan with their brethren. During this period Moses and the leaders of the host, doubtless ascended every prominent peak from Nebo to Jebel Kuleib (spelt in the Arabic with ك not with ك), and saw in detail, over and over again, all the panorama of Palestine, and he likewise saw, from the mountains of Bashan, Lebanon and anti-Lebanon, and the Damascus plain, all of which belonged to them by inheritance, clear to the entering in of Hamath northward of Lebanon and anti-Lebanon, and had been searched out as lawful territory by the spies. In going up Nebo from the valley of the Jordan, Moses was to take a *last*, not a *first*, look, and that over scenes now become familiar to him and his people.

Our conversation has lasted longer than the ride from 'Ayūn Mūsa to Slāghah, and we are on the first of the two shoulders of which the head-land is composed. We arrived at 1.20 p.m.; barometer: B., 27.68; W., 27.65; mean, 27.665.

There are somewhat extensive ruins on this shoulder. Among them we found *Ferula communis*, and *Crambe Hispanica*.

The view from this point is indeed comprehensive and impressive. It includes the hill country of Judea, the Mount of Olives directly opposite (now crowned with a minaret), the land of Ephraim, Ebal, and Gerizim, and the hill country of Galilee. In the foreground is 'Ayûn Mûsa, the valley of the Jordan, and a considerable part of the Dead Sea. The heights of Nebo cut off all the view to the east. The ruins consist of a deep vaulted chamber, surrounded by rubble walls now fallen and shapeless; also a well with a curb stone. It may well have been one of the many high places of Baal, found all over the country. (*Cf.* Num. xxii, 41.)

We crossed over to the other shoulder of the headland, on which Lieutenant Steever had erected a stone heap as a memorial of his visit. Barometer: B., 27·66; W., 27·63; mean, 27·645. It lies south-west of the other. We found there fine specimens of *Allium Erdelii*, and *Paronychia argentea*. The view is substantially the same as that from the northern peak, but a little more extensive.

The two shoulders of Siâghah suit well the narrative of Balaam. From the northern summit of Siâghah, which is, perhaps, the high place of Baal mentioned at Num. xxii, 41, he would obtain a comprehensive view of the Israelites encamped in the plain. From the southern summit he would gain a still more comprehensive one. Both summits have ruins, which may be those of high places of Baal. Just below the top of Nebo, above Siâghah, is an undulating *wheat field*. This may be the *field of Zophim on the top of the hill*, רֶאֱשִׁית הַשֶּׁסְנֶה, and from the top of the hill he would see the outer part of the Israelites' camp and no more (*cf.* Num. xxi, 20, where Pisgah is again mentioned). The heights of Siâghah effectually hide the foreground of the plain as appears from the accompanying sketch.

After spending an hour on the peaks of Siâghah, we rode up to the *top of the hill*, crossing what may have been the field of Zophim, and reaching the summit at 3 p.m. Barometer: B., 27·26; W., 27·28; mean, 27·27. The view from this point takes in less of the north and south of Palestine than that from Siâghah, also less of the Dead Sea, and none of the Shittim plain, but includes all the great features of Palestine even better than that from Siâghah, and also the adjacent regions of Moab. It was by moving from point to point that Moses would take in every possible impression of the landscape, never more to be seen by him.

As soon as we had passed over the summit of Nebo we were in the rolling table-land of Moab. On that side there is no mountain. Scenery, fauna, and flora suddenly changed. The ridge, which is from the side of the ghor the summit of a mountain range, is from that of Moab the brow of the table-land, only slightly elevated above the general level. Nebo, from that direction, is only one of the many waves of that rolling prairie which stretches away to the Euphrates and Tigris, and beyond them to Beloochistan.

The table-land of Moab is destitute of trees, and, with the exception of Mâdeba (Medeba), which is a Christian village, and 'Ammân (Rabbath Ammon), which is a Circassian colony, has no human habitations, except

the black goats' hair tents of the Arabs. As it is for the most part devoted to grazing, the effect of the landscape is dreary and monotonous. We found *Iris Sari*, *Astragalus callichrous*, *A. Alexandrinus*, both the type and var. *elongatus*, *Barbey*, *Rhaponticum pusillum*.

SKETCH OF A PORTION OF MOSES' LAST VIEW FROM NEBO.



N.B.—The two prominent peaks in the centre are those of *Jebel Siâghah*. The white to the left of them is the head of the Dead Sea. The plain to the right is that of *Jericho*. The mountain range along the horizon is that of *Judea and Southern Samaria*. The most prominent peak, just over the left summit of *Siâghah*, is the *Mount of Olives*. The plains of *Moab* are hidden by the shoulders of *Siâghah*.

The birds of the day were *Lanius lahtora*, *L. Nubicus*, *L. auriculatus*, *Passer domesticus*, *Sylvia atricapilla*, *Accipiter nisus*, *Columba livia*, *Alauda cristata*, *Saxicola oenanthe*, *Melanocorypha calandra*, *Oriolus galbula*, *Buteo vulgaris*, *Coturnix communis*, *Ciconia alba*, *Alcedo Smyrnensis*.

At 5 p.m. we arrived at *Ma'in*, the ancient *Baal-Meon*, and encamped at a little distance from the eastern foot of the tell, by the ancient cisterns, one of which still holds water. Barometer, 6.30 p.m.: B., 27.14; W., 27.06; mean, 27.1. Nothing about the present ruins indicates high antiquity. There are, however, numerous cisterns cut in the rock, beneath the surface.

*Sheikh Felah*, our guide, is a man of about 50 years of age, of medium stature, with a mild countenance and gentle speech. He is the

most decided gentleman whom we met among the Arabs. He has a small box full of well-earned testimonials from the distinguished travellers whom he has conducted through Moab. As soon as we arrived at Ma'in, he rode off to arrange for our visit the next day to the hot springs at Callirhoë. This lies within the territories of the Hamideh Arabs, and the 'Adwân dare not conduct a stranger into their lands.

*Tuesday, April 27th, 6 a.m.*—Barometer: B., 27·16; W., 27·05; mean, 27·105. Taking an early start, we soon began our descent toward the deep chasm of the Zerka Ma'in. The first part of our way lay over the rocky rolling ground of the plateau. Within an hour we passed an encampment of the Hamideh. It consisted of a single row of tents with the openings toward the east. The usual array of dirty children, barking dogs, and slatternly women presented themselves. They offered us milk to drink, but as we had just taken our coffee we declined.

The flora was, for the first part of the way, the same that we had encountered in coming up the mountain the previous day, but reversed in order. On arriving at the level of the sea, we began to meet the peculiar plants of the Ghor and the deserts: *Erodium hirtum*, *Linaria Hælava*, *Centaurea*, sp., growing on the hot rocks near the road. As we went further down we collected *Alcea rufescens*, *Chardinia xeranthemoides*. At the top of the last hill before arriving at the amphitheatre of Callirhoë, we met fine specimens of *Cleomia trinervia*, then *Blepharis edulis* (not before noted here), *Reaumuria Palestina*, *Withania somnifera* (a variety with long peduncles), then *Ochradenus baccatus*, *Helianthemum Lippii*, var. *micranthum*, *Frankenia pulverulenta*, *Moringa aptera*, with panicles of fragrant flowers, *Acacia tortilis*, *Phoenix dactylifera*, *Tamarix mannifera*, *Daemia cordata*, with its curious twining stems, *Fagonia glutinosa*, *Pentstemon spiralis*, Forsk., growing by the side of the hot water with its sulphury-yellow flowers,<sup>1</sup> *Trichodesma Africanum*, *Aizeon Canariense*, *Iphionia juniperifolia*, *Tetrapogon villosum*, *Atriplex leucocladum*.

The barometers at the main spring at Callirhoë were: B., 30·20; W., 30·28; mean, 30·24. The principal springs were partly covered with poles and branches of trees, over which the Arabs lie and spread over themselves their thick lambskin cloaks, that they may swelter in the steam bath. The temperature of the principal spring was 138° F. There were several Arabs at the spring at the time of our visit, who had come for the sake of the steam baths. One of them was a young man with Hodgkin's disease (swelling of the lymphatic glands of the neck), and others were afflicted with various diseases, principally rheumatic. They had killed a lamb just before our arrival, and were seething the flesh in sour milk (lebben). The head and intestines were immersed in the hot spring to be parboiled before being cooked in the pot.

<sup>1</sup> This plant would seem to be the *Crucifer* alluded to by Tristram in his "Land of Moab," as no other plant with sulphur-coloured flowers grows by the water. It is, however, an *Asclepiad*, not a *Crucifer*.

I enquired of the Arabs what they knew about these springs. One of them informed me that "Our Lord Solomon" had brought these springs out of the rock. I asked him how Solomon got here over the frightful descent over which we had just come. He informed me that there were good roads through the country in those days. How an invalid like Herod could have reached them is a mystery. There is no trace of any road better than the present one, and down it an invalid could only be brought in a palanquin.

We remained for a couple of hours in the stifling atmosphere, and then set out on our return. As we started the Arabs at the spring attempted to extort black mail. We left the Sheikh to do the talking, simply assuring them that we would pay them nothing. Orientals are best dealt with through a mediator.

Our ride down had taken four hours. The return occupied five and a half, although we stopped but little to collect on our way back. We had expected to return up the wady, but found that it was quite impossible to go up its bed. As a detour along the brow of the cliffs which overhang it would have been very long and fatiguing, and we had no provisions for a bivouac overnight by the way, we returned over the same road by which we had come. The climb out of the gorge was excessively fatiguing, and not until we reached the breezy plateau did we regain the elasticity which the stifling air of the valley had quite taken away. On our arrival in camp we found that one of our Arabs was going to Jerusalem early in the morning, and, tired as we were, we were glad to avail ourselves of the chance to write to our friends at home.

The birds of the day were *Ciconia alba*, *Coturnix communis*, *Caccabis chukar*, *Merops apiaster*, *Passer domesticus*, *Alauda cristata*, *Calandrella brachydactyla*, *Saxicola œnanthe*, *Lanius Nubieus*, *L. collurio*, *Corvus frugilegus*, *Milvus*, sp. *Coracias garrula*, *Ammoperdix Heyi*. Two leopards were reported by the Arabs as seen the previous day on the way to the springs.

Barometer, 8 p.m. : B. 27·15 ; W. 27·05 ; mean, 27·10.

*Wednesday, April 28.*—Barometer, 7 a.m. at camp : B. 27·16 ; W. 27·13 ; mean, 27·145. We went up to the top of the ruins, and found the barometer there B. 27·1 ; W. 7·03 ; mean, 27·065.

The ruins are a confused mass, consisting almost wholly of the remains of the mediæval town, with few, if any, marks of antiquity. A few of the vaulted chambers seem to be used at times as residences, or as stables for cattle.

Before leaving I botanized around the camp, but found nothing of special interest. Our train took the direct route to 'Ain Hesbân, while we struck across the plain in a direction east of north toward Madeba (Medeba). We soon encountered large tufts of *Stipa Lagascæ*, the awns of which are sometimes ten or eleven inches in length. We also met with large tufts of *Phalaris Canariensis*, also *Glaucium Aleppicum*, with large orange-coloured blossoms, *Iris Sari*, *Astragalus Alexandrinus*, var. *elongatus*, *Barbey*.



From a distance Medeba presents a somewhat striking appearance, but the illusion is dissipated on entering the town. Yet among blind men a one-eyed man is king. Medeba is the only inhabited village on the Moab plateau, and, although the houses are of rough stone put together without mortar, and unplastered or simply daubed with mud, yet, by contrast with the goats'-hair tents of the Arabs, they are pleasing to all but Bedawin, whom nothing can induce to live within walls. The town contains about a thousand souls, all nominal Christians of the Greek and Latin rite. The complexions of the people are many shades lighter than those of the Bedawin, and some of the young girls are quite fair and tolerably pretty. We visited the Latin Church, a dismal enough sanctuary as compared with those of civilised countries, and yet an elevating and educating force in such a desolate land as Moab. One can understand better in such circumstances the tolerance in the Divine plan of error and partial truth, when they are antagonised with more radical error or total ignorance like that of the modern Moabite Arabs. We could not but remark what Christianity, even in its imperfect form, had done for Medeba.

The reservoirs of Medeba are on a grand scale, and well preserved. That on the south side is 110 metres in circumference, and could easily be repaired for use again. Those to the east and north are smaller, but also well preserved.

After a few purchases of chickens, eggs, and bread, we turned our faces northward toward Hesbân (Heshbon), which loomed up on a high swell of the table land. About an hour from Medeba we came to a group of cisterns under the ground, and some subterranean vaulted chambers, one of which was quite extensive and elaborate. These ruins are known as El-Kufeir-esh-Shurki. I am not aware of any biblical or classical site to which they can be referred. The vaults appear to be mediæval. We took our lunch under one of these vaults by the side of the underground chamber above alluded to. Our supply of water being exhausted, we drew a little from one of the cisterns which still holds water, but it was so muddy that we only used it to wash our hands after our lunch. On the waste soil above the vaults we found *Astragalus cruciatus*.

From El-Kufeir-esh-Shurki we reached Hesbân in an hour. From the ruins of this fortress a fine view is obtained of the whole plateau of Moab and the mountain range which culminates in Jebel Husha' (Osha'). The present ruins are not of high antiquity, and it is a difficult task for the imagination to restore to the reservoir to the east of the castle the beauty which made the fishpool of Heshbon a suitable simile for the eyes of Solomon's bride.

From Heshbon we crossed the plane to El-'Al (Elealeh), a shapeless mass of ruins, at the top of which is another of the stone heaps raised by Lieutenant Steever when establishing his base line for the triangulation of Moab. We have already noted one at the top of the southern shoulder of Jebel Siâghah. Dr. Kay started a fox on the top of El-'Al, but he proved too foxy for us, and escaped among the ruins. From El-'Al we

dropped down to our camp at 'Ain Hesbân, below the crest of the plateau. As soon as we crossed the brow of the table-land we again encountered the familiar flora and rocks of the maritime slopes of the Palestine range and of Lebanon.

We found our tents pitched in a meadow by the stream which flows from 'Ain Hesbân, not at the fountain itself. The water, however, was cool and clear, and very abundant. It was delightful to hear the murmuring of a brook in such a dry and thirsty land. The plants of the day were, in addition to those noted, *Astragalus hamosus*, *Geranium tuberosum*, *Veronica Syriaca*, *V. Cymbalaria*, *Coronilla scorpioides*, *Medicago scutellata*, *Adonis Palæstina*, *Allium Neapolitanum*, *Lagurus ovatus*, *Trifolium scutatum*, *T. clypeatum*, *Mercurialis annuus*, *Scandix Pecten-Veneris*, *Salvia Verbenaca*, *Silene inflata*, *Nasturtium officinale*, *Anthemis altissima*.

The birds of the day were *Ciconia alba*, *Coturnix communis*, *Caccabis chukar*, *Passer domesticus*, *Alauda cristata*, *Calandrella brachydactyla*, *Melanocorypha calandra*, *Columba livia*, *Yunx torquilla*, *Emberiza miliaria*, *Saxicola* sp., *Milvus* sp., *Accipiter nisus*, *Corvus frugilegus*, *Passer Moabiticus*.

Barometer at our camp at 7.30 p.m.: B., 27.56 W., 27.58; mean, 27.57.

*Thursday, April 29, 6 p.m.*—Barometer: B., 27.51; W., 27.48; mean, 27.495.

During the evening and night the clouds had rolled up heavily, and a few drops of rain fell. The barometer likewise fell during the night. On arriving in camp the night before we had found Sheikh 'Ali, the brother of Sheikh Felah, who gave us rather a sulky greeting. We were not sorry to learn that he was not to accompany us the next day. He is every way inferior as a guide to his polite and good-natured brother, Felah.

The morning was still threatening, so we rolled up our plant presses in the tent carpets to protect the specimens in case of a shower. We sent on our train by the direct road to 'Ammân, while we went around by 'Arak-el-Emîr. We turned northward, and passed over a spur of the mountain to Wâdy Na'ûr. Our road lay for an hour through a beautiful park-like country, sparingly wooded with *Quercus coccifera* and *Q. Egilops*, and the ground everywhere beset with *Poterium spinosum*. We also saw *Styrax officinale*, and a pure white-flowered form of *Anchusa strigosa*. A lark started up from under the horses' feet, flew a few paces, and alighted in the grass. I dismounted, and almost succeeded in catching it. But suddenly it rose, flew a little distance to lead me on. Dr. Kay then tried a distant shot, but did not hit it, and then the bird flew away out of our sight. Doubtless this was a ruse to protect its young.

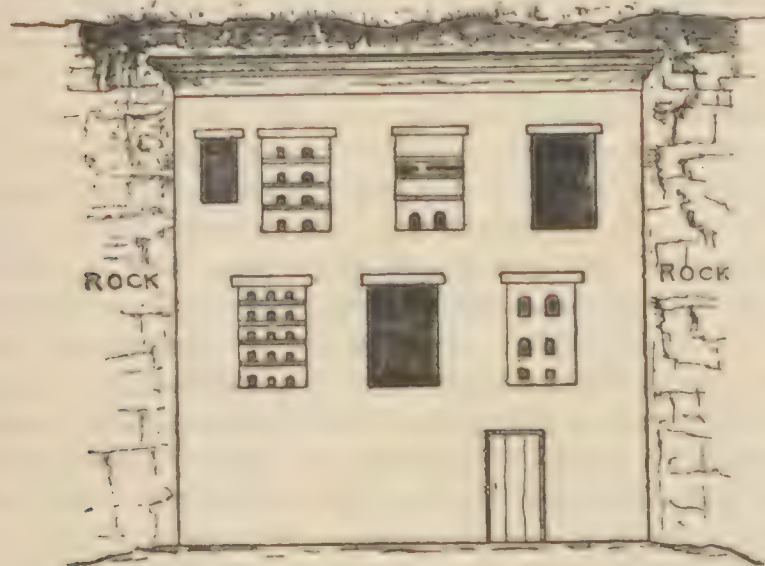
At half-past 11 we arrived at Kasr-el-'Abd, the ruin by 'Arak-el-Emîr. Barometer: B., 28.23; W., 28.27; mean, 28.25. The air was exceedingly stilling and oppressive. Among the ruins we collected *Trichodesma Boissieri*, Post, a new species with softer indument than *T. molle*, *Cerithe major*, *Pisum*

elatus. Overpowered by the glare and heat, we were glad to leave these ruins, where the mid-day sun cast no shadow, and made our way toward Wady-es-Sir. We rode up to the caverns of 'Arak-el-Emir, or Stabl 'Antar, which are now used as cattle-pens, and the talus of manure accumulated at their base overgrown with rank specimens of *Notobasis Syriaca*, taller than a man on horseback. The cliffs above the caverns are full of turtle doves. Dauid bagged three at one shot. As we passed into the beautiful Wady-es-Sir, Dr. Kay stalked and shot a jay, and presently afterward a hawk. The valley is park-like, with here and there groves of trees, *Quercus coccifera*, *Pyrus Syriaca*, *Amygdalus communis*, *Pistacia Terebinthus*, intermingled with open glades and cultivated fields. After half an hour's ride up the valley we sat down to lunch under an evergreen oak, *Qu. coccifera*, by the side of a small mill-sluice, and ate our lunch. All around were fine specimens of *Scilla hyacinthoides*, with long, spike-like racemes of blue flowers. After shooting a few birds, we rode on up the beautiful valley of Es-Sir (Tyrus). The upper part of the valley is well wooded on both slopes, mostly with *Quercus coccifera*. Half-way from 'Arak-el-Emir, to the head of the valley, high above its left flank in the face of the cliff, is a rock-hewn dove-cote, of which the accompanying sketch will serve to give an idea. The length and breadth of the façade are each about 19 feet. At the bottom is a doorway, which is supplied with a rough wooden door. Some of the windows are entirely open, and others have the original rock pierced with pigeon holes, as indicated in the drawing. The cote is three storeys high, originally with rock floors, which are now for the most part broken away, and in part replaced with rough wooden beams overlaid by brush. A rock-column of an oblong shape, 13 feet 4 inches long and 3 feet 5 inches wide, occupies the centre of the building, as indicated in the accompanying sketch of the ground plan of the second storey. In each storey were six tiers of nests chiselled out of the walls and central column, affording in all accommodation for many hundreds of birds. Being alone, and half an hour behind the party, I had not time to count the number of these nests. At the time of my visit there were no pigeons there, and as there were no persons near from whom to make inquiries, I could not ascertain whether it still served its ancient purpose or no. From the door at the lower entrance, and the existence of a sort of pen in front and traces of manure about, I suppose that the ground floor is now used as a fold for sheep, and the upper for sleeping places for the shepherds. Who excavated it, and when, I have no means of surmising. There was no inscription on the façade or on the rocks near by. This dove-cote had been noted before by Lieutenant Conder, in an unpublished manuscript, of which I have heard, but have not seen, but has not yet been figured in any publication so far as I know.

On the sloping hillside, beneath the dove-cote, in the rich soil, was a large number of *Trachelanthus* (*Cerinthopsis*) *percana* of Paine, which seems to me not to differ specifically from the specimens of *T. Kurdica* in Boissier's herbarium. The single very imperfect specimen of the

latter plant in Kew herbarium differs somewhat from Paine's plant, but is too fragmentary to exhibit the specific characteristics. A little further up the valley I collected, on a shady bank, fine specimens of *Ajuga*

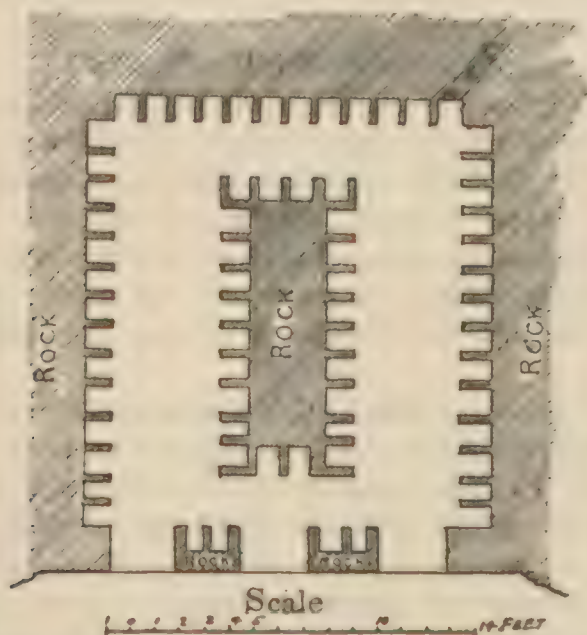
FACADE OF ROCK-HEWN DOVE-COTE IN WÂDY-ES-SÎR.



The lower cut represents the ground plan of the second storey of the same, showing the arrangement of the niches for nests. The central column is of the original rock, left as the pillars in mines to support the roof, and utilised to increase the capacity of the cote.

The upper floor is similar to the middle. The lower is also similar but has no windows.

The wooden door is quite modern.



*Orientalis*, with large rounded bracts. Further on, large specimens of *Cyperus longus*, and more *Trachelanthus Kurdica*.

Near the head of Wady-es-Sir is a new village of Circassian refugees, laid out with regular streets, neat little cottages, and an air of thrift quite anomalous in this land.

From the romantic scenery of Wady-es-Sir to the bleak plain of Moab, at its head, is a sudden and not agreeable transition. The dreary rolling upland, with no trees, and no relief to the eye but the numerous black goats'-hair tents, wears a featureless aspect, which was the more tiresome to us, as we were no longer rewarded with new and interesting plants, and in fact added nothing to our presses or our game bag. We were very glad when, at about 5 p.m., we arrived at 'Ammán. We found, however, to our disappointment, that our muleteers had pitched on a marshy plain by the great spring of the Zerka, which here bubbles out of the gravel, and flows in a broad sparkling stream through the town. As the camp at this place, beside its unhealthy situation, is half a mile from the ruins, and cut off from a view of them by a sharp turn in the valley, we made up our minds to move the tents to the brow of the hill south of the town, which commands a panoramic view of the ruins and the surrounding hills. While awaiting the re-establishment of our camp Dr. Kay shot a rock owl, which tried to escape by dropping into a cavity among the ruins. A Circassian boy crawled down into the crevice and fished him out with a hooked stick. It was 9 o'clock before we were settled in our camp, and our dinner was of the scantiest, but we were amply repaid for the drawbacks of our removal by the fine outlook over the town. The new Circassian village built among, and in part over, the ruins greatly mars their picturesque appearance, and as it has also been built at the expense of the materials furnished by the ancient buildings, it has largely contributed to their degradation. A generation or two of Circassian occupation will probably complete the destruction of Rabbath Ammon.

Barometer at camp on brow of hill: B., 27.05; W., 27; mean, 27. The birds of the day were *Corvus monedula*, *Lanius auriculatus*, *L. Nubicus*, *Garrulus glandarius*, *Upupa Epops*, *Corvus cornix*, *C. frugilegus*, *Actites hypoleucas*, *Saxicola onanthe*, *Turtur auritus*, *Columba livia*, *Alauda cristata*, *Gyps fulvus*, *Neophron percnopterus*, *Milvus*, sp., *Accipiter nisus*, *Merops apiaster*, *Ceryle rudis*, *Fringilla*, sp.

*Friday, April 30, Camp.*—Barometer: B., 27.2; W., 27.15; mean, 27.175. At top of modern Circassian village: B., 27.33; W., 27.33; mean, 27.33.

The great abundance of fish in the stream only half a mile below the spring in which it takes its origin, suggests the idea of a subterranean spawning ground. In the morning, before we started, two boys brought between them three strings, with about a hundred fish, to sell. Unfortunately we had no arrangements to preserve them, and carried away no specimens. The source of supply must be a very abundant one to allow of such a catch at one time. In point of fact the whole stream is alive with them.

After an hour spent in examining the ruins in detail, we started

westward across the dreary plain toward Es-Salt. *Salvia acetabulosa*, *Orchis tridentata*, *O. saccata*, *Fumana glutinosa*, and a few of the roadside ubiquitous, were all that we saw until we cleared the plain and began to cross the spurs at the edge of the table-land. In passing through a scrub recently cleared I found *Orchis punctulata*, var. *sepulchralis*, quite new for the Levant; the sepals and petals of the specimens found were pallid and greenish-nerved. Beyond this scrub we came upon a wooded ridge, an hour and a half south of Es-Salt. *Quercus coccifera* was the principal tree. Here I found *Limodorum abortivum*, parasitic on the roots of *Arbutus* *Andrachne* and the oaks (new for this region); also *Hesperis pendula*, *Piptatherum holciforme*, *Milium vernale*, *Arrhenatherum elatius*, *Cephalanthera ensifolia*, *Smyrniium Olusatrum*, *Cistus villosus*, *Lonicera Etrusca*, *Eryum lenticula*, *Pinus Halepensis*, *Papaver Argemone*, *Rubia tinctoria*, *Anagyris foetida*, *Carum ferulaefolium*, *Astragalus cretaceus*. As we left the woods and passed over the naked rocky spurs we again encountered the roadside ubiquitous, which accompanied us fairly within the outskirts of Es-Salt, where our tents were pitched on a shelf of rock, thinly covered with earth, under the Latin cemetery.

The birds of the day were *Passer domesticus*, *Sylvia atricapilla*, *Columba livia*, *Corvus cornix*, *C. frugilegus*, *Upupa Epops*, *Caccabis chukar*, *Melanocorypha calandra*, *Merops apiaster*, *Calandrella brachydactyla*, and *Anthus campestris*.

The savory welcome of the steam of our dinner saluted our nostrils as we passed the cook's tent. We had scarcely seated ourselves before our eyes were greeted with the welcome sight of Dr. Elias Saba, a medical graduate of the College at Beirut, who is acting as medical missionary of the Church Missionary Society at Es-Salt, where he is the associate of Pastor Jemel, the devoted incumbent of that parish. Dr. Saba, with true oriental hospitality, had brought us a lamb, a most welcome addition to our larder, which had been rather a scanty one since we had used up the last of our wild pork. He conducted us to the Turkish postal and telegraph station, where we sent a despatch to Beirut, which, however, was not delivered there until the afternoon of the following day, and the answer did not reach us until after forty-eight hours.

Es-Salt is built on both sides of a steep ravine, so that in many places the roof of one house serves as a platform in front of the one next above. Overlooking the town is a castle, now disused, and partly fallen into ruins.

Before dinner we dismissed our 'Adwân guides. A more courteous, obliging, and satisfactory guide than Sheikh Felah would be difficult to obtain.

Barometer at camp, 6 p.m. : B., 27·23 ; W., 27·2 ; mean, 27·215.

*Saturday, May 1, 6 a.m.*—Barometer : B., 27·27 ; W., 27·2 ; mean, 27·235. Taking an early start we went, in company with Dr. Saba, to botanize over the top of Jebel Husha' (the Arabic form of Hosea : it is not Ausha, as some have spelled it). The road winds up by an easy ascent. *Andrachne telephioides*, *Cerithe major*, *Rhus coriaria*, *Cyno-*

crambe prostrata, Marrubium cuneatum, Convolvulus Scammonia, Alys-  
sum campestre, Hypericum crispum, Anarrhirum orientale, and the  
ubiquists. Near the top we found Onobrychis aurantiaca (immature),  
Astragalus Christianus, Limodorum abortivum, parasitic on Arbutus  
Andrachne, Sisymbrium Columnæ, Valerianella truncata, Lolium sp.  
At a point near the top is the wely of Nebi Husha'. Barometer:  
B., 26.48; W., 26.43; mean, 26.455. It is a rectangular whitewashed  
building, 50 × 25 feet, constructed of rubble stone, with the inevitable  
dome. Within it is the tomb of the prophet, 31 feet long. The Moslem  
tradition makes all the prophets and saints exceedingly tall, and their  
height increases in a direct ratio with their antiquity. The tomb, as is  
usually the case, was draped with green cloth in a somewhat tattered  
condition, and sundry rags which had been hung there by the devout.  
To the east of the weli is a Moslem cemetery, overshadowed by a mag-  
nificent *Quercus coccifera*.

The top of Jebel Husha' is divided into three peaks, two of which lie  
along its western brow, overlooking the Ghor, and the other to the north-  
east. From the southernmost of the western peaks (Barometer: B., 26.27;  
W., 26.23; mean, 26.245) is seen the finest panorama of the opposite  
table-land of Palestine obtainable, far finer than that from any part of  
Jebel Neba, including Siaghah. It takes in the heights above Hebron,  
the hill country of Judea, Benjamin, Ephraim, Galilee, and Hermon.  
From the north-eastern peak (Barometer: B., 26.22; W., 26.19; mean,  
26.21) may be seen the whole circle of the Promised Land, including the  
trans-Jordanic region. I noted the Hauran range, Jebel 'Ajlûn, Hermon,  
the mountains of Galilee, Samaria (the cleft of Nablus is exactly  
opposite), Carmel, the hill country of Judea, Moab to Jebel Shihân, and  
the rolling country which forms the watershed between Moab and  
Gilead on the west, and the Syrian desert on the east. From this peak  
the Ghor and the eastern declivity of the Palestine table-land is hidden  
by the two western peaks. Were I seeking for a "Nebo," or "the top of  
a hill," over against Jericho, from the summit of which the most compre-  
hensive as well as the most detailed view of the whole Promised Land  
might be obtained, I would choose Jebel Husha'. I am doubtful whether  
the name Neba may not be an accommodation of the Arabs to the  
wishes of travellers. Certainly nothing but the name entitles it to the  
preference over Jebel Husha' as the site of Moses' last view. The north-  
western peak is precisely the same height by barometer as the south-  
western, and gives the same view with a little of the Dead Sea cut off by  
the other peak, from which it may be seen to its extreme southern end.

The birds of the day were *Lanius collurio*, *Upupa Epops*, *Carduelis  
elegans*, *Sylvia curruca*, *S. atricapilla*, *Anthus campestris*, *Coracias  
garrula*, *Saxicola* sp., *Garrulus glandarius*, *Corvus* sp., *Caccabis chukar*.

6 p.m., Camp.—Barometer: B., 27.2; W., 27.16; mean, 27.18.

Sunday, May 2, Camp, 7 a.m.—Barometer: B., 27.25; W., 27.12;  
mean, 27.185.

Pastor Jemel has gathered about him a considerable congregation of

Protestants in that secluded town, and ministers to them in a most acceptable manner. At his request, after the morning service had been read, I preached to them in Arabic, and a more attentive and devout audience one could not wish to see. As we came out of church a telegram was handed to me; it was a reply to the one I sent to Beirût two days before. Telegrams from Es-Salt go by way of Nabulus, and if they arrive in the evening they cannot be sent until the next day.

After service a great crowd of sick and impotent folk collected in the dispensary, and we spent some hours in caring for their diseases and wounds—a practical exhibition of Christianity worth more than many sermons in the evangelisation of the world.

Pastor Jemel has given special attention to the question of the sites of Pennel and Succoth. He thinks that the former should be at El-Hârât, where there is an ancient ruin, and Succoth at El-Kheimât, which is the Arabic for *Booths = Succoth*. He does not regard either Es-Salt or Gerash as Ramoth-Gilead. He was not prepared to commit himself to any theory as to the site of the latter. He thinks, however, that El-Mastabah, between Es-Salt and Gerash, is Ramoth-Mizpah, which, in his opinion, cannot be Kal'at-er-Rabadh.

In the evening we took a walk up to the castle. Barometer : B., 26·85 ; W., 26·91 ; mean, 26·88.

*Monday, May 3.*—Camp at Es-Salt. Barometer, 7 a.m. : B., 27·23 ; W., 27·14 ; mean, 27·185.

We secured the services of a guide to take us as far as Irbid, at the edge of Haurân. His name was 'Ophnân, which signifies *putrid*. Orientals usually give names having some signification, oftentimes a very singular one. One boy in the Lebanon was called Jidri (*Small-pox*), on account of an epidemic of that disease which prevailed at the time of his birth. While we were waiting for the mules to be loaded a crowd of people gathered around us for medical treatment, and I amused myself and my patients by doing an eye operation for one of them.

Dr. Saba rode with us to the top of the pass over Jebel Husha', where we sat for a few minutes under a large *Quercus coccifera*, and then bade good-bye to civilised society before plunging into the land of Gilead.

Our road down Jebel Husha' lay through groves of the above-mentioned oak, *Arbutus Andrachne*, and *Pinus Halepensis*. The open glades were now green with barley and wheat. Besides our ubiquitous plants, we met with *Fumana Arabica* and *F. glutinosa*, *Arum hygrophilum*, *Helicophyllum crassipes*, *Colladonia crenata*. On reaching the ford of the Jabbok, we met with *Lotus tenuifolius*, *L. lamprocarpus*, *Astragalus epiglottis*, *Typha latifolia*, and *Lythrum Græfferi*. We took a refreshing bath in the Jabbok while awaiting our convoy. This *brook* is a noisy, turbulent stream, which at this season was almost a river.

The climb up the opposite hill proved a stiff one. A little way up we met with *Andropogon hirtus*. Several times the loads were brushed off backwards in the narrow passes of the road, or were pushed away by projecting branches, and had to be untied and carried on the backs of the



muleteers beyond the obstruction. We found nothing of interest on the hillside until near its top, where we fell in with *Plantago lanceolata*, var. *altissima*, nearly 3 feet high, *Orchis sancta*, and *Polygala Mouspeliaca*. Botanically speaking, this was the least productive day of all our journey. Just before entering the village Da'ūd shot a large wild cat, the only one we saw during our journey. Two gazelles were startled by the mules, but made off too quickly to be shot.

The birds of the day were *Turdus merula*, *Accipiter nisus*, *Neophron percnopterus*, *Sylvia atricapilla*, *Corvus monedula*, *Merops apiaster*, *Garrulus glandarius*, and a considerable number of small birds seen, but not shot.

We arrived in camp at Burmah at a little before sunset. Barometer: B., 28·03; W., 27·98; mean, 28·005. Our tents were pitched in a grove of olive trees, by a rivulet which carries water to the village and adjacent fields.

*Tuesday, May 4.*—Camp at Burmah, 6.30 a.m. B., 28·03; W., 27·98; mean, 28·005. We had passed a restless night, the air being hot and dry. We again divided our party, the mules and baggage taking the straight road to 'Ajlūn and we making a detour by Gerash. Our guide, 'Ophūān, proved ignorant of the road, and we lost our way several times. We kept nearly on a level, along the ridge which forms the left flank of the Wadi-Zerka. As we did not follow the road, we often had to force our way through rocky scrubs. We passed pomegranate bushes, *Tulipa Oculus-solis*, *Celtis Australis*, *Calystegia sepium*, *Torilis triradiata*, *Alsine decipiens*, and *Ceratonia siliqua*. After an hour we sighted the wretched village of Jejazi, a little distance below our path. It is difficult for one not accustomed to botanizing on horseback to appreciate the difficulty of collecting in the East. The restive horse, accustomed to go steadily behind his fellows from morning till night, is quite unable to comprehend why his rider should dismount every few minutes while he plucks up some insignificant weed. He tugs at the bridle, neighs at his companions, paws the ground in his impatience, and often, taking advantage of an unguarded moment, breaks away and starts off at a full gallop, leaving the botanist to follow as he may on foot, and pick up his saddle-bags or their contents strewn along the road.

Our morning's ride gave us, in addition to the afore-mentioned, *Anacamptis pyramidalis*, *Ophrys apifera*, *Silene juncea*, *Bongardia chryso-gonum*.

The first view of Gerash is imposing, and the impression grows as one examines the ruins in detail. The left bank of the stream, opposite the ruins, is occupied by a flourishing Circassian village. On the aqueduct bridge I found a *Celsia heterophylla* growing between the chinks of the stones. Its nearest-known neighbours grow near 'Aintab and Marash. Dr. Kay shot a bird on top of one of the columns of the Temple of the Sun. As it fell on the edge of the capital he could only get it by sending a well-aimed rifle ball through the edge of the stone, splintering off a small fragment, which carried the bird clear over the other side of

the column. It fell minus a few feathers, and now graces the College collection ; it proved to be *Merops Ægyptiacus*.

We lunched at the great fountain. While there we received an urgent invitation from the Kaimakam to take a cup of tea with him, but, knowing the delays and ceremonies of such visits, we respectfully declined, and as soon as possible took up our line of march toward Sûf and 'Ajlûn. Soon after leaving Gerash we passed a *Viscum cruciatum*, parasitic on *Crataegus Azarolus*. Presently the wind veered around to the west, and after the parching heat of the forenoon we had a cool and refreshing breeze for the remainder of the day. Soon we found *Trifolium physodes* on a shady bank by the roadside ; then a new *Æthionema* (*Gileadense*, Post), but unfortunately only one specimen, and in a state too advanced for perfect description.

Soon we found a new *Scrophularia* of the scattered sparsely-leaved division (*S. Gileadensis*, Post), a new species well characterised by its large, almost globular flowers, and small scattered, lacinate leaves. After passing Sûf we entered a scrub similar to that of the morning, with plenty of red and white rock rose. Farther on we encountered open groves and grassy glades, in one of which we discovered *Anthriscus sylvestris*. The last hour of our ride was through romantic scenery, at one point through a pass with precipitous moss-covered rocks on either side, crowned with trees and fringed with over-hanging shrubs. From this beautiful glen we emerged rather abruptly into the clearing around the village of 'Ain-Jenneh, opposite which our camp was pitched.

The birds of the day were *Columba livia*, *Turdus merula*, *Turtur auritus*, *Buteo vulgaris*, *Coracias garrula*, *Garrulus glandarius*, *Corvus frugilegus*, *Saxicola œnanthe*, *Alauda cristata*, *Emberiza caesia*, *Monticola cyanus*, *Lanius auriculatus*, *Corvus cornix*, *Philomela lusciniæ*.

Our camp lay in a green meadow, opposite the imposing Kal'at-er-Rabadh. Barometer : B., 27.48 ; W., 27.37 ; mean, 27.425.

*Wednesday, May 5.*—Camp at 'Ain-Jenneh. Barometer : B., 27.44 ; W., 27.33 ; mean, 27.385. The fall in the barometer during the night corresponded with signs of rain in the sky and air. Fearing for our collections we left the tops of our tents standing over our luggage, with strict injunctions to the muleteers not to take them down until we gave the signal from the top of the hill. We then rode up to the castle (Kal'at-er-Rabadh). Our road lay up a rocky hill, wooded with oaks. Under the trees we found *Erysimum scabrum*, new for this region, *Bellis perennis*, *Trifolium Boissieri*, and in the tank near the castle *Ranunculus aquatilis*, var. *submersus*.

The view from the top of the castle (barometer : B., 26.64 ; W., 26.50 ; mean, 26.57) includes a large part of the Dead Sea, *Jebel Husha'*, the whole of the range of Palestine, *Southern Lebanon*, Hermon, all of the Jordan valley except the portion just to the west, which is cut off by a spur of the hill. Galilee is seen with special distinctness. Haurân and Eastern Gilead are not visible from this point. The special interest of

the surrounding region centres in the life of Jephthah and the tragical end of his ill-fated daughter.

The signs of rain diminishing, we sent our guide down to start the cavalcade, but, with the idiosyncrasy of the country, the muleteers and our cook had pre-judged the case, struck the tents, and were already *en route* before we arrived at the foot of the hill. We were soon engaged again in the defile which leads out of the valley, and then turned to the left and pursued our course through a country diversified with clearings and patches of rocky woodland. The flora was in the main identical with that of the rolling uplands of Western Palestine—*Cachrys gonicarpa*, *Leccokia Cretica*, *Trifolium erubescens*, *Medicago pentacycla*, *Synelcosciadium Carmeli*, fine trees of *Juglans regia*. In a pool half-way from 'Ajlûn to Irbid, I found *Alisma natans*, not before noted in the Orient.

Just before reaching the watershed between Gilead and Haurân (barometer: B., 26·22; W., 26·15; mean, 26·185) we passed out of the woodland. This watershed was named for us by a passing Arab El-Musajjah. From this point there is a fine view of *Jebel-ed-Duruz* and the green plain of Haurân. We left with regret the fine park-like scenery and cool air of the uplands of Gilead and dropped gradually into the plain, and encamped late in the evening at Irbid.

The birds of the day were *Ciconia alba*, *Coracias garrula*, *Coturnix communis*, *Caccabis chukar*, *Buteo vulgaris*, *B. ferox*, *Accipiter nisus*, *Neophron percnopterus*, *Anthus campestris*, *Alauda cristata*, *Mercops apiaster*, *Muscicapa grisola*, *Passer domesticus*. Two large rabbits were seen, but escaped the bag.

Irbid is a postal and telegraph station, and we enjoyed once more the opportunity of communicating with our home. Barometer on the tell overlooking the town: B., 28·03; W., 27·93; mean, 27·98.

*Thursday, May 6, 7 a.m.*—Barometer: B., 28; W., 27·95; mean, 27·975. There is little of botanical interest to be found around the villages of the great interior plains of Syria. Immense heaps of garbage, and the accumulated refuse of many centuries harbour nettles and goose-weeds, and a few crucifers and grasses. Having soon disposed of these, we started across the great plain toward Der'ah, the ancient Edrei. Even the ruins here are in ruin, and little is left to occupy the antiquarian. But our march across the plain began to reveal the rich and interesting vegetation of Haurân. *Astragalus oöcephalus*, with white heads as large as a hen's egg, was the most conspicuous plant of the morning. We also collected *A. cruciatus*, and *A. triradiatus*. We passed the large root-leaves of summer Umbellifers, Composites, and Scrophulariaceæ, but too little developed for collection. Six weeks later a bounteous botanical harvest could be reaped of species seldom well represented in herbaria, many of them doubtless new to science.

The caves at Der'ah were walled up, and inaccessible without more labour and time than we cared to spend in their exploration.

After lunching at the fountain, and watching our caravan file up the

opposite hill and disappear over its crest, we spent a half-hour in observing the clamour and confusion at the well. A special study of Scripture history, with reference to the incidents and customs connected with the drawing of water, would furnish material for a moderate volume. An hour now and then spent at an oriental fountain will shed a bright ray of light on these customs, and reproduce many of the incidents. Women were drawing water, men were jostling and incommoding them; there was the *beginning of strife*, and, in fact, its middle and end; there were water jars (pitchers), and buckets (skins with a metal or wooden hoop at the mouth); some of the pitchers were broken at the cistern; there were flocks, and herds, and watering-troughs; we went up and asked for water, and they let down their jars from the shoulder and gave us to drink; there were women and men *sitting* by the well.

After this instructive half-hour we set out for our camp, four hours distant. Interesting plants began to increase in number, and the birds led us many a long chase into the fields. In our ardour we wandered too far to the south, and finally reached a pool where we found fine specimens of *Butomus umbellatus*, and a number of different species of birds, which Dr. Kay and Daûd commenced to shoot. Suddenly a couple of Turkish soldiers appeared over the brow of the hill and rode towards us and asked us with some anxiety whether we had been shooting. They seemed much relieved when we told them yes, and they told us that there were roving bands of Arab robbers in this region, and that it was highly unsafe. They then directed us to the main road, which lay half-an-hour to the north. Crossing the fields we fell in with *Allium Schuberti*, with its eight to ten-inch long rays, a *Linum* near *L. Austriacum*, possibly new *Silybum Marianum*, *Onopordon Illyricum*, and *O. ambiguum*.

The birds of the day were *Ciconia alba*, *Coracias garrulus*, *Coturnix communis*, *Caccabis chukar*, *Buteo fulgens*, *B. ferox*, *Accipiter nisus*, *Nephron perenopterus*, *Anthus campestris*, *Alauda cristata*, *Merops apiaster*, *Muscicapa grisola*, *Passer domesticus*, *Corvus monedula*.

At 6 p.m. we reached our camp at Et-Tayyibah. Our course for the afternoon had lain through Wady-Zeid, except during our detour to the southward. Barometer: B., 28·06; W., 27·95; mean, 28·005.

*Friday, May 7, 7 a.m.*—Barometer: B., 28·08; W., 27·99; mean, 28·045. Only to-day did we fairly realise the wealth of the Haurân flora. In the morning we collected—*Linaria Damascena*, *Reseda Luteola*, *Lotus Gebelia*, *Valerianella truncata*, *V. diodon*, *Asphodeline Damascena*, *Salvia acetabulosa*, *S. molucella*, *Lathyrus Cicera*, which is cultivated under the name of *Jilban*; and in the afternoon—*Astragalus conduplicatus*, *A. brachyceras*, *A. triradiatus*, *A. scorpioides* (new for this region), *A. Alexandrinus*, *Mericarpea vaillantoides*, *Onobrychis Cadmea*, *Teucrium Auraniticum*, *Post* (new), *Smyrniopsis cachroides*, *Cephalaria Syriaca*, var. *sessilis*, *Fritillaria Libanotica*, *Pterocephalus pulverulentus*, *Smyrnum connatum*, and a large number of other plants

heretofore unknown in this region, beside a long list of those heretofore noted, and included in the list at the end of the article.


Our course lay to the south of Wady-Zeid, and the old Roman road which runs through it.

We stopped in the middle of the day to visit the remarkable ruins of Bosrah, and to replenish our exhausted supply of bread. The most interesting object there is the church, cloister, and house of the monk Bahúrâh, from whom Mohammed received so many of his ideas afterward embodied in the Koran.

The birds of the day were substantially the same as those of the day before.

Our camp for the night was pitched at a short distance from the village of Kureyah, the first of the district of Jebel-ed-Durûz. Barometer : B., 26·49 ; W., 26·43 ; mean, 26·46.

*Saturday, May 8.*—Camp at Kureyah, 9 a.m. Barometer : B., 26·48 ; W., 26·41 ; mean, 26·445. In the place of public assembly of Kureyah there is a portico. On one of the stones is the following inscription, in four lines :—

ΑΤΑΘΗΤΥΧΗ  
ΕΚΤΙΣΘΗΗΜΑΛΛΝΕΣΤΟΥΣΡΡ  
ΤΗΣΚΩΛΛΗΣ\*  ΚΠΡΟΝΟΝ  
ΦΛΚΘΡΗΔΙΑΝΟΝΠΠ

We had passed a stone, evidently a tombstone, with an inscription, in the fields between Bosrah and Kureyah, the preceding day, of which the accompanying figure gives the inscription :—

ΛΛΟΜΙ  
ΧΟC  
ΛΛΟΜΙ  
ΧΟΥ

Qurêyah is the first of the villages of Bashan, which we had seen with stone doors and windows in a tolerable state of preservation. In most of the houses of Haurân and the Jebel-ed-Durûz the roofs are composed of slabs of basaltic stone, laid on stone lintels supported by irregular stone pillars. At Qurêyah we discovered *Ferulago Aurantica*, Post.

We broke camp at Qurêyah at 10 a.m., and began a leisurely march to El-Kûfr, at the base of the volcanic cone of Jebel-Kuleib. About an hour above the village we passed a mill. In the wet ground about the mill-race I found *Ranunculus Chærophyllus*, and a little farther on, in the muddy soil along the stream, the new species, *Alopecurus incolacratius*, Post, which seems a connecting link between *Alopecurus* and *Cornucopie*. In the neighbourhood of the brook, I found abundance of *Aira capillaris* and

*Melica Cupani*, and a little further on, in a field, *Trifolium Alsabami*, Post. The road winds through rocky fields and shrubby places. Under a rock, shortly before reaching el-Kûfr, we met with fine specimens of *Anchusa neglecta*, and a variety of *Alkanna Orientalis*, with entire leaves. The only "oaks of Bashan" that we saw during this day were *Q. coceifera*. About el-Kûfr itself we found thickets of *Cratægus Azarolus*, *C. monogyna*, *Pistacia Terebinthus*, *Rhus Coriaria*. Growing from the rocks by the roadside were fine specimens of *Scrophularia variegata*, *M. B. var. Libanotica*. In the fields we found *Salix fragilis*, *Fumaria officinalis*, *Alyssum umbellatum*, *Lithospermum incrassatum*. The plain about el-Kûfr, at the base of the cone of *Jebel Kuleib*, is cut up into quadrangular enclosures by stone fences, which are generally lined by shrubbery. These copses abound in birds.

The bag of the day was *Neophron percnopterus*, *Ciconia alba*, *Lanius collurio*, *Emberiza melanocephala*, *E. miliaria*, *Linota cannabina*, *Hirundo rustica*, *Melanocorypha calandra*, *Sylvia atricapilla*, *S. orpheus*, *Hypolaïs elæica*, *Buteo ferox*, *Oriolus galbula*, *Saxicola œnanthe*, *Saxicola sp.*, *Muscicapa grisola*, *Milvus sp.*, *Coturnix communis*.

We arrived at an early hour in the afternoon, and encamped in a field just outside the village, by the mountain rill which supplies it with water. The proper name of the village is el-Kûfr, which means *unbelief* or *infidelity*, but as this name is one of ill repute in the East, it is softened in ordinary usage to el-Kefr, which signifies *the village*, and is so found in the maps. An hour to the south is the village of Hebrân, which we did not visit.

The latter part of the afternoon was spent in the much-needed work of sorting our specimens and papers, writing up memoranda and labels, and packing such specimens as were sufficiently dry not to require farther attention. The barometer at 7 p.m. stood: B., 25.50; W., 25.43; mean, 25.465. A drizzling rain prevented our doing any outside work, and especially from sunning our specimens, which had not been overhauled during the week of travel.

Our camp was in full view of the cone of *Jebel Kuleib*, of which I made the sketch which appears on the following page.

During the night there was a high wind, but no rain. Sunday, May 9. Notwithstanding the wind of the preceding day, the morning broke clear and bright. Barometer: B., 25.49; W., 28.39; mean, 25.44. The Sheikh of the village invited us to dine with him, but we declined the invitation. Daûd Salîm, however, went to visit some of his Durûz relations at *Sohwat-el-Blât*, a village two hours to the north-west, at the base of *Jebel Kuleib*. He found that they were engaged in the wedding festivities of one of the young men of his family. He gave us the following account of the feast.

After the reception and formalities of salutation, a cup of water was brought to him by an attendant, who also carried a basin, and he was told to pour the water over his right-hand as an act of ablution. A huge platter 6 feet in diameter, made of tinned copper, was then brought in,

on which was piled a mountain of boiled crushed wheat mingled with morsels of boiled meat. When this had been set in place, a dish of melted clarified butter was poured over the wheat until it was quite

SKETCH OF JEBEL KULEIB FROM EL-KUFR.



saturated. Loaves of bread in the form of cakes were placed by the side of the platter, and the guests, rolling up their sleeves, proceeded to help themselves with their fingers, and consumed the provisions, as is usual, in silence. Water and soap were then passed around to the guests, who washed off the remains of their greasy meal, after which coffee and pipes were served. It was not till rather a late hour that he rode back to camp, somewhat fatigued by the ceremonious attentions which he had received. As most of the people of el-Kúfr had gone to the reception, we were unable to assemble them for any religious services in camp.

7 p.m.—Barometer : B., 25·43 ; W., 25·35 ; mean, 25·39.

*Monday, May 10th.*—Barometer, 5.30 a.m. : B., 25·43 ; W., 25·43 ; mean, 25·43. On this, as on several other occasions, the behaviour of our barometers was such as to cause us to doubt the value of the aneroid for accurate determinations, either in meteorology or height of location. The morning broke windy and cloudy, and we felt many misgivings about the journey of the day, especially as to exposing our collections, which, however, we sent around by the short road to Suweidah, while we planned the long journey over Jebel Kuleib and el-Jowalil, to Konawát, and so back to Suweidah.

The first part of the ascent from el-Kúfr to Jebel Kuleib lay through stony fields, with copses of the various shrubs and trees mentioned in the narrative of yesterday. On the way up we collected *Cerastium*

anomalum, *Hypericum scabrum*, *Poterium verrucosum*, *Rosa canina*, *Glancium Arabicum* (a species of which the range extends from Sinai to two days north of Damascus), *Hippomarathrum Boissieri*, *Prangos ferulacea*, then a fine new *Verbascum* (*Qulebicum*, Post) with cob-webby indument, and a tall stiff compound panicle, *Nepeta marrubioides*, *Muscari longipes*, *Bromus Haussknechtii*, and here and there dwarf specimens of *Pistacia Terebinthus* (var. *Palastina*). The ascent of the cone is steep. The declivity is covered with pumice, and furnishes rather an infirm foothold for the feet of either horses or pedestrians. Half way up the main cone is a small shelf, doubtless once a side vent of the ancient volcano. It is now a low truncated cone with an inconsiderable ruin, which we did not examine, at its apex. The crater at the top is nearly filled up with scorice and soil, and lined with a thicket of *Pistacia Terebinthus* and *Quercus coccifera*. We found at and near the top an immature species of *Dianthus* near *D. Libanotis*, *Cotoneaster nummularia*, *Bromus erectus*, and several other plants too immature for determination. The middle or end of June would be the time for the harvest at the top of Kuleib. Passing over the summit and down the northern declivity of the cone we found among the pebbles of pumice *Thalictrum isopyroides* (quite new for the Levant), *Vicia tenuifolia*, *Geranium tuberosum*, *Anthriscus nemorosa* (new for Syria), *Solenanthus amplifolius*, *Lonicera nummularifolia*. Near the base *Astragalus Bethlehemiticus*, *A. Aintabicus*, *A. deinacanthus*, *A. angustifolius*, *Allium Erdelii*, *Myosotis refracta*, *M. hispida*, *Cratægus monogyna*.

The barometer at the top of *Jebel Kuleib* stood : B., 24·37 ; W., 27·43 ; mean, 24·40. The morning was misty and windy, and the air at the top of *Jebel Kuléb* was raw and searching. The road from *Kuleib* to *el-Jowalil* was over a plateau, with rolling volcanic hills rising confusedly on every side, nearly bare of vegetation. *El-Jowalil* (Barometer, 12 a.m. : B., 24·21 ; W., 24·19 ; mean, 24·20), is naked, with the exception of a few scrubby trees, among which we noted an obtuse mucronate-leaved variety of *Pyrus Syriaca*. The peak has lost its crateriform summit, and is not picturesque or striking in any way. Arab encampments were to be seen in several of the plains between the hills, and flocks of cattle and goats were browsing on the scanty herbage. We found *Arabis auriculata*, *Alyssum Szowitsianum*, and *Holosteum liniflorum* on the top. The wind was so strong that our horses could not face it, and we were obliged to climb rather than walk to the summit. We were glad to get down from the bleak mountain top into the valley to the north of the peak. We followed this valley down to *Konawât*.

The clouds, which had been threatening us all day, began to pour down rain just as we entered *Konawât*. We were obliged to make a hasty and unsatisfactory inspection of the magnificent ruins, and found only one botanical specimen of interest, *Melissa officinalis*. From *Konawât* to *Suweidah* we rode in a cold driving rain, and notwithstanding our india-rubber clothing, arrived drenched and chilled to the bone. Fortunately our camp had been pitched before the storm, and our bedding



and collections were dry. We encamped in a field east of the town. We had hardly entered our tent before the teacher of the village school called and politely invited us to dine. In our chilled and wearied state we felt obliged to decline his invitation. In the evening I again tried the telegraph, but with the same result as in all my previous efforts east of the Jordan. We tried in vain to wake up the operator at Damascus, and get the wire through to Beirût. I left my message to go as early as might be in the morning, hoping to receive an answer at Damascus after two days, a hope doomed to disappointment, as our message was two days in arriving. I have known one to be a week in getting from Alexandretta to Beirût.

The barometer at 8.30 p.m. in our camp stood : B., 26.35 ; W., 26.30 ; mean, 26.325.

The birds of the day were *Oriolus galbulus*, *Emberiza miliaria*, *Anthus campestris*, *Coturnix communis*, *Caccabis chukar*, *Turtur auritus*, *Ciconia alba*, *Gyps fulvus*, *Milvus* sp., *Calandrella brachydactyla*, *Alauda cristata*, *Saxicola* sp., *Hirundo rustica*.

*Tuesday, May 11.*—Camp at Suweidah. Barometer, 6.30 a.m. : B., 26.38 ; W., 26.33 ; mean, 26.355. The morning rose misty and cloudy, but the sun gradually dispersed the vapour, and partly dried our well-soaked tent. By 9 o'clock we were on our way. The road at first passes between two stone walls. We found at this point *Stachys Libanotica*, a variety with densely woolly calyx, and an undeveloped *Delphinium*, probably *D. orientale*, J. Gay.

After an hour we passed through the village of 'Atfil, with a ruined temple, and later through Suleim. Near the latter we collected *Nigella oxypetala*, *Ranunculus arvensis*, L., var. *rostratus*, *Lisaa Syriaca*, *Turgenia latifolia*, *Valerianella vesicaria*. Soon after leaving Suleim we began to approach the volcanic cones about Shuhba. Just before reaching the old crater to the south of the village we found on the pumice *Centaurea Trachonitica*, Post, a species near to *C. Hellenica*, but differing in the strigose indument, longer peduncles, and the pappus.

The volcanic centre, by the lava overflow of which the Leja was formed, consists of a series of craters in the neighbourhood of Shuhba. Of these three retain their crateriform shape. The southernmost, El-Gharârat-el-Kiblîyah, is situated south-east of the town. The central is nearly due west. Both of these are black truncated cones, with a funnel-shaped excavation at the top, and sides at an angle of about 30°. The northernmost, Tell-Shîhan, was originally a cone, but the west wall has been forced out by the great lava stream, so that it now resembles a great arm-chair, with its back toward Shuhhba, and its seat toward the lava bed of the Leja, which seems to have flowed principally from this aperture. Around the crater of El-Gharârat-el-Kiblîyah is a wilderness of lava crags and peaks of most grotesque and rugged forms, and almost barren of vegetation. The lonely hollows of this lava waste are the chosen home of partridges. We started a covey of them as we entered the defile which leads up to Shuhba.

The lava stream from these craters is one of the most remarkable in the world. It is of a triangular form, with the apex toward the craters, and the base toward the Jordan valley and Hermon. The sides of this triangle are about thirty miles in length. The surface is like that of a storm-tossed sea, the waves of which have been suddenly turned into stone. Even the foam of the waves is represented in the jagged crests of these grey rock billows. The surface of the Leja is everywhere fissured by transverse crevasses, in the centre of which are the places of defence and concealment which have given the district its name of *el-Leja* = *the Refuge*, and which have enabled the Druzes to defy and often to destroy the Turkish forces sent to reduce them to submission. The lava bed of the Leja is the most recent outpour, and overlies the great bed of volcanic rock which extends from northern Gilead to Aleppo.

The ruins of Shuhba are impressive, and very extensive. Among them I found a new *Nepeta* (*N. Trachonitica*, Post) with fine heads  $1\frac{1}{2}$  inch in length and 1 inch in diameter, and pink flowers.

We crossed the broad shallow wâdi which separates Shuhba from Tell-Shihân. By the side of the torrent, and in its then dry bed, I found *Salvia Russelii*, a stranger not formerly observed south of Aleppo and Aintâb. The flanks of Tell-Shihân are steep, and covered with pumice. We found on the way up *Gypsophila viscosa* (*Prangos meliocarpus*, var. *Trachonitica*, Post) with pruinose leaves and large brown fruits, and at the top, near the well, *Sisymbrium Sophia*. The view from the summit is very extensive, embracing all the Leja, the northern part of Haurân, and the southern part of the Damascus plain, and the opposite ranges of Anti-Lebanon, Hermon, and the mountains of Galilee. The range of Gilead shuts off the view to the south. Barometer at summit, B. 26·27.

After enjoying this unique view, we led our horses down the steep sides of the northern face of the cone, and a little before sunset reached our camp at Umm-*ez-Zeitûn* = the Mother of Olives. Barometer: B., 27·06; W., 27·03; mean, 27·045.

The birds of the day were *Milvius Ægyptiacus*, *Caccabis chukar*, *Coturnix communis*, *Saxicola* sp., *Anthus campestris*, *Accipiter nisus*, *Buteo* sp., *Oriolus galbulus*, *Ciconia alba*, *Turtur auritus*, *Hirundo rustica*, *Passer domesticus*.

*Wednesday, May 12.*—Camp at Umm-*ez-Zeitûn*, 6.30 a.m. Barometer: B., 27·13; W., 27·15; mean, 27·14.

We were annoyed in the morning by the petty thefts of the people of Umm-*ez-Zeitûn*, and were obliged to keep a guard over our portable property, which had not been necessary during all our previous journeys. We were told that thieving ways are quite characteristic of the inhabitants of the Leja, a peculiarity doubtless attributable to their isolated position and political immunities. The number of small articles which they appropriated during the packing of our camp furniture was considerable, and at an earlier stage of our journey would have been much more annoying.

The Leja, with the exception of a little soil formed in the crevasses by the disintegration of the softer sorts of lava, is quite barren. Hence most

of the villages are along its edge, and live by the produce of the fertile plain of older volcanic rock and soil, over which the later desolating stream has flowed. It took us seven hours to pass the eastern side of the great triangle. The villages, mostly in ruins, are all about a quarter of an hour west of the road which separates the barren lava from the wheat-fields. On the way I collected a new *Astragalus* (*A. Trachomiticus*, Post) near Sowarat-el-Kebirah, and in a wheat-field, to the right of the road near Sowarat-es-Saghirah, *Malcolmia Aurantica*, Post, unfortunately a single and undeveloped specimen. Otherwise the day yielded nothing of special interest except *Allium Sindjarense*, and *A. Hierochuntinum*, until we reached Brak. In crossing the scorched lava beds near that place, I found a well-pronounced variety of *Thymus Syriaca*, which is described among the new plants. Professor Oliver, of Kew, prefers to regard it and *T. Syriaca*, Boiss., as varieties of *T. lanceolata*, Sm. At Brak is a large stone building, erected by the Turkish Government as barracks for the soldiers now quartered there to overawe the Druzes and Arabs of the Leja. The barometer at 8.30 p.m. was B., 27.95; W., 27.89; mean, 27.92.

The birds of the day were *Corvus monedula*, *Saxicola* sp., *Pterocles Senegalus*, *Alauda cristata*, *Anthus campestris*, *Emberiza miliaria*, *Passer domesticus*, *Saxicola oenanthe*.

*Thursday, May 13.*—Camp at Brak, 5 a.m. Barometer: B., 27.97; W., 27.88; mean, 27.925.

While the muleteers were striking camp at an early hour in the morning, I started alone across the plain in the direction of Damascus. The air was fresh, and my jaded horse was able to gallop to the base of the hills which bound the plateau of Haurán. To the left of the road, on the flanks of Hermon, lay the rocky hills covered with *Poterium spinosum*, from the Arabic name of which the district takes its name, Aklin-el-Billán. The look back over the table-land, before entering the chain of hills which separates it from the Damascus plain, is extensive. Beyond the green foreground of the wheat-fields of Brak lies the black, rugged, triangular lava sea of the Leja, and far away at its eastern angle the three craters from which it issued. Still more distant is the jagged range of the *Jebel-ed-Durûz*, with its numerous volcanic cones, ending in the striking peak of *Jebel Kuleib*. The plain of Haurán could be distinguished from the intervening Leja by its misty veil, which hid its greenness.

Soon after entering the range of hills, I passed a rounded headland to the left, with a single tree near its top. So striking an object as a tree in this desolate region is sure not to escape the Arabs, who have named the hill *Tell-esh-Shajar* (Hill of the Tree). I did not turn aside to identify it, but suppose from its shape that it must be one of the many oaks (*Qu. coccifera*), which form so striking a feature of the landscapes of Syria and Palestine.

The plants of this region are few. I found *Lepidium Aucheri* near *Nedjah*. *Haplophyllum Buxbaumii* covers the stony fields with a mass of yellow waving flowers. The road, however, passes most of the way through the stony border of the plain, and not until arriving in the

irrigated gardens near Bab-Allah did I find any considerable number of plants. As it was not my object to include in this sketch the flora of Damascus, I did not stop to collect or record the numerous plants growing near the city. At 11.30, I arrived at the Victoria Hotel, where I lunched and remained until the caravan came up, in the middle of the afternoon. Barometer, 12 m.: B., 27.65; W., 27.67; mean, 27.66. Dr. Kay and myself took the night coach to Beirût, and arrived the following morning, after an absence of twenty-four days. Mr. Daïd Salim assumed charge of the caravan, which arrived safely Monday evening, the 17th, without accident or injury to the collections.

The birds of the last day between Brak and Damascus were *Emberiza melanocephala*, *E. cesia*, *Aëdon galactodes*, *Pterocles Senegalus*, *Alauda cristata*, *Anthus campestris*, *Corvus cornix*, *Corvus sp.*, *Turtur auritus*, *T. sp.*, *Passer sp.*

It will be seen from the foregoing narrative that the flora of Eastern Palestine differs from that of Palestine proper, in the addition of a large number of the plants of the table-land of Damascus. The considerable number (fifteen species) of new plants, besides many new varieties of well-known species, discovered in so short a journey, encourage the hope that more comprehensive and repeated tours will add very considerably to our list of Oriental plants, as well as contribute to the definition of their range and distribution.

Of the barometric observations, a table of which is appended, I can only remark that it furnishes another illustration of the idiosyncrasies of aneroids, and the inaccuracy of this mode of determining altitudes.

TABLE OF BAROMETRIC OBSERVATIONS.

Date.	Hour.	Place.	Browning.	Watson.
April 19	5 p.m.	On boat, going to steamer (Beirût) .. ..	30.08	29.90
" 20	7.30 a.m.	On boat, going to shore (Jaffa)	30.05	29.80
" 20	10.30 p.m.	Second storey of Mediterranean Hotel, Jerusalem .. ..	27.37	27.20
" 21	7 a.m.	Do. do. do.	27.39	27.19
" 22	7 a.m.	Do. do. do.	27.36	27.12
" 23	7 a.m.	Do. do. do.	27.38	27.16
" 23	7.30 p.m.	New Bridge, Jordan Valley ..	31.60	31.50
" 24	6 a.m.	Do. do. ..	31.55	31.58
" 24	9 p.m.	Tell el Hammâm, Jordan Valley .. ..	30.66	30.70
" 25	7 a.m.	Do. do. do.	30.80	30.75
" 25	7.30 p.m.	Do. do. do.	30.63	30.65
" 26	6.30 a.m.	Do. do. do.	30.72	30.68
" 26	12 m.	'Ayûn Mûsa, at level of cave	28.50	—
" 26	12 m.	'Ayûn Mûsa, upper fountain	28.45	28.40
" 26	1.20 p.m.	Jebel Siâghah, ruins .. ..	27.68	27.65
" 26	2 p.m.	Jebel Siâghah, south peak ..	27.66	27.63
" 26	3 p.m.	Jebel Neba, highest point ..	27.26	27.28
" 26	6.30 p.m.	Ma'in, in camp by cistern ..	27.14	27.06
" 27	6 a.m.	Do. do. ..	27.16	27.05

Date.	Hour.	Place.	Browning.	Watson.
April 27	12 m.	Callirrhoë, chief spring ..	30·20	30·28
" 27	8 p.m.	Camp at Ma'in.. ..	27·15	27·05
" 28	7 a.m.	Do. .. ..	27·16	27·13
" 28	7.30 a.m.	Top of ruins at Ma'in.. ..	27·10	27·03
" 28	7.30 p.m.	Ain Hesbân, on the stream near the road .. ..	27·56	27·58
" 29	6 a.m.	Do. do. do. .. ..	27·51	27·48
" 29	11.30 a.m.	Kusr-el-'Abd .. ..	28·23	28·27
" 29	8 p.m.	Camp on hill W.S.W. of 'Ammân .. ..	27·05	27·00
" 30	7 a.m.	Do. do. do. .. ..	27·20	27·15
" 30	9 a.m.	At level of highest house in Ammân .. ..	27·33	27·33
" 30	6 p.m.	Camp at Es-Salt, on platform, below Latin cemetery ..	27·23	27·20
May 1	6 a.m.	Do. do. do. .. ..	27·27	27·20
" 1	1.30 p.m.	Height of the Wely on Jebel Husha' .. ..	26·48	26·43
" 1	3 p.m.	Height of the northern peak on Jebel Husha' .. ..	26·22	26·19
" 1	4 p.m.	Height of the southern peak on Jebel Husha' .. ..	26·27	26·22
" 1	6 p.m.	Camp at Es-Salt .. ..	27·20	27·16
" 2	7 a.m.	Do. .. ..	27·25	27·12
" 2	7 p.m.	Castle of Es-Salt .. ..	26·85	26·91
" 3	7 a.m.	Camp at Es-Salt .. ..	27·23	27·14
" 3	7.30 p.m.	Camp at Burmah .. ..	28·03	27·98
" 4	6.30 a.m.	Do. .. ..	28·03	27·98
" 4	7 p.m.	Camp at 'Ajlûn .. ..	27·48	27·37
" 5	7 a.m.	Do. .. ..	27·44	27·33
" 5	8 a.m.	Top of Ka'at-er-Rabadh ..	26·64	26·50
" 5	12 m.	Height of land on road from 'Ajlûn to El-Husn.. ..	26·22	26·15
" 5	9 p.m.	Camp at Irbid .. ..	28·03	27·93
" 6	7 a.m.	Do. .. ..	28·00	27·95
" 6	6.30 p.m.	Camp at Tayyibah .. ..	28·06	27·95
" 7	7 a.m.	Do. .. ..	28·08	27·90
" 7	8 p.m.	Camp at Kurciyah .. ..	26·49	26·43
" 8	9 a.m.	Do. .. ..	26·48	26·41
" 8	7 p.m.	Camp at El-Kufr .. ..	25·50	25·43
" 9	7.30 a.m.	Do. .. ..	25·49	25·39
" 9	7 p.m.	Do. .. ..	25·43	25·35
" 10	5.30 a.m.	Do. .. ..	25·43	25·43
" 10	9 a.m.	Top of Jebel-Kuleib .. ..	24·37	24·43
" 10	12 m.	Top of Jebel-el-Jowailîl ..	24·21	24·19
" 10	8.30 p.m.	In camp at Suweidah .. ..	26·35	26·30
" 11	8 a.m.	Do. do. .. ..	26·38	26·33
" 11	4 p.m.	Top of Tell Shihân .. ..	26·27	—
" 11	7 p.m.	Camp at Umm-az-Zeitûn ..	27·06	27·03
" 12	6.30 a.m.	Do. do. .. ..	27·13	27·05
" 12	8.30 p.m.	Camp at Brak .. ..	27·05	27·89
" 13	5 a.m.	Do. .. ..	27·07	27·88
" 13	12 m.	Damascus, second storey Hotel Victoria .. ..	27·05	27·67

LIST OF PLANTS collected (or, in case of the more familiar species, observed) by the Author during a journey from April 23 to May 11, 1886, principally in Moab, Gilead, and Haurân. As the number of plants not heretofore noted in this region so largely exceeds the rest, they are not generally indicated. Plants found west of the Jordan are only mentioned if new in the region specified; new species and varieties are indicated by italics. The new species and varieties are published in the Transactions of the Linnæan Society for 1888.

## I.—RANUNCULACEÆ.

1. *Clematis cirrhosa*, L. Thickets, Gilead.
2. *Thalictrum isopyroides*, C. A. M. Among pumice gravel on the northern slope of the cone of Jebel Kuleib.
3. *Adonis Palæstina*, Boiss. Plain of Sharon; table-land of Moab.
4. *Aleppica*, Boiss. Plain of Sharon.
5. *autumnalis*, L. Common in Moab, Gilead, and Haurân.
6. *æstivalis*, L. Ascent from Jordan valley to Moab, Haurân.
7. *var. squarrosa*, Boiss, Haurân.
8. *dentata*, Del., *var. subinermis*, Boiss. Haurân.
9. *Ranunculus aquatilis*, L., *var. heterophyllus*, D. C. Haurân.
10. *var. submersus*, Gr. et Godr. Gilead, Haurân.
11. *calthæfolius*, Jord. Haurân.
12. *Damascenus*, Boiss. et Gaill. Haurân.
13. *Asiaticus*, L. Moab, Gilead.
14. *Chærophyllus*, L. Haurân.
15. *myriophyllus*, Russ. Moab, Gilead, Haurân.
16. *var. Hierosolymitanus* (*R. Hierosolymitanus*, Boiss). Moab, Gilead.
17. *lomatocarpus*, F. and M. Everywhere.
18. *arvensis*, L., *var. rostratus*, Post. Haurân.
19. *Ceratocephalus falcatus*, Pers., *var. exscapus*, Boiss. Haurân.
20. *Nigella oxypetala*, Boiss. Between Suweidah and Shuhbah, Haurân.
21. *ciliaris*, D. C. 'Arâq-el-Emfr.
22. *Delphinium* sp., probably *Orientalis*, J. Gay (immature). Suweidah, Haurân.

## II.—BERBERIDACEÆ.

23. *Leontice leontopetalum*, L. Gilead, Haurân.
24. *Bongardia Chrysogonum*, L. Gilead.

## III.—PAPAVERACEÆ.

25. *Papaver Rhæas*, L., var. *Syriacum*, Boiss. Moab, Gilead, Haurân. This species includes *P. stylatum*, Boiss. et Bal., *P. umbonatum*, Boiss., and *P. clavatum*, Boiss. et Haussk., and probably *P. commutatum*, F. et M., and *P. polytrichum*, Boiss. et Ky., all of which have intermediate forms connecting the series.
26. *Argemone*, L. Moab, Gilead, Haurân, Damascus.
27. *Rœmeria hybrida*, L. Moab, Gilead, Haurân.
28. *Glaucium corniculatum*, L. Khan Hathrurah, between Jerusalem and Jericho.
29. *Arabicum*, Fresen. Southern slope of Jebel Kuleib ; plain of Damascus as far as Deir 'Atîyah. Heretofore only observed in Sinai.
30. *grandiflorum*, Boiss. et Huet. Haurân.
31. *Hypecoium procumbens*, L. Moab, Gilead, Haurân.  
var. *grandiflorum* (*H. grandiflorum*, Benth.).  
Gilead.

## IV.—FUMARIACEÆ.

32. *Ceratocarpus Palæstina*, Boiss. Gilead.
33. *Fumaria officinalis*, L. Fields near El-Kufr, Jebel Kuleib.
34. *micrantha*, Lag. Moab, Gilead.
35. *parviflora*, Lam. Ascent from Jordan to Moab.

## V.—CRUCIFERÆ.

36. *Matthiola bicornis*, Sibth et Sm. Khan Hathrurah, Shittim plain.
37. *oxyceas*, D. C. Shittim plain, Callirrhœ. A very variable species. Farther study will probably cause it and *M. livida*, Del., to be considered as varieties of *M. bicornis*.
38. *Nasturtium officinale*, R. Br. Wet places ; Moab, Gilead, Haurân.
39. *Arabis auriculata*, Lam. Top of Jebel-el-Jowailîl.
40. *Notoceras Canariense*, R. Br. Shittim plain ; lower slopes of Nebo.
41. *Hesperis pendula*, D. C. Woods south of Es-Salt. Prof. Paine notes *H. secundiflora*, Boiss. et Sprun, in the neighbourhood of Jebel Husha', and in the Wady-ez-Zerka. The writer, after much search, failed to find this species either in Gilead or Moab.
42. *Malcolmia Africana*, L. Plain of Damascus.
43. *Auranitica*, Post. In a wheat-field by the roadside, east of Sowarat-el-Saghîri.
44. *torulosa*, Desf. Table-land of Moab and northward.
45. var. *leiocarpa*, Boiss. Haurân.
46. *crenulata*, D. C. Haurân.

47. *Sisymbrium pumilum*, Steph. Wall of Jerusalem near Tower of David ; Haurân.
48. *Sophia*, L. Haurân ; top of Tell Shihân, Wady-el-Karn, Anti-Lebanon.
49. *Irio*, L. Moab, Jordan valley.
50. *Columnæ*, Jacq. Gilead, Haurân, Wady-el-Karn.
51. *crysimoides*, Desf. At the bottom of the descent from Jerusalem to Jericho, at the edge of the plain.
52. *Damascenum*, Boiss. et Gaill. Wady-el-Karn.
53. *officinale*, L. Everywhere.
54. *runcinatum*, Lag. Haurân.
55. *Erysimum repandum*, L. Moab, Gilead.
56. var. *rigidum*, Boiss. Moab, Gilead, Haurân.
57. *scabrum*, D. C. Kal'at-er-Rabadh, Gilead.
58. *crassipes*, C. A. M. Mountains and table-land of Moab and Gilead.
59. *Brassica Tournefortii*, Gou. Flanks of Nebo, Moab.
60. *adpressa*, Mœnch (*Hirschfeldia adpressa*, Mœnch in Boiss. Fl. Or. I. 390). Common throughout.
61. *Sinapis arvensis*, L. Moab, Gilead.
62. var. *Orientalis*, Boiss. Haurân.
63. *alba*, L. Moab, Gilead, Haurân.
64. *Diplotaxis viminea*, L., var. *foliosa*, Post. Plain of Sharon.
65. var. *integrifolia*, Boiss. Khan Hathrûrah.
66. Harra, Forsk. Khan Hathrûrah, and thence to Jordan plain. In all the hot wadies opening into valley of Jordan and Dead Sea.
67. var. *glabra*, Post. Wady-el-Karn.
68. *erucoides*, L. Moab, Gilead, Haurân.
69. *Eruca sativa*, L. Moab, Gilead, Haurân. This species has, in Syria and Palestine, light-yellow lilac veined petals. *E. Cappadocica*, Boiss., would seem, then, to be a variety with somewhat longer pods and larger seeds. The foliage of *E. sativa* varies, as does that of many crucifers.
70. *Carrichtera Vella*, D. C. Jabhok valley ; flanks of Nebo ; valleys on both sides of Dead Sea and Jordan.
71. *Fibigia clypeata*, L., var. *eriocarpa* (*F. eriocarpa*, D. C.). Jebel Husha'.
72. *Alyssum umbellatum*, Desv. Roadside in El-Kûfr.
73. *Szowitsianum*, F. et M. Jebel-el-Jawailil.
74. *campestre*, L. *genuinum*, Boiss. Gilead, Haurân.
75. *aureum*, Fenzl. Haurân.
76. *meniocoides*, Boiss. Damascus plain.
77. *Capsella Bursa-Pastoris*, L. Everywhere.
78. *Lepidium sativum*, L. Walls of Jerusalem.
79. *spinescens*, D. C. Gilead, Haurân.
80. *Aucheri*. Between Nedjha and Tell-esh-Shajar, on the road between Damascus and Brak.



81. *Lepidium Draba*, L. Moab, Haurân.  
 82. *Chalepense*, L. Gilead. Probably a narrow fruited variety of the last.  
 83. *crassifolium*, W. K. Merj of Damascus.  
 84. *Æthionema heterocarpum*, J. Gay. Gilead.  
 85. *Gileadense*, Post. In a thicket by the roadside at the edge of the table-land, two hours from Es-Salt.  
 86. *Biscutella Columnæ*, Ten. Moab, Gilead, Haurân.  
 87. *Peltaria angustifolia*, D. C. Jebel Kuleib, Haurân.  
 88. *Clypeola jonthlaspi*, L. Gilead.  
 89. *Isatis Aleppica*, Scop. Moab, Gilead, Haurân.  
 90. *Neslia paniculata*, Desv. Moab, Gilead, Haurân.  
 91. *Texiera glastifolia*. Haurân, Wady-el-Karn.  
 92. *Calepina Corvini*, All. Ped. Moab, Gilead, Haurân.  
 93. *Ochthodium Ægyptiacum*, L. Moab, Gilead, Haurân.  
 94. *Crambe Orientalis*, L. Haurân.  
 95. *Hispanica*, L. Moab, Gilead.  
 96. *Rapistrum rugosum*, L. Moab, Gilead, Haurân.  
 97. *Enarthrocarpus strangulatus*, Boiss. Wady-Zerka-Ma'in.  
 98. *Erucaria Aleppica*, Gaertn. Moab, Gilead, Haurân.  
 99. *var. horizontalis*, Post. Pods horizontal. Nedjha, Damascus plain.  
 100. *Raphanus sativus*, L. Everywhere.

## VI.—CAPPARIDEÆ.

101. *Cleome trinervia*, Fresen. On the steep hill side, going from Ma'in down to Callirrhoë.  
 102. *Capparis spinosa*, L. Hanging from face of cliffs and walls, common.

## VII.—RESEDACEÆ.

103. *Ochradenus baccatus*, Del. Valley of Zerka-Ma'in, about Callirrhoë.  
 104. *Reseda alba*, L. Wady-Kelt, Moab, Haurân.  
 105. *lutea*, L. Moab, Gilead, Haurân.  
 106. *muricata*, Presl. Wady-Kelt.  
 107. *Luteola*, L. Haurân.

## VIII.—CISTINEÆ.

108. *Cistus villosus*, L. Mountains of Moab and Gilead.  
 109. *salviifolius*, L. Mountains of Moab and Gilead.  
 110. *Helianthemum Niloticum*, L. Gilead.  
 111. *var. microcarpum*, Cors. Lower Jordan.  
 112. *salicifolium*, L. Moab, Gilead, Haurân.  
 113. *Ægyptiacum*, L. Jerusalem.

114. *Helianthemum Kahiricum*, Del. Wadies about Dead Sea:  
 115.                   *var. depauperatum*, Post. Callirrhoë.  
 116.                   Lippii, L. Callirrhoë.  
 117.                   *var. micranthum*, Boiss. Callirrhoë.  
 118.                   *vesicarium*, Boiss. Mountains of Moab.  
 119. *Fumana Arabica*, L. Moab, Gilead.  
 120.                   *glutinosa*, L. Moab, Gilead.

## IX.—POLYGALEÆ.

121. *Polygala Monspeliaca*, L. Grassy places, Gilead.

## X.—FRANKENIACEÆ.

122. *Frankenia pulverulenta*, L. Tell-el-Hammâm, Callirrhoë.

## XI.—SILENEÆ.

123. *Dianthus multipunctatus*, Ser. Flanks of Nebo.  
 124.                   *var. pruinosis*, Post. On hot rocks below Khan Hath-  
                           rûrah in Wadi-Kelt.  
 125.                   *Auraniticus*, Post. Haurân, between Irbid and Bosrah.  
 126.                   sp. probably *Libanotis*, Labill., but without flowers. At  
                           the top of the cone of Jebel Kuleib.  
 126A. *Gypsophila Rokejeka*, Del. Hot rocks on road from Khan Hath-  
                           rûrah to Jordan plain; Haurân.  
 127.                   *Damascena*, Boiss. Table-land of Moab.  
 128.                   *viscosa*, Murr. Tell Shihân.  
 129. *Saponaria Vaccaria*, L. Everywhere.  
 130.                   *oxyodonta*, Boiss. Fields, Es-Salt.  
 131. *Silene conoidea*, L. Nebo, Es-Salt.  
 132.                   *macrodonta*, Boiss. Tell-er-Ramé, Nebo.  
 133.                   *muscipula*, L. Plain of Sharon.  
 134.                   *goniocalyx*, Boiss. 'Ajlûn.  
 135.                   *racemosa*, Otth. Wall of Jerusalem.  
 136.                   *apetala*, Willd. Wall of Jerusalem.  
 137.                   *hirsuta*, Lag., *var. Sibthorpiana*, Boiss. Flanks of Nebo. This  
                           plant may be distinguished from *T. hispida*, Desf., by  
                           the fact that it has no alar flowers, that its calyx is not  
                           contracted in fruit, and the calyx teeth are obtuse.  
 138.                   *Behen*, L. Plain of Sharon, Gilead, Moab.  
 139.                   *Palästina*, Boiss. Plain of Sharon.  
 140.                   *Oliveriana*, Otth. Es-Salt, el-Ghor, Plain of Moab.  
 141.                   *bipartita*, Desf. Everywhere.  
 142.                   *Atocion*, Murr. Moab, Gilead, Haurân.  
 143.                   *inflata*, Sm. Everywhere.

144. *Silene longipetala*, Vent. Jebel Kuleib, Jebel Husha'.  
 145.         *juncea*, Sibth. Gilead.  
 146. *Tunica pachygonia*, F. et M., var. *scabra* (T. Arabica, Boiss). Shittim plain, between Nimrîn and Tell-el-Hammâm. This species is also found about Aintâb. The intermediate forms are such as to make T. Arabica an untenable species.

## XII.—ALSINEÆ.

147. *Holosteum liniflorum*, Stev. Flanks and top of El-Jowailîl.  
 148. *Cerastium dichotomum*, L. Gilead, Haurân.  
 149.         *anomalum*, W. K. Jebel Kuleib.  
 150.         *vulgatum*, L. Moab, Gilead.  
 151. *Stellaria media*, L. Everywhere.  
 152. *Arenaria leptoclados*, Rechb. Gilead.  
 153.         *graveolens*, Schreb, var. *minuta*. Jebel 'Ajlûn.  
 154. *Alsine decipiens*, Fenzl. Moab, Gilead.  
 155.         *Smithii*, Fenzl. Jubel Kuleib.  
 156.         *pieta*, S. et Sm. Nebo, near ruins of Siâghah ; Haurân.  
 157.         *tenuifolia*, L. Common.  
 158. *Spergula arvensis*, L. El-Ghor.  
 159.         *diandra*, Guss. El-Ghor, Wilderness of Judea.

## XIII.—PARONYCHIEÆ.

160. *Herniaria cinerea*, D. C. Gilead, El-Ghor.  
 161.         *hemistemon*, J. Gay. Khan Hathrûrah.  
 162. *Paronychia argentea*, L. Common throughout.  
 163.         *nivea*, D. Moab, Gilead.  
 164.         var. *obtusata*, Post. Ain-Hesban to Ammân.  
 165.         var. *attenuata*, Post. Ain-Hesban to Ammân.  
 166. *Gymnocarpum fruticosum*, Pers. Wilderness of Judea.  
 167. *Pteranthus echinatus*, Desf. Wilderness of Judea.

## XIV.—TAMARISCINEÆ.

168. *Tamarix tetragyna*, Ehr. Damascus.  
 169.         *Jordanis*, Boiss. At Pilgrim's bathing place, and along the Jordan.  
 170.         *mannifera*, Ehr. Callirrhoë.  
 171. *Reaumuria Palaestina*, Boiss. Wilderness of Judea, Callirrhoë.

## XV.—HYPERICINEÆ.

172. *Hypericum scrabrum*, L. Jebel Kuleib.  
 173.         *crispum*, L. Jebel Husha'.

## XVI.—MALVACEÆ.

174. *Alcea acaulis*, Cavan. Moab, Gilead, Haurân.  
 175.       *setosa*, Boiss. Moab, Gilead.  
 176.       *rufescens*, Boiss. On the road from Ma'in to Callirrhoë.  
 177. *Malva rotundifolia*, L. Everywhere.  
 178.       *Cretica*, Cavan. Moab.  
 179.       *parviflora*, L. New bridge over the Jordan.  
 180.       *oxyloba*, Boiss. New bridge over the Jordan.  
 181.       *sylvestris*, L. Gilead.  
 182.       *var. oxyloba*, Post. Tell-er-Ramé. A specimen of this  
           variety is also found in Kew Herbarium.  
 183. *Malvella Sherardiana*, L. Gilead, Haurân.

## XVII.—LINACEÆ.

184. *Linum strictum*, L. Moab, Gilead.  
 185.       *nodiflorum*, L. Moab, Gilead.  
 186.       *Syriacum*, Boiss. et Gaill. Moab, Gilead.  
 187.       *pubescens*, Russ. Moab, Gilead.  
 188.       *sp. near Austriacum*. Haurân.

## XVIII.—ZYGOPHYLLÆ.

189. *Nitraria tridentata*, Desf. El-Ghor.  
 190. *Zygophyllum dumosum*, Boiss. Lower part of road from Khan  
       Hathrûrah to el-Ghor.  
 191. *Fagonia glutinosa*, Del. Callirrhoë.  
 192.       *grandiflora*, Boiss. Lower part of Wilderness of Judea.  
 193.       *mollis*, Del. Between Mar Saba and Dead Sea.  
 194. *Peganum Harmala*, L. Ascent from el-Ghor.

## XIX.—GERANIACEÆ.

195. *Geranium tuberosum*, L. Ascent from el-Ghor to Nebo.  
 196.       *rotundifolium*, L. General.  
 197.       *molle*, L. General.  
 198.       *lucidum*, L. Ascent from el-Ghor to Nebo.  
 199. *Erodium Romanum*, L. 'Ammân.  
 200.       *dissectum*, L. Moab.  
 201.       *ciutarium*, L. Moab, Gilead, Haurân.  
 202.       *cichonium*, L. Haurân.  
 203.       *gruinum*, L. Moab, Gilead.  
 204.       *laciniatum*, Cav. Flanks of Nebo.  
 205.       *moschatum*, L. Moab.

206. *Erodium malacoides*, L. Gilead.  
 207.         *hirtum*, Forsk. Hot valleys debouching into Dead Sea.  
 208.         *glaucophyllum*, Ait. Near Khan Hathrârah. The size of  
           the leaves in this species varies in different specimens  
           from 5 lines to 3 inches long.

## XX.—RUTACEÆ.

209. *Haplophyllum Buxbaumii*, Poir. Ascent to Nebo, Haurân.  
 210.         var. *corymbulosum*, Boiss. Shittim Plain.  
 211.         *longifolium*, Boiss. Hot rocks on both flanks of  
           el-Ghor.

## XXI.—SIMARUBEÆ.

212. *Balanites Ægyptiaca*, Del. Plain of Jericho.

## XXII.—TEREBINTHACEÆ.

213. *Rhus Coriaria*, L. Jebel Husha', Jebel-ed-Durûz.  
 214. *Pistacia Terebinthus*, L., var. *Palæstina* (P. *Palæstina*, Boiss).  
       Moab, Gilead, Jebel-ed-Durûz.

## XXIII.—RHAMNEÆ.

215. *Zizyphus Spina-Christi*, L. El-Ghor on both sides of Jordan.  
 216. *Rhamnus punctata*, Boiss. Moab, Gilead.  
       Palæstina, Boiss. Ascent to Moab.

## XXIV.—MORINGEÆ.

217. *Moringa aptera*, Gerta. Callirhoë, on the road to Ma'in, a few  
       hundred yards from the springs. I met with only one tree, and  
       close by it a tree of *Acacia tortilis*.

## XXV.—LEGUMINOSEÆ.

218. *Anagyris fœtida*, L. Woods south of Es-Salt.  
 219. *Retama Retam*, Forsk. El-Ghor, and the lower mountains flank-  
       ing it.  
 220. *Ononis Natrix*, L. Moab, Gilead.  
 221.         var. *stenophylla*, Boiss. Moab.  
 222.         var. *laxiuscula*, Post. In pumice near Shuûs,  
           Haurân.  
 223.         *Antiquorum*, L. Ascent to Nebo.

224. *Ononis ornithopodoides*, L. Khan Hathrûrah.  
 225.       *biflora*, Desf. Ma'in.  
 226.       *pubescens*, L. Gilead.  
 227.       *hirta*, Desf. Haurân, Plain of Sharon.  
 228.       *serrata*, Forsk. Ma'in.  
 229. *Calycotome villosa*, L. Moab, Gilead.  
 230. *Trigonella astroites*, F. et M. Haurân.  
 231.       *spinosa*, L. Moab.  
 232.       *monantha*, C. A. M. Haurân.  
 233. *Trigonella Cole-Syriaca*, Boiss. Haurân, var. with pods constricted  
       between the seeds.  
 234.       *Hieroslymitana*, Boiss. Moab, Gilead.  
 235.       *Kotschyi*, Fenzl. Moab, Gilead.  
 236.       *spicata*, L. Moab, Gilead.  
 237.       *Arabica*, Del. El-Ghor.  
 238.       *radiata*, L. Haurân.  
 239. *Medicago scutellata*, All. Moab, Haurân.  
 240.       *rotata*, Boiss. Ma'in to Callirrhöë.  
 241.       *denticulata*, Willd. Gilead, Haurân.  
 242.       *pentacycla*, D. C. Gilead.  
 243.       *tuberculata*, Willd. Haurân.  
 244.       *coronata*, Lam. Moab.  
 245. *Trifolium arvense*, L. Haurân.  
 246.       *stellatum*, L. Flanks of Nebo.  
 247.       *angustifolium*, L. Moab, Gilead, Haurân.  
 248.       *Haussknechtii*, Boiss. Haurân.  
 249.       *Alsoulami*, Post. In a field near the mill above Kureiyah,  
       on the road to El-Kûfr, at the base of Jebel-ed-Durûz.  
 250.       *scutatum*, Boiss. Moab.  
 251.       *clypeatum*, L. Gilead.  
 252.       *scabrum*, L. Gilead.  
 253.       *pilulare*, Boiss. Moab, Gilead, Haurân.  
 254.       *globosum*, L. Haurân.  
 255.       *physodes*, Stev. Gilead, Jebel-ed-Durûz.  
 256.       *spumosum*, L. Haurân.  
 257.       *resupinatum*, L. Common throughout.  
 258.       *tomentosum*, L. Ascent from el-Ghor to Nebo.  
 259.       *xerocephalum*, Fenzl. Jebel-el-Durûz.  
 260.       *repens*, L. Moab.  
 261.       *Boissieri*, Guss. 'Ajlân, Gilead.  
 262.       *erubescens*, Fenzl. Gilead.  
 263.       *procumbens*, L. Gilead.  
 264. *Hymenocarpus circinnatus*, L. Common throughout.  
 265. *Lotus Creticus*, L. Gilead.  
 266.       *tenuifolius*, Rehb. Ford of Jabbok.  
 267.       *lamprocarpus*, Boiss. Ford of Jabbok.  
 268.       *Gebelia*, Vent. *genuinus*, Boiss. Haurân.

269. *Lotus conimbricencis*, Brot. Moab.  
 270.         *peregrinus*, L. Mountains of Moab.  
 271. *Tetragonolobus Palestina*, Boiss. Moab. This species should probably rank only as a variety of *T. purpureus*, Mœnch.  
 272. *Psoralea bituminosa*, L. Moab, Gilead.  
 273. *Glycyrrhiza glabra*, L., var. *violacea*, Boiss. New bridge of the Jordan.  
 274. *Astragalus epiglottis*, L. Ford of Jabbok.  
 275.         *tribuloides*, Del. Salihîyah, Damascus.  
 276.         *cruciatus*, Link. Moab, Gilead, Haurân.  
 277.         *triradiatus*, Bge. Haurân.  
 278.         *Damascenus*, Boiss. et Gaill. Haurân.  
 279.         *callichroüs*, Boiss. Khan Hathrûrah. Plain of Moab.  
 280.         *conduplicatus*, Bertol. Haurân.  
 281.         *brachyceras*, Ledeb. Moab.  
 282.         *hamosus*. Moab.  
 283.         *scorpiodes*. In wheat-fields between Bosrah and Kureiyah, Haurân.  
 284.         *cretaceus*, Boiss. et Ky. Woods near Es-Salt.  
 285.         *vexillaris*, Boiss. Bosrah to Kureiyah, near the latter, in a field by the path.  
 286.         *Christianus*, L. Top of Jebel Husha', near the Nebi.  
 287.         *Alexandrinus*, Boiss. Moab, Gilead, Haurân.  
 288.         *Alexandrinus*, Boiss., var. *elongatus*, Barbey. Moab, Gilead.  
 289.         *neurocarpus*, Boiss. Bosrah.  
 290.         *Bethlehemiticus*, Boiss. Moab, Jebel Kuleib.  
 291.         *Aintabicus*, Boiss. Jebel Kuleib.  
 292.         *deinacanthus*, Boiss. Woods near Es-Salt; Jebel-ed-Durûz.  
 293.         *Forskahlei*, Boiss. El-Ghor, 'Ayun Musa.  
 294.         *ocephalus*, Boiss. Haurân.  
 295.         *sanctus*, Boiss. Khan Hathrûrah. Moab, Gilead.  
 296.         *Trachoniticus*, Post. Sowarat-el-Kebîrah.  
 297.         *angustifolius*, Lam. Jebel Kuleib.  
 298. *Dorycnium lamprocarpum*, Boiss. Ford of Jabbok.  
 299. *Scorpiurus sulcata*, L. New bridge, Jordan.  
 300. *Biserrula Pelecinus*, L. Haurân.  
 301. *Coronilla scorpioides*, L. Moab, Haurân.  
 302. *Onobrychis Crista.-Galli*, L. Everywhere.  
 303.         *œquidentata*, S. and Sm. Gilead.  
 304.         *gracilis*, Bess. Moab, Gilead.  
 305.         *Cadmea*, Boiss. Moab, Gilead, Haurân.  
 306.         *aurantiaca*, Boiss. Gilead.  
 307. *Vicia sericocarpa*, Fenzl. Moab.  
 308.         *sativa*, L. Everywhere.  
 309.         *lathyroides*, L. Woods between Amman and Es-Salt.

310. *Vicia peregrina*, L. Woods south of Es-Salt. Haurân.  
 311. *Narbonensis*, L., var *pilosa*, Post. Woods south of Es-Salt.  
 312. *serratifolia*, Jacq. Leaves serrate from middle to apex.  
     Haurân.  
 313. *tenuifolia*, Roth. Jebel Kuleib.  
 314. *Ervilia*, L. Moab, Gilead, Haurân.  
 315. *Palæstina*, Boiss. El-Ghor, Moab, Gilead.  
 316. *gracilis*, Loisel. Moab, Gilead.  
 317. *Ervum Lenticula*, Schreb. Woods south of Es-Salt.  
 318. *Lens*, L. Cultivated everywhere, and escaped.  
 319. *Cicer arietinum*, L. Cultivated everywhere, and run wild.  
 320. *Lathyrus aphaca*, L. Moab, Gilead.  
 321. *amœnus*, Fenzl. Moab, Gilead, Haurân.  
 322. *Cicera*, L. Haurân.  
 323. *Hierosolymitanus*, Boiss. Gilead.  
 324. *Orobus sessilifolius*, S. and Sm. Woods south of Es-Salt.  
 325. *Pisum elatius*, M. B. Moab, Gilead.  
 326. *humile*, Boiss, et Noë. Haurân.  
 327. *Ceratonia Siliqua*, L. Gilead.  
 328. *Prosopis Stephaniana*, M. B. Jordan valley.  
 329. *Acacia tortilis*, Hayne. Jordan valley, Callirrhoë.

## XXVI.—ROSACEÆ.

330. *Amygdalus communis*, L. Gilead.  
 331. *var. minor*, Post. 'Ayun Musa.  
 332. *Potentilla reptans*, L. Gilead.  
 333. *Poterium verrucosum*, Ehr. Gilead, Jebel Kuleib.  
 334. *spinosum*, L. Common on rocky hill sides.  
 335. *Rosa canina*, L. var. *coriacea*, Boiss. Jebel Kuleib.  
 336. *Rubus tomentosus*, Borckh. Moab, Gilead.  
 337. *Syrica*, Boiss. El-Jowailil. A specimen with obtuse obliquely mucronate leaves.  
 338. *Cratægus Azarolus*, L. Moab, Jebel Kuleib.  
 339. *monogyna*, Willd. Haurân, Jebel-ed-Durûz.  
 340. *Cotoneaster nummularia*, F. and M. Jebel Kuleib.

## XXVII.—GRANATEÆ.

341. *Punica Granatum*, L. Gilead.

## XXVIII.—MYRTACEÆ.

342. *Myrtus communis*, L. Gilead.



## XXIX.—CRASSULACEÆ.

343. *Umbilicus intermedius*, Boiss. Moab, Gilead.  
 344.           *lineatus*, Boiss. Shubbah, at the edge of the Leja. This should be regarded only as a depauperated cymose variety of *U. Libanotica*, Labill.

## XXX.—LYTHRARIÆ.

345. *Lythrum Græfferi*, Ten. Moab, Gilead.

## XXXI.—CUCURBITACEÆ.

346. *Citrullus Colocynthis*, L. El-Ghor.  
 347. *Bryonia multiflora*, Boiss. et Held. Gilead.

## XXXII.—FICOIDEÆ.

348. *Mesembryanthemum nodiflorum*, L. El-Ghor, Callirrhöë.  
 349. *Aizoön Canariense*, L. Callirrhöë.

## XXXIII.—UNBELLIFERÆ.

350. *Eryngium glomeratum*, Boiss. Haurân.  
 351.           *Creticum*, L. Moab, Haurân.  
 352. *Buplevrum nodiflorum*, L. Gilead.  
 353. *Astoma seselifolium*, D. C. Es-Salt, Haurân.  
 354. *Scaligeria Cretica*, Un. Gilead.  
 355. *Lagœcia cuminoides*, L. Mountains of Moab.  
 356. *Smyrniium connatum*, Boiss. et Ky. Haurân.  
 357.           *olusatrum*, L. Woods near Es-Salt.  
 358. *Smyrniopsis* (*Opoponax* ?) *Syriaca*, Boiss. Haurân.  
 359.           *cachroides*, Boiss. Haurân.  
 360. *Conium maculatum*, L. Gilead.  
 361. *Lecockia Cretica*, Lam. Woods, Gilead.  
 362. *Hippomarathrum Boissieri*, Reut. Jebel Kuleib.  
 363. *Colladonia crenata*, Fenzl. Moab, Gilead.  
 364.           *anisoptera*, Boiss. Haurân.  
 365. *Apium graveolens*, L. Tel-el-Hammâm.  
 366. *Pimpinella corymbosa*, Boiss. Table-land of Moab, Haurân.  
 367.           *eriocarpa*. Ascent from El-Ghor to 'Ayûn Musa.  
 368. *Synelcosciadium Carmeli*, Boiss. Gilead.  
 369. *Bifora testiculata*, L. Haurân.  
 370. *Carum elegans*, Fenzl. Gilead; Haurân, near mountains.  
 371. *Ammi majus*, L. Common throughout.  
 372.           *Visnaga*, Lam. Common throughout.

373. *Falcaria Rivini*, Host. Moab.  
 374. *Anthriscus nemorosa*, M. B. Jebel-Kuleib.  
 375.           *sylvestris*, L. Sûf to 'Ajlûn, in open glades in the woods.  
 376.           *lamprocarpa*, Boiss. Wadi-es-Sîr.  
 377. *Physocaulos nodosus*, Tourn. Jebel Husha', Wadi-es-Sîr.  
 378. *Prangos ferulacea*, L., var. *scabra*, Boiss. Jebel Kuleib.  
 379.           *melicocarpa*, Boiss., var. *Trachonitica*, Post. On the volcanic scoriæ, on the sides and at base of Tell Shihân, Lejâ.  
 380. *Cachrys goniocarpa*, Boiss. Gilead.  
 381. *Ferula communis*, L. El-Ghor, Moab.  
 382. *Ferulago Auranitica*, Post. Kureiyah, Haurân.  
 383. *Exoacantha heterophylla*, Lab. Moab.  
 384. *Kruberia peregrina*, L. Haurân, Common on Philistine plains.  
 385. *Ainsworthia trachycarpa*, Boiss. Moab.  
 386. *Tordylium Ægyptiacum*, L. Moab, Gilead.  
 387. *Malabaila Sekakul*, Russ. Flanks of El-Ghor.  
 388. *Daucus Jordanicus*, Post. El-Ghor  
 389. *Chætosciadium trichospermum*, L. Mountains of Moab.  
 390. *Daucus subsessilis*, Boiss. Jebel Husha'. A plant not heretofore observed in the East.  
 391. *Caucalis tenella*, L. Mountains of Moab.  
 392.           *leptophylla*, L. Haurân.  
 393. *Torilis triradiata*, Boiss. et Held. Burmah, Gilead.  
 394.           *neglecta*, Roem. et Sch. Gilead.  
 395.           *nodosa*, L. Gilead.  
 396. *Turgenia latifolia*, L. Gilead, Haurân.  
 397. *Lisæa Syriaca*, Boiss. Haurân.

## XXXIV.—CAPRIFOLIACEÆ.

398. *Lonicera Etrusca*. Woods south of Es-Salt.  
*Lonicera mummularifolia*. At northern base of cone of Jebel Kuleib.

## XXXV.—RUBIACEÆ.

399. *Rubia tinctorum*, L. Moab, Gilead.  
 400. *Callipeltis Cucullaria*, L. Moab, Gilead.  
 401. *Vaillantia hispida*, L. Moab, Gilead.  
       *Galium verum*. Jebel Kuleib.  
 402.           *tricornis*, With. Moab, Gilead, Haurân.  
 403.           *murale*, L. Moab, Gilead.  
 404.           *Aparine*, L. Moab, Gilead, Haurân.  
 405.           *spurium*, L., var. *Vaillantii*, Gr. et Godr. Moab, Gilead.  
 406.           *nigricans*, Boiss. Haurân.

407. *Galium Judaicum*, Boiss. Moab, Khan Hathrûrah to Jericho.  
 408.           *setaceum*, Lam. Ascent from El-Ghor to Nebo. Fruiting  
                   pedicels of this variety 2 to 6 times as long as fruit.  
 409.           *coronatum*, S. and Sm. Moab, Gilead, Haurân.  
 410.           *articulatum*, L. Moab, Gilead, Haurân.  
 411. *Meriarpæa vaillantoides*, Boiss. Haurân.  
 412. *Asperula arvensis*, L. Moab, Gilead, Haurân.  
 413. *Sherardia arvensis*, L. Moab, Gilead, Haurân.

## XXXVI.—VALERIANACEÆ.

414. *Valerianella diodon*, Boiss. Haurân.  
 415.           *Orientalis*, Schlecht. Gilead.  
 416.           *truncata*, Rehb. Gilead, Haurân.  
 417.           *coronata*, Willd. Moab, Gilead.  
 418.           *vesicaria*, Willd. Moab, Gilead, Haurân.  
 419.           *Kotschyi*, Boiss. Haurân.  
 420.           *Boissieri*, Krok. Haurân. Should be a mere variety of  
                   the last.

## XXXVII.—DIPSACEÆ.

421. *Cephalaria Syriaca*, L. Moab, Gilead.  
 422.           var. *sessilis*, D. C. Haurân.  
 423. *Scabiosa Ucranica*, L. Moab, Gilead.  
 424.           *prolifera*, L. Moab, Gilead, Haurân.  
 425.           *Palestina*, L. Moab, Gilead, Haurân.  
 426. *Pterocephalus plumosus*, L. Moab, Gilead, Haurân.  
 427.           *pulverulentus*, Boiss. et Bl. Haurân.

## XXXVIII.—COMPOSITÆ.

428. *Erigeron Canadense*, L. Common along roadsides.  
 429. *Bellis perennis*, L. Gilead.  
 430. *Asteriscus aquaticus*, L. Common.  
 431.           *graveolens*, Forsk. Moab.  
 432. *Pallenis spinosa*, L. Moab.  
 433. *Iphiona juniperifolia*, Cass. Lower valleys of Moab.  
 434. *Conyza Dioscoridis*, Rauw. El-Ghor.  
 435. *Phagnalon rupestrê*, L. Mountains of Moab.  
 436. *Helichrysum sanguineum*, L. Jebel Husha'.  
 437. *Filago spathulata*, Presl. Haurân.  
 438.           *Germanica*, L. Gilead.  
 439. *Achillæa micrantha*, M. B. Moab, Gilead.  
 440.           *Santolina*, L. Moab.  
 441.           *falcata*. Gilead, Haurân.

442. *Anthemis montana*, L. Haurân.  
 443.                   *cornucopiæ*, Boiss. Nebo.  
 444.                   *hyalina*, D. C. Haurân.  
 445.                   *tinctoria*, L. Haurân.  
 446.                   var. *discoidea*, Boiss. Gilead.  
 447.                   *Cotula*, L. Moab, Gilead, Haurân.  
 448.                   *altissima*, L. Moab.  
 449. *Chrysanthemum Coronarium*, L. Throughout.  
 450.                   *segetum*, L. Throughout.  
 451. *Artemisia monosperma*, Del. Moab.  
 452.                   *Herba-alba*, Asso. El-Ghor.  
 453. *Senecio vernalis*, W. K. Common throughout.  
 454.                   *coronopifolius*, Desf. El-Ghor.  
 455. *Calendula Ægyptiaca*, Desf. Common throughout.  
 456.                   *Palæstina*, Boiss. Flanks of El-Ghor.  
 457. *Dipterocome pusilla*, F. and M. Haurân.  
 458. *Gundelia Tournefortii*, L. Moab.  
 459. *Echinops viscosus*, D. C. Gilead.  
 460. *Chardinia xeranthemoides*, Desf. Deep valleys of Moab.  
 461. *Atractylis cancellata*, L. Shittim plain.  
 462. *Notobasis Syriaca*, L. Moab, El-Ghor.  
 463. *Onopordon Illyricum*, L. Gilead, Haurân.  
 464.                   *ambiguum*, Fresen. Haurân.  
 465. *Silybum Marianum*, L. Tel-el-Hammâm.  
 466. *Amberboa crupinoides*, Desf. Moab.  
 467. *Centaurea Trachonitica*, Post. Near Shuhba.  
 468.                   *eryngioides*, Lam. Wady Kelt.  
 469.                   *cyanoides*, Beggr. Gilead.  
 470.                   *myriocephala*, Sch. Gilead, Haurân.  
 471.                   *Behen*, L. Haurân.  
 472.                   *calcitrapa*, L. Haurân.  
 473.                   sp.                   Moab, between Ma'in and Callirrhoë.  
 474.                   *palleseens*, Del. Tell-el-Hammâm.  
 475. *Carthamus* sp.                   Moab.  
 476.                   *nitidus*, Boiss. Moab.  
 477. *Carduus argentatus*, L. Moab.  
 478. *Scolymus Hispanica*, L. Moab.  
 479. *Rhaponticum pusillum*, Labill. Moab.  
 480. *Rhagadiolus stellatus*, D. C. Gilead.  
 481. *Hedypnois Cretica*, L. Moab.  
 482. *Hagoseris Galilea*, Boiss. Haurân.  
 483. *Crepis Hierosolymitana*, Boiss. Gilead.  
 484. *Thrinicia tuberosa*, L. Gilead.  
 485. *Leontodon hispidulum*, L. Moab.  
 486. *Hypochæris*, sp. Ammân.  
 487. *Lactuca tuberosa*, L. Gilead.  
 488. *Sonchus asper*, Vill. Moab.

489. *Sonchus oleraceus*, L. Ascent to Moab.  
 490. *Zollikofferia mucronata*, Forsk. New bridge of Jordan.  
 491. *Scorzonera phæopappus*, Boiss. Haurân.  
 492.                   *papposa*, D. C. Moab.  
 493.                   *Jacquiniana*, Koch. Haurân.  
 494. *Tragopogon buphthalmoides*, Boiss. Moab, Haurân.

## XXXIX.—CAMPANULACEÆ.

495. *Campanula dichotoma*, L. Moab, Gilead.  
 496.                   *Rapunculus*, L. Gilead.  
 497. *Specularia Speculum*, L. Moab, Gilead, Haurân.  
 498.                   *falcata*, Ten. Gilead.

## XL.—ERICACEÆ.

499. *Arbutus Andrachne* L., var. *serratula*, Post. Mountains of Moab and Gilead. This tree is known in Southern Palestine and east of the Jordan as *Qaikob*, which name in Lebanon is applied to the Maple, while the *Arbutus* is there known as *Qotlib*.

## XLI.—PRIMULACEÆ.

500. *Cyclamen latifolium*, Sibth. and Sm. Rocks, Moab, Gilead.

## XLII.—PLUMBAGINEÆ.

501. *Statice Thouini*, Viv. Jordan valley and flanking hills to the sea level.  
 502.                   *pruinosa*, L. Dead Sea and valleys above it. This species has large, 1 to 3 inches long, obovate leaves, tapering to a petiole, but they are not usually seen in herbaria. Boissier says that the leaves are *small*. There are no specimens with leaves among the many in his herbarium.  
 503.                   *spicata*, Willd. Jordan valleys, Damascus plain.

## XLIII.—STYRACACEÆ.

504. *Styrax officinale*, L. Moab, Gilead.

## XLIV.—OLEACEÆ.

505. *Olæa Europæa*, L. Moab.

## XLV.—APOCYNACEÆ.

506. *Vinca herbacea*, W. K. Gilead.  
 507. *Nerium Oleander*, L. Moab, Gilead, Haurân.

## XLVI.—ASCLEPIADACEÆ.

508. *Periploca aphylla*, Dec. By a canal near Tell-el-Hammâm, in the Shittim plain.  
 509. *Calotropis procera*, Willd. Shittim plain.  
 510. *Pentatropis spiralis*, Forsk. Callirrhoë.  
 511. *Dæmia cordata*, R. Br. Callirrhoë.

## XLVII.—BORRAGINEÆ.

512. *Trichodesma Africanum*, L. Callirrhoë.  
 513. *Boissieri*, Post. Ruins of Kasr-el-'Abd, at 'Arak-el-Emîr.  
 514. *Heliotropium Bovei*, Boiss. Moab.  
 515. *villosum*, Willd. Moab.  
 516. *Europæum*, L. Moab.  
 517. *Cynoglossum Nebrodense*, Guss. Jebel Husha'.  
 518. *pictum*, Ait. Everywhere.  
 519. *Trachelanthus Kurdica*, Ky. Wâdy-es-Sir, with linear calyx-lobes and pedicels twice as long as calyx. This species is probably the same as *T. pereana*, Paine.  
 520. *Solenanthus amplifolius*, Boiss. Jebel Kuleib, among the pumice on the northern declivity below the summit.  
 521. *Asperugo procumbens*, L. Moab, Gilead.  
 522. *Anchusa Italica*, Retz. Moab, Gilead, Haurân.  
 523. *strigosa*, Labill. Moab.  
 524. *neglecta*, Alphe D. C. Birket-Dân, Jebel-ed-Durûz.  
 525. *Nonnea obtusifolia*, Willd. Moab, Gilead.  
 526. *melanocarpa*, Sibth. et Sm. Haurân.  
 527. *Alkanna strigosa*, Boiss. 'Ayûn Mûsa.  
 528. *Orientalis*, L., var. *integrifolia*, Post. El-Kûfr at foot of Jebel Kuleib.  
 529. *Myosotis refracta*, Boiss. Jebel Kuleib.  
 530. *hispida*, Schlecht. Jebel-ed-Durûz.  
 531. *Lithospermum arvense*, L. Moab, Gilead, Haurân.  
 532. *incrassatum*, Guss. El-Kûfr.  
 533. *Onosma sericeum*, Willd. Haurân. Not to be distinguished from *O. flavum*, Lehm.  
 534. *giganteum*, Lam. Jebel Husha', north flank.  
 535. *Podonosma Syriacum*, Labill. Fissures of rocks, common.  
 536. *Cerintho major*, Lam. Moab, Gilead.  
 537. *Echium plantaginum*, L., var. *puberulentum*, Post. Indument of velvety wool and spreading hairs.

## XLVIII.—CONVOLULACEÆ.

538. *Calystegia sepium*, L. Gilead.  
 539. *Convolvulus Doryenium*, L., var. *oxysepalus*, Boiss. El-Ghor, Moab.  
 540.           *hirsutus*, L. Haurân.  
 541.           *althæoides*, L. Ascent from El-Ghor to 'Ayûn Mûsa.  
 542.           *pilosellæfolius*, Desr. At Tell-er-Ramé.  
 543.           *stachydifolius*, Choisy. Moab, Haurân.  
 544.           *arvensis*, L. Moab, Gilead, Haurân.  
 545.           *Scammonia*, L. Gilead.  
 546. *Cuscuta planiflora*, Ten. Moab.

## XLIX.—SALVADORACEÆ.

547. *Salvadora Persica*, Gare. In clumps about the hot springs at Tell-el-Hammâm. The leaves of this specimen are oblong-linear.

## L.—SOLANACEÆ.

548. *Solanum nigrum*, L. Moab, Gilead, Haurân.  
 549.           *Dulcamara*, L., var. *lyratum*, Post. Lower leaves lyrate-pinnatifid, with one pair of leaflets and one pair of lobes. Gilead.  
 550.           *coagulans*, Forsk. El-Ghor.  
 551. *Withania somnifera*, L. Rocks above Callirrhoë; a variety with long peduncles.  
 552. *Lycium Arabicum*, Schw. El-Ghor, Moab.  
 553. *Mandragora officinarum*, L. Gilead, Haurân.  
 554. *Hyoscyamus reticulatus*, L. Moab, Gilead, Haurân.  
 555.           *aureus*, L. Ascent from El-Ghor to 'Ayûn Mûsa.

## LI.—SCROPHULARIACEÆ.

556. *Verbascum ptychophyllum*, Boiss. Moab, Gilead.  
 557.           *Gileadense*, Post. Wâdi-es-Sîr.  
 558.           *pinnatum*, L. Ascent from El-Ghor to 'Ayûn Mûsa.  
 559.           *Qulebicum*, Post. Jebel Kuleib, south-western declivity of cone.  
 560.           sp. near Es-Salt. A species only in leaf. Lower leaves oblong, a foot long, densely pannous.  
 561. *Celsia heterophylla*, Desf. Gerash, on the aqueduct bridge.  
 562. *Linaria Ægyptiaca*, L. Callirrhoë.  
 563.           *Damascena*, Boiss et. Gaill. Haurân.  
 564.           *Chalepensis*, L. Ascent from El-Ghor to 'Ayûn Mûsa.  
 565. *Linaria Halava*, Forsk. Top of wall of Jerusalem, valleys about Dead Sea, El-Ghor.

566. *Anarrhinum Orientale*, Bth. Gilead, Jebel-ed-Durûz.  
 567. *Scrophularia macrophylla*, Boiss. In caves at 'Ayûn Mûsa.  
 568. *Michoniana*, Coss. et Kral. Below caves at 'Ayun Musa.  
     var. *tenuisecta*, Boiss. Es-Salt.  
 569. *xanthoglossa*, Boiss. Moab, Gilead.  
 570. *Gileadensis*, Post. On the road from Sûf to 'Ajlûn  
     Gilead.  
 571. *variegata*, M. B., var. *Libanotica*, Boiss. Near El-Kûfr,  
     under Jebel Kuleib.  
 572. *Veronica Anagallis*, L. Common in wet places.  
 573. *anagallioides*, Guss. Less common than the last.  
 574. *Orientalis*, Mill., var. *tenuifolia*, Boiss. Mountains of  
     Gilead.  
 575. *Syriaca*, Raem. et Sch. Common throughout.  
 576. *Cymbalaria*, Bod. Common throughout.  
 577. *Eufragia latifolia*, L. Jebel-ed-Durûz.  
 578. *viscosa*, L. Gilead.

## LI.—VITICEÆ.

579. *Vitex Agnus-Castus*, L. Jebel-ed-Durûz.

## LII.—OROBANCHACEÆ.

580. *Phelipæa lavandulacea*, Rehb. El-Ghor, Jebel-ed-Durûz.  
 581. *ramosa*, L. Moab, Haurân.  
 582. *lutea*, Desf. El-Ghor.  
 583. *Orobanche speciosa*, D. C. Common throughout.  
 584. *cernua*, Löfl. Sowarat-es-Saghiri.

## LIII.—ACANTHACEÆ.

585. *Acanthus hirsutus*, Boiss. Ascent from El-Ghor to 'Ayun Musa.  
 586. *Blepharis edulis*, Forsk. On the road a few hundred yards above  
     Callirrhö.

## LIII.—LABIATÆ.

587. *Thymus Syriacus*, Boiss, var. *Trachoniticus*, Post. On the hot rocks  
     of lava near Brak, El-Leja.  
 588. *Mentha sylvestris*, L. Moab.  
 589. *Origanum Maru*, L. Moab.  
 590. *Micromeria nervosa*, Desf. Mountains of Moab and Gilead.  
 591. *Juliana*, L. Gilead.  
 592. *Calamintha graveolens*, M. B. Gilead, Jebel-ed-Durûz.  
 593. *Melissa officinalis*, L. Konawât.



594. *Salvia pinnata*, L. Jebel Husha'. Gilead.  
 595. *acetabulosa*, Vahl. Gilead, Haurân.  
 596. *Pinardi*, Boiss. Moab, Haurân.  
 597. *spinosa*, L. Haurân.  
 598. *Syriaca*, Bth. Gilead, Haurân.  
 599. *ceratophylla*, L. Haurân.  
 600. *brachycalyx*, Boiss. Moab, Gilead.  
 601. *Hierosolymitana*, Boiss. Moab, Gilead.  
 602. *Verbenaca*, L. Moab, Gilead, Haurân.  
 603. *controversa*, Ten. Moab, Gilead, Haurân.  
 604. *Horminum*, L. Moab, Gilead, Haurân.  
 605. *Russelii*, Bth. Shuhbah, at the edge of El-Leja.  
 606. *Zizyphora capitata*, L. Gilead, Haurân.  
 607. *Nepeta marruboides*, Boiss. et Held. Jebel Kulôb.  
 608. *Trachonitica*, Post. Among the ruins at Shuhbah.  
 609. *Cilicica*, Boiss. Moab.  
 610. *curvisflora*, Boiss. Jebel Husha'.  
 611. *cryptantha*, Boiss. et Haussk. Maîn.  
 612. *Scutellaria fruticosa*, Desf. Gilead, Haurân,  
 613. *Brunella vulgaris*, L. Moab, Gilead, Haurân.  
 614. *Stachys Arabica*, Boiss. Ain Hesbân, 'Ammân.  
 615. *pullulans*, Vent. 'Ain Hesbân. 'Ammân.  
 616. *Libanotica*, Bth., var. *eribulga*, Post. Suweidah to 'Atth,  
 Haurân  
 617. *Cretica*, Sibth. et Sm. Jebel Husha'.  
 618. *Marrubium cuneatum*, Russ. Jebel Husha', Haurân.  
 619. *Lamium amplexicaule*, L. Moab, Gilead.  
 620. *moschatum*, L. Moab, Gilead Haurân.  
 621. *Mollucella lævis*, L. Haurân.  
 622. *Ballota undulata*, Fresen. Moab, Gilead Haurân.  
 623. *saxatilis*, Sieb. Ascent from El-Ghor to 'Ayûn Mûsa.  
 624. *nigra*, L. Gilead.  
 625. *Phlomis Nissolii*, L. El-Ghor, Moab, Gilead.  
 626. *viscosa*, Poir. Moab, Gilead, Haurân.  
 627. *fruticosa*, L., var. *leiostegia*, Post. On the road from Mâa,  
 to Callirrhö.  
 628. *Herba-Venti*, L. Moab, Gilead.  
 629. *Eremostachys laciniata*, L. Moab.  
 630. *Prasium majus*, L. Moab, Gilead.  
 631. *Teucrium pruinatum*, Boiss. Haurân.  
 632. *Polium*, L. Ascent from El-Ghor to 'Ayûn Mûsa.  
 633. *Teucrium Auraniticum*, Post. In clumps by the roadside from  
 Bosrah to Kureiyah, Haurân.  
 634. *Ajuga Orientalis*, L. Moab, Gilead.  
 635. *Chia*, Poir, var. *tridactylites*, Boiss. Moab.

## LIV.—PLANTAGINEÆ.

636. *Plantago lanceolata*, L., var. *altissima*, Boiss. Giload.  
 637.           *albicans*, L. 'Ayun Musa, Irbid, Haurân.  
 638.           *amplexicaulis*, Cav., var. *linearifolia*, Post. Khan Hath-  
               rûrah to Jericho.  
 639.           *Cretica*, Lam. Moab.  
 640.           *ovata*, Forsk. Khan Hathrûrah to Jericho.  
 641. *Plantago ovata*, Forsk., var. *lanata*, Post. Between Irbid and Bosrah  
               in Haurân.

## LV.—CHENOPODIACEÆ.

642. *Chenopodium album*, L. Common throughout.  
 643.           *murale*, L. Common throughout.  
 644. *Beta vulgaris*, L., a *typica*, Boiss. Flanks of El-Ghor.  
 645.           *b maritima*, Boiss. Suleim, Haurân.  
 646. *Atriplex Palæstinum*, Boiss. Khan Hathrûrah.  
 647.           *Alexandrinum*, Boiss. Between El-Leja and Damascus.  
 648.           *leucocladum*, Boiss. Callirrhoë.  
 649. *Kochia latifolia*. Fres. Callirrhoë.  
 650. *Camphorosma Monspeliacum*, L. Moab.  
 651. *Salicornia fruticosa*, L. Sowarat-el-Kebîrah.  
 652. *Suaeda fruticosa*, L. Callirrhoë.  
 653.           *asphaltica*, Boiss. Khan Hathrûrah to Dead Sea.  
 654. *Atraphaxis spinosa*, L. Ascent from El-Ghor to 'Ayûn Mûsa.

## LVI.—POLYGONACEÆ.

655. *Polygonum Bellardi*, All. El-Kufr, Haurân.  
 656.           *polycnemoides*, Jaub. et Sp. Kaldûn.  
 657.           *aviculare*, L. Ascent from El-Ghor to 'Ayûn Mûsa.  
 658. *Rumex conglomeratus*, Murr. Wady-es-Sîr.  
 659.           *obtusifolius*, L. Haurân.  
 660.           *tuberosus*, L. Haurân.  
 661.           *roseus*, L. Khan Hathrûrah to Jericho.  
 662.           *lacerus*, Balb. Ascent from El-Ghor to 'Ayûn Mûsa.  
 663. *Emex spinosus*, L. Flanks of El-Ghor.

## LVII.—ARISTOLOCHIACEÆ.

664. *Aristolochia Maurorum*, L. Jebel Kuleib, Es-Salt.

## LVIII.—THYMELEÆ.

665. *Lygia pubescens*, Guss. El-Ghor.

## LIX.—SANTALACEÆ.

666. *Osyris alba*, L. Moab, Gilead.

## LX.—LORANTHACEÆ.

667. *Viscum cruciatum*, Sieb. Moab, Gilead.  
 668. *Loranthus Acaciæ*, Zucc. El-Ghor.

## LXI.—CYNOCRAMBEÆ.

669. *Cynocrambe prostrata*, Gaertn. Jebel Husha'.

## LXII.—EUPHORBIACEÆ.

670. *Euphorbia falcata*, L. Gilead.  
 671.                   var. *Galilæa*, Boiss. Moab.  
 672.                   *aulacosperma*, Boiss. 'Ajlûn.  
 673.                   *arguta*, Schrad. Haurân.  
 674.                   *thamnoides*, Boiss. 'Ayûn Mûsa, Jebel Husha'.  
 675.                   *Helioscopia*, L. Gilead, Haurân.  
 676.                   *tinctoria*, L. Plain of Damascus.  
 677.                   var. *schizoceras*, Boiss. Gilead.  
 678. *Ricinus communis*, L. El-Ghor.  
 679. *Andrachne telephioides*, L. El-Ghor, Gilead.  
 680. *Mercurialis annua*, L. Everywhere.

## LXIII.—URTICACEÆ.

681. *Celtis Australis*, L. Gilead.  
 682. *Ficus Carica*, L. Moab, Gilead.  
 683. *Urtica pilulifera*, L. Common.  
 684.                   *membranacea*, Poir. Common.  
 685. *Parietaria officinalis*, L. Moab, Gilead.

## LXIV.—JUGLANDACEÆ.

686. *Juglans regia*, L. Gilead.

## LXV.—PLATANACEÆ.

687. *Platanus Orientalis*, L. Moab, Gilead.

## LXVI.—CUPULIFERÆ.

688. *Quercus coccifera*, L. Moab, Gilead, Haurân  
 689.                   *Cerris*, L. Jebel Kuleib.  
 690.                   *Ægilops*, L. Moab, Gilead.

## LXVII.—SALICACEÆ.

691. *Salix fragilis*, L. El-Kûfr.  
 692.        *sp. near alba*, L. Tell-el-Hammâm.  
 693. *Populus Euphratica*, Oliv. El-Ghor.  
 694.        *nigra*, L. Cultivated everywhere along watercourses.

## LXVIII.—EPHEDRACEÆ.

695. *Ephedra Alte*, L. Jebel Sîâghah.  
 696.        *campylopoda*, C. A. M. Ascent from El-Ghor to 'Ayûn Mûsa.

## LXIX.—CONIFERÆ.

697. *Pinus Halepensis*, Mill. Moab, Gilead.

## LXX.—ORCHIDACEÆ.

698. *Cephalanthera ensifolia*, Murr. Woods, Moab and Gilead.  
 699. *Limodorum abortivum*, L. Woods south of Es-Salt, Jebel Husha'.  
 700. *Orchis sancta*, L. Gilead.  
 701.        *punctulata*, Stev., var. *sepulchralis*, Boiss. In a clearing on  
           the road between 'Ammân and Es-Salt. The specimens  
           found had pallid green-nerved sepals.  
 702.        *tridentata*, Scop. Gilead.  
 703.        *saccata*, Ten. Moab, Gilead.  
 704.        *Anatolica*, Boiss. Woods south of Es-Salt.  
 705. *Anacamptis pyramidalis*, L. Between Burmah and Gerash, Gilead.  
 706. *Ophrys apifera*, Huds. Between Burmah and Gerash, Gilead.

## LXXI.—IRIDACEÆ.

707. *Iris Sisyrinchium*, L. Everywhere.  
 708.        *Sari*, Baker. Plains of Moab.  
 709. *Gladiolus Illyricus*, var. *Anatolicus*, Boiss., Koch. Moab, Gilead,  
           Haurân.  
 710.        *atroviolaceus*, Boiss. Haurân.  
 711. *Ixiolirion montanum*, Labill. Moab.

## LXII.—LILACEÆ.

712. *Asparagus acutifolius*, L. Common throughout.  
 713.        *stipularis*, Forsk. El-Ghor.  
 714.        var. *brachyclados*, Boiss. El-Ghor.  
 715.        *Lownei*, Baker. New bridge of Jordan. A variety with  
           leaves spurred at base; the specimen in the Herbarium  
           of Kew is destitute of spurs.

716. *Asphodelus microcarpus*, Viv. El-Ghor, Moab, Gilead.  
 717. *fistulosus*, L. El-Ghor, Moab.  
 718. *Asphodeline lutea*, L. Haurân.  
 719. *brevicaulis*, Bert. Jebel Husha', Haurân.  
 720. *brevicaulis*, Bert., var. *foliosus*, Post. Stem leafy to base  
 of panicle. Haurân.  
 721. *Taurica*, Pall. Jebel Neba.  
 722. *Tulipa Oculus-Solis*, L. Gilead.  
 723. *montana*, Lindl. Jebel Kuleib, Haurân plain.  
 724. *Allium Hierochuntinum*, Boiss. Flanks and valley of El-Ghor,  
 Haurân.  
 725. *stamineum*, Boiss. El-Ghor.  
 726. *Sindjarensis*, Boiss. et Haussk. Sowarat-el-Kebîrah.  
 727. *trifoliatum*, Cyr. Haurân.  
 728. *Neapolitanum*, Cyr. Moab, Gilead, Haurân.  
 729. *Schuberti*, Zucc. Haurân.  
 730. *nigrum*, L. New bridge of Jordan.  
 731. *Erdelii*, Zucc. Jebel Sîâghah, Gilead, Jebel-el-Durûz.  
 732. *Scilla hyacinthoides*, L. Wady-es-Syr.  
 733. *Urginea maritima*, L. Ascent from El-Ghor to 'Ayûn Mûsa.  
 734. *Muscari comosum*, Mill. Moab, Gilead, Haurân.  
 735. *Pinardi*, Boiss. Jebel Sîâghah.  
 736. *longipes*, Boiss. Jebel Kuleib.  
 737. *racemosum*, L. Haurân.  
 738. *Bellevalia macrobotrys*, Boiss. Es-Salt, Haurân.  
 739. *densiflora*, Boiss. Merj, Damascus.  
 740. *Ornithogalum Narbonense*, L. Moab, Gilead, Haurân.  
 741. var. *densum*, Boiss. Haurân.  
 742. *umbellatum*, L. Moab, Gilead, Haurân.  
 743. *montanum*, Cyr. Gilead.  
 744. *Fritillaria Libanotica*, Boiss. Haurân.

## LXXIII.—SMILACEÆ.

745. *Smilax aspera*, L., var. *Mauretunica*, Boiss. Moab.

## LXXIV.—COLCHIACEÆ.

746. *Colchicum Ritchii*, R. Br. Shuhbah, El-Leja.

## LXXV.—AROIDEÆ.

747. *Arum Dioscoridis*, Sibth. et Sm. Moab.  
 748. *hygrophilum*, Boiss. Gilead.  
 749. *Helicophyllum crassipes*, Boiss. Gilead.

## LXXVI.—ALISMACEÆ.

750. *Alisma Plantago*, L. Moab, Haurân.  
 751. *natans*, L. In a pool, between 'Ajlûn and Irbid, Gilead. A plant not heretofore observed in the East.

## LXXVII.—BUTOMACEÆ.

752. *Butomus umbellatus*, L. El-Ghor, Haurân.

## LXXVIII.—TYPHACEÆ.

753. *Typha latifolia*, L. Ford of Jabbok, Gilead.

## LXXIX.—JUNCACEÆ.

754. *Juncus maritimus*, L. Ascent from El-Ghor to 'Ayûn Mûsa.

## LXXX.—PALMEÆ.

755. *Phoenix dactylifera*. Indigenous in valleys about the Dead Sea and in the Ghor.

## LXXXI.—CYPERACEÆ.

756. *Cyperus longus*, Sieb. Moab, Gilead.  
 757. *Scirpus Holoschænus*, L. Gilead.  
 758. *maritimus*, L. Gilead.  
 759. *Carex divisa*, Huds. Haurân.  
 760. *stenophylla*, Vahl. Moab, Gilead.  
 761. *Mediterranea*, C. B. Clarke. Haurân. A new species found also in Sicily.

## LXXXII.—GRAMINEÆ.

762. *Pennisetum ciliare*, L. Shittim plain.  
 763. *asperifolium*, Desf. Ascent from El-Ghor to Nebo.  
 764. *Imperata cylindrica*, L. Gilead.  
 765. *Saccharum Ægyptiacum*, L. Ascent from El-Ghor to Moab.  
 766. *Arundo Donax*. Ascent to Moab.  
 767. *Pollinia distachya*, L. Gilead.  
 768. *Andropogon foveolatus*, Del. Callirrhoë.  
 769. *annulatus*, Forsk. New bridge of Jordan.  
 770. *hirtus*, L. Nebo, Moab, Gilead.  
 771. *Phalaris minor*, Retz. El-Ghor.  
 772. *Canariensis*, L. Moab.  
 773. *nodosa*, L. Haurân.

774. *Alopecurus involucratu*s, Post. Kureiyah to el-Küfr, Haurân.  
 775. *anthoxanthoides*, Boiss. Nebo.  
 776. *agrestis*, L. Jebel-ed-Durûz.  
 777. *pratensis*, L. Moab, Haurân.  
 778. *Aristida cærulescens*, Desf. Gilead, Haurân.  
 779. *Forskahlei*, Tausch. Callirrhoë.  
 780. *Stipa Lagascæ*, Raem. et Sch. Plain of Moab.  
 781. *passiflora*, Desf. Brak, El-Leja.  
 782. *capillata*, Desf. Haurân.  
 783. *tortilis*, Desf. A mischievous and annoying weed; common everywhere.  
 784. *Piptatherum miliaceum*, L. Ascent from El-Ghor to Nebo.  
 785. *holciforme*, R. and Sch. Ammân, Es-Salt.  
 786. *Milium vernale*, M. B. Moab, Gilead.  
 787. *Polypogon Monspeliense*, L. El-Ghor.  
 788. *maritimum*, Willd. New bridge of Jordan.  
 789. *Lagurus ovatus*, L. Moab.  
 790. *Aira capillaris*, Host. Base of Jebel-el-Durûz, between Kureiyah and El-Kufr.  
 791. *Ventenata Blanchei*, Boiss. Haurân, between Kureiyah and El-Kufr.  
 792. *Avena sterilis*, L. Moab, Gilead, Haurân.  
 793. *barbata*, Brot. Moab, Gilead, Haurân.  
 794. *var. glabra*. El-Ghor.  
 795. *Arrhenatherum elatius*, L., *var. Palestinum*, Boiss. Moab, Gilead, Haurân.  
 796. *Cynodon Dactylon*, L. Common throughout.  
 797. *Danthonia*, ? sp. . . . . Jebel Husha'.  
 798. *Tetrapogon villosum*, Desf. Callirrhoë.  
 799. *Echinaria capitata*, L. Nebo.  
 800. *Lamarekia aurea*, L. El-Ghor, Moab, Gilead.  
 801. *Cynosurus callitrichus*, W. Barb. Solomon's Pools, Es-Salt, Nebo.  
 802. *elegans*, Desf. Es-Salt, 'Ajlûn.  
 803. *Koeleria phlæoides*, Vill. Moab, Gilead.  
 804. *Catabrosa aquatica*, L. Haurân.  
 805. *Melica Cupani*, Guss. Haurân.  
 806. *Dactylis glomerata*, L. Everywhere.  
 807. *Schismus Arabicus*, Nees. Ghor.  
 808. *Poa compressa*, L. Es-Salt.  
 809. *annua*, L. Everywhere.  
 810. *bulbosa*, L. Everywhere.  
 811. *Festuca elatior*, L., *var. pratensis*, Hack. Ammân, Plains of Moab.  
 812. *Vulpia ciliata*, Pep. Haurân.  
 813. *Catapodium loliaceum*, Huds. Ascent from El-Ghor to Nebo.  
 814. *Scleropoa Philistæa*, Boiss. Plain of Sharon.  
 815. *Bromus erectus*, Huds. Jebel-ed-Durûz.  
 816. *tectorum*, L. Throughout.  
 817. *sterilis*, L. Throughout.





RY 11<sup>E</sup>

TP 50

*B<sub>L</sub>*

Moist
Dry Bulb
59.3
58.2
62.6
71.9
74.5
78.7
82.3
85.4
88.3
78.2
67.1
57.0
71.5

MONTHLY METEOROLOGICAL TABLE DEDUCED FROM OBSERVATIONS TAKEN AT SARONA BY MERR J. DREHER IMMEDIATELY NORTH OF THE GREAT ORANGE GROVES OF JAFFA, SYRIA, 1½ MILE FROM THE SEA SHORE, ON SANDY SOIL, AND ABOUT 50 FEET ABOVE SEA-LEVEL. LATITUDE 32° 4' N., LONGITUDE 34° 47' E.

By JAMES GLAISHER, F.R.S.

Months, 1881.	Pressure of Atmosphere in Month. Corrected to 32° Fahrenheit.				Temperature of the Air in Month.								Mean Reading at 9 a.m.			Vapour, 9 a.m.			Degree of Humidity.	Weight of a Cubic Foot of Air.	Wind.								Mean Amount of Cloud.	Rain.	
	Highest.	Lowest.	Range.	Mean.	Highest.	Lowest.	Range.	Mean of all Highest.	Mean of all Lowest.	Mean daily Range.	Mean.	Dry Bulb.	Wet Bulb.	Dew Point.	Elastic Force of Vapour.	Weight in a Cubic Foot of Air.	Additional Weight required for Saturation.	Relative Proportion of								Calm, or nearly Calm.	Number of Days on which it fell.	Amount Collected.			
																		N.			N.E.	E.	S.E.	S.	S.W.					W.	N.W.
January .. .. .	30·235	29·751	0·384	29·997	80·0	40·0	40·0	71·0	45·0	25·0	59·5	59·3	53·4	48·2	·338	3·8	1·9	67	535	0	1	3	11	11	1	1	0	3	4·6	4	0·47
February .. .. .	30·007	29·524	0·583	29·838	75·0	41·0	34·0	61·8	47·6	17·2	50·2	58·2	53·6	49·4	·355	4·0	1·5	73	533	1	3	0	5	9	5	3	0	2	6·7	12	4·12
March .. .. .	30·175	29·579	0·596	29·917	87·0	40·0	47·0	68·4	48·1	20·3	58·3	62·6	57·2	52·6	·398	4·4	1·9	70	530	1	2	1	5	5	7	4	2	4	4·2	10	2·55
April .. .. .	30·025	29·545	0·490	29·828	96·0	47·0	49·0	77·6	56·9	20·7	62·2	71·9	62·2	54·9	·433	4·7	3·8	55	518	2	0	0	4	7	4	6	3	4	6·0	4	0·25
May .. .. .	29·957	29·637	0·320	29·821	99·0	48·0	51·0	80·1	56·8	23·3	68·5	74·5	65·3	58·6	·495	5·3	3·9	58	515	1	2	2	0	0	6	7	9	4	3·1	0	0·00
June .. .. .	29·937	29·697	0·260	29·816	96·0	53·0	43·0	83·2	58·9	24·3	66·0	78·7	69·8	63·7	·589	6·3	4·1	60	511	1	1	0	0	0	9	7	9	3	1·6	0	0·00
July .. .. .	29·860	29·563	0·297	29·705	89·0	60·0	29·0	86·2	67·1	19·1	76·6	82·3	73·8	68·1	·688	7·3	1·3	66	505	0	0	0	0	0	21	8	1	1	1·9	0	0·00
August .. .. .	29·871	29·570	0·301	29·675	106·0	67·0	39·0	89·9	70·3	19·6	80·1	85·4	76·7	71·1	·761	8·1	4·8	62	501	0	0	0	1	4	24	1	0	1	2·3	0	0·00
September .. .. .	29·940	29·663	0·277	29·792	92·0	63·0	29·0	85·1	68·1	20·0	78·1	83·3	75·3	70·0	·733	7·8	4·3	64	505	0	1	0	1	0	11	2	6	9	2·6	0	0·00
October .. .. .	29·994	29·823	0·171	29·902	89·0	54·0	35·0	83·3	61·5	21·8	72·4	78·2	68·5	61·8	·552	6·0	4·4	57	513	3	3	0	4	2	3	1	8	7	3·2	0	0·00
November .. .. .	30·076	29·747	0·329	29·919	89·0	40·0	49·0	75·0	55·9	19·1	65·5	67·1	60·8	55·7	·446	4·9	2·5	67	525	0	3	3	8	7	4	0	1	4	5·0	7	5·00
December .. .. .	30·232	29·784	0·448	29·975	72·0	39·0	33·0	66·2	47·4	15·8	56·8	57·0	52·9	49·1	·349	3·9	1·3	75	537	0	5	2	11	10	0	1	0	2	4·5	11	5·10
Means .. .. .	30·028	29·657	0·371	29·857	89·2	50·1	39·1	77·8	57·2	20·0	66·7	71·5	64·1	58·6	·511	5·6	3·2	64	519	Sums. 9	Sums. 21	Sums. 11	Sums. 50	Sums. 55	Sums. 95	Sums. 41	Sums. 39	Sums. 44	3·8	Sums. 48	Sums. 17·10
Number of Column ..	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

818. *Bromus Matritensis*, L. Everywhere.  
 819. *Haussknechtii*, Boiss. Jebel Kuleib.  
 820. *macrostachys*, Desf. Moab, Haurân.  
 821. *brachystachys*, Horn. New bridge of Jordan.  
 822. *rubens*, L. Everywhere.  
 823. *scoparius*, L. Everywhere.  
 824. *Brachypodium distachyum*, L. Moab, Gilead. Haurân.  
 825. *Agropyrum junceum*, Beauv. Mountains of Moab.  
 826. *squarrosus*, Roth. Haurân.  
 827. *Secale fragile*, M. B. Jebel Husha'.  
 828. *Ægilops Aucheri*, Boiss. Ascent from El-Ghor to Nebo.  
 829. *crassa*, Boiss. Ascent from El-Ghor to Nebo.  
 830. *var. macrathera*, Boiss. El-Ghor.  
 831. *triuncialis*, L. Gilead.  
 832. *var. brachyathera*, Boiss. Gilead.  
 833. *Lolium rigidum*, Gaud. Es-Salt, Haurân, El-Ghor, Jebel Husha'.  
 834. *sp.* Ascent from El-Ghor to 'Ayûn Mûsa.  
 835. *sp.* Burmah to Gerash, Gilead.  
 836. *Hordeum bulbosum*, L. Common throughout.  
 837. *murinum*, L. Common everywhere.  
 838. *Elymus Caput-Medusæ*, L. Haurân.  
 839. *Delileanus*, Schult. Gilead, Haurân.

## LXXXIII.—FILICES.

840. *Cheilanthes fragrans*, L. Burmah, Gilead.  
 841. *Adiantum Capillus-Veneris*, L. Wet places everywhere. Very fine fronds of it are found in the cave at 'Ayûn Mûsa.  
 842. *Ceterach officinarum*, L. Gilead.

## LXXXIV.—CHARACEÆ.

843. *Chara*, *sp.* Burmah.

## METEOROLOGICAL OBSERVATIONS.

1881.

The numbers in column 1 of this table show the highest reading of the barometer in each month; of these, the highest appear in the winter, and the lowest in the summer months. The maximum for the year was in January, as in the preceding year, and was 30·235 ins. In column 2, the lowest in each month are shown; the minimum, 29·524 ins., was in February, in the preceding year it was in April; the range of readings in the year was 0·711 inch, in the year 1880 it was 0·780 inch. The numbers

in the 3rd column show the range of readings in each month ; the smallest, 0·171 inch, is in October, and the largest, 0·596 inch, in March. The numbers in the 4th column show the mean monthly pressure of the atmosphere ; the greatest is in January, and the smallest in August.

The highest temperature of the air in each month is shown in column 5. The highest temperature in the year was 106° in August, but the temperature reached and exceeded 90° in every month from April to September, with the exception of July, when the maximum was 89°. The first day in the year the temperature reached 90° was on April 8th, and there were three other days in this month when the temperature was more than 90°. In May there were four days when the temperature reached and exceeded 90° ; in June there were three such days ; in August ten days, the highest being 106°, on the 27th ; in September six days. The last day that the temperature reached 90° was on the 25th of September, therefore the temperature reached and exceeded 90° on 27 days in the year. The maximum temperature, both in October and November, was as high as 89°.

The numbers in column 6 show the lowest temperature of the air in each month ; in December the lowest temperature in the year was experienced, viz., 39°, and this temperature occurred on two different nights. Therefore, on only two nights in the year was the temperature so low as 39°, while, in the preceding year, it was as low as 32°, both in January and February. The yearly range of temperature was 67°. The range of temperature in each month is shown in column 7, and these numbers vary from 29° in July and September to 51° in May.

The mean of all the highest by day, of the lowest by night, and of the average daily ranges of temperature, are shown in columns 8, 9, and 10, respectively. Of the high day temperature, the lowest was in February, 64°·8 ; and the highest in August, 89°·9. Of the low night temperatures, the coldest, 47°·4, took place in December, and the warmest, 70°·3, was in August. The mean daily range of temperature, as shown in column 10—the smallest was 17°·2 in February, and the largest was 24°·3 in June.

In column 11, the mean temperature of each month, as found from observations of the maximum and minimum thermometers only. The month of the lowest temperature was February, 56°·2, and that of the highest was August, 80°·1. The mean temperature for the year was 66°·7, that of the preceding year was 66°·4.

The numbers in columns 12 and 13 are the monthly means of a dry and wet bulb-thermometer, taken daily at 9 a.m., and in column 14 the monthly temperature of the dew point at the same hour, or that of the temperature at which dew would have been deposited. The elastic force of vapour is shown in column 15, and in column 16 the water present in a cubic foot of air ; in January this was as small as 3½ grains, whilst in August it was as large as 8 grains. The numbers in column 18 show the degree of humidity, saturation being considered 100 ; the smallest number in this column is in April, and the largest in December. The

weight of a cubic foot of air, under its pressure, temperature, and humidity, at 9 a.m., is shown in column 19.

The most prevalent winds in January were S.E. and S., and the least prevalent were N. and N.W. In February the most prevalent was S., and the least prevalent were E. and N.W. In March the most prevalent were S.W., S.E. and S., and the least prevalent were N. and E. In April the most prevalent were S. and W., and the least N.E. and E. In May the most prevalent were N.W., W., and S.W., and the least were S.E. and S. In June the most prevalent were S.W., N.W., and W., and the least prevalent were E., S.E., and S. In July and August the most prevalent was S.W., and the least were N., E., and its compounds. In September the most prevalent was S.W., and the least E. and W. In October the most prevalent was N.W., and the least were N. and W. In November and December the most prevalent winds were S.E. and S., and the least prevalent were N., S.W., and W.

The numbers in column 29 show the mean amount of cloud at 9 a.m. ; the month with the smallest amount is June, and the largest February. Of the cumulus, or fine weather cloud, there were 91 instances in the year ; of these there were 18 in July and 18 in August, and 14 in September, and one only in February. Of the nimbus, or rain cloud, there were 53 instances in the year, of which 12 were in February, 11 in December, and 9 in March, 5 only from May to October. Of the cirrus, there were 59 instances in the year, of which 11 were in January, 9 in November, and 8 in February. Of the cirro-cumulus there were 16 instances in the year. Of the stratus 14 instances. Of the cirro-stratus there were 6 instances in the year. And there were 126 instances of cloudless skies.

The largest fall of rain for the month was in November, 5.09 ins. ; the next in order was in December, 5.03 ins., of which 1.91 inch fell on the 21st. In December, 1880, the fall was 10.5 inches. No rain fell from April 29th to the 6th of November, making a period of 189 consecutive days without rain. The fall of rain in the year was 17.49 inches, being 11.19 inches less than in the preceding year. The number of days on which rain fell was 48, in the preceding year the number was 66.

JAMES GLAISHER.

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## ALTAIC CYLINDERS.

Among the Babylonian cylinders—amulets or seals, in the British Museum, and the Phœnician cylinders which are kept with them—there are two or three which appear to belong to the so-called "Hittite" art, because they present hieroglyphic emblems like those of Hamath. It is possible that others classed as Babylonian which present figures of the gods without hieroglyphs may also be of this class (*see* "Guide to Kouyunjik Gallery," page 136).

Mr. T. G. Pinches (one of our best Akkadian scholars) has kindly sent

me casts of three of these cylinders, which are very similar to those published by Menant and Perrot, from Aidin in Lydia, and other places in Asia Minor. With respect to such cylinders Mr. Pinches says, in the Guide above quoted (p. 126), that they appear to have been used as charms suspended to the wrist, or hung round the neck or waist. The subjects are generally connected with mythology. Another of the same class is in possession of Mr. Greville Chester.<sup>1</sup>

No. 1. Menant, *les Pierres Gravées* II, Fig. 111.—Two deities in the usual high cap and skin robe face each other. Between is a bull's head and a scorpion, to the left four small figures under a twisted pattern (often found on these cylinders) with two birds above with long tails. To the left again a figure in a horned cap with sceptre somewhat like those of the god at Boghaz Keui.

The bull and scorpion are the emblems of the second and eighth month (which before 2152 B.C. were the first and seventh month, on account of precession), and they therefore probably indicate spring and autumn. The twist pattern may conventionally represent waves or clouds (it resembles the Chinese sign for cloud); the swallow is the emblem of fate, both in Babylonia and in Egypt. The deity with horned headdress is possibly Ea.

No. 2. Menant, Fig. 112.—The deity with horned cap, followed by a goddess in long skin robe, and by a god with high cap bearing the winged sun on his sceptre, approaches a quadrangular enclosure of twist pattern in which are a man and woman. Her headdress is that worn by the Phœnician and Egyptian goddesses (the globe and feathers), and in her right she holds an *ankh*, or emblem of life; the man wears a tiara or turban, and raises his hand in the attitude of blessing. This may represent a legend like the Median story of the *Vara*, or "garden," in which

<sup>1</sup> Mr. Greville Chester's collection, which he will, no doubt, describe, is of high interest, and contains several undoubted Altaic seals. His great seal from Tarsus may be Babylonian, but is equally likely to be Altaic. It has five designs, which have been published in "Nature." On the base a standing figure presents a trident to one seated on a throne, surrounded by a twisted pattern. On one side the eagle-headed deity (Nisroch) stands before an altar, at which is seated opposite a personage holding a cup and lightning; above him is the winged sun; over the altar the trident is flanked by two luck marks, common in Phœnicia. On the second side this luck mark (which I described in 1883 and 1886) stands between two figures, one seated and holding a stag (perhaps Dara). On the third a figure seated, with tiara and cup in hand (the cup is often held by deities), grasps a bird and a rabbit (emblems of the moon); in the corner is the luck mark. On the fourth side the seated figure holds a *trisol*, or trident, and a bird perches above it. This is one of the finest seals I have seen.

Mr. Greville Chester has also a Babylonian cylinder with a representation of human sacrifice (of which type the British Museum seems only to possess a solitary example), and several Phœnician seals, one with a personal name compounded with *Yah* (the shorter form of the Hebrew Jehovah), as in names read by Mr. Pinches in cuneiform.

the first man was enclosed to protect him from the great winter (Vendidad II, 61), where he is visited by the gods Ea, Istar, and Shamash (Tammuz), as the Chaldean Noah was visited after the flood.

No. 3. Menant II, Fig. 113.—A warrior with sword and spear, with the goat's head (*Tar*) behind him. A smaller personage standing on two mountains with a small deer in front. These face to the right towards two long robed figures with an antelope between, over which is the emblem (found in Phœnicia and Egypt also) of the sun resting in the cup of the crescent moon. The meaning of this combination is perhaps illustrated by the old Chinese compound emblem (Chalmers, p. 107), sun and moon, for *ming*, "bright."

No. 4. Perrot, *Hist. de L'art*, IV, p. 771.—An elaborate design mentioned in "Altaic Hieroglyphs" (2nd edition, page 65). On the upper edge is the twist pattern, and on the lower a sort of curb pattern just like the Chinese emblem for clouds. To the right a deity, marked by a star on his head, sits on a mountain with a deer at his (or her) feet, flanked by hawk-headed cherubs (this may be *Dara* (Ea) or *Istar*). To the left a larger deity, also like the preceding with skin robe, holds a triple lituus, and has the star beneath his throne. To the left again two rampant demons tear one another, and over them are two Altaic hieroglyphs, *Ne-Guy* or *Zi-Guy*, "fighting" or "spirits fighting."<sup>1</sup> To the left again the centre of the design shows a Janus, or two-headed god,<sup>2</sup> in skin robe, extending a whip towards these demons, and a cross towards three persons in skin robes (two long, one short-skirted), who approach, facing to the right with the hand in attitude of supplication. Beyond these to the left a long robed figure which, like the three suppliants, appears to have a pig-tail,<sup>3</sup> faces to the left and holds what may be a snake or a corn-sheaf.

<sup>1</sup> A very curious objection has been taken to the idea that the Hittite texts are religious because the later Assyrian texts are historical. Those who raise this objection seem to forget how much more numerous in antiquity are religious texts than are historical, especially at the earliest period. The British Museum is full of such religious texts from Babylonia and Assyria, as well as from Egypt, and votive texts are common also in Etruria, in Greece, and in Phœnicia. The great lion, with the name and titles of Asshur Nasir Pal, in the British Museum, bears a text in 41 lines in honour of the goddess Istar; and Mr. Pinches remarks: "To such an extent was the worship of the gods carried in Babylonia that hardly any historical records are found upon the cylinders of the kings, the inscriptions being entirely devoted to descriptions of the restoration and building of the temples and praises of the gods." This also applies to the texts in Akkadian (dating about 2500 B.C.) found at Tell Loh. Representations, not only of gods, but of demons also, occur on the great sculptures from Nineveh in the Museum.

<sup>2</sup> This two-headed deity is also to be found on an Akkadian cylinder figured by Perrot.

<sup>3</sup> In the great sculptures representing the conquest of Elam in the British Museum several of the Elamites have what looks like a plait or pigtail behind their heads. The Altaic races overspread Elam as well as Media and Chaldea.

Above is the sun-moon emblem for "brightness," already mentioned. Last of all, to the left, a small figure dancing on a fish, supports something which seems to represent the clouds—a Hittite Atlas.

No. 5 (same work, p. 772 Fig. 384).—A four-sided seal. On three sides are figures standing erect on beasts (just as so many deities are represented to stand in India, Phœnicia, &c., &c.). The first, on a horse or ass (*Set*), with the amulet sign, which in Cypriote has the sound *Rea*, and with a tree in front. The second on a deer (*Dara*), with the same sign and two stars. The third with star and amulet on a lion (*Ma*). On the fourth side two bull-headed satyrs support the tree of life with the winged sun above. This seal is from Asia Minor.

No. 6 (same work, p. 773, Fig. 386) represents five deities and five animals under them, with various hieroglyphs clearly Altaic. The first to the right seems to be a goddess, facing the right, and holding the lituus. Her emblem is a dove. The second, also facing to the right, seems to be a goddess. She holds a flower, and stands above a lion; before her is a hieroglyph common at Jerablus, which resembles the cuneiform *Da*.<sup>1</sup> The third deity is male, and faces to the left. He has the wings and tail of a bird, a tiara, a cross in the left hand (on the impression), and flail in the right. His emblem before him seems to be an altar. The animal below is a hare (the moon).<sup>2</sup> The fourth deity also, with bare legs, and presumably male, is possibly a Janus with two faces. He wears the horned cap of *Ea* or *Dara*, and holds a tree. In front of him is a snake, and the lucky hand, so common at Carthage and all over Asia. His animal is the deer (*Tar* or *Dara*). The fifth deity faces to the right, and holds a sceptre. He is short-skirted, ram-headed, and with wings. In front of him is a flying bird (*Zi*), and behind him what may be a fish (*Kha*). Beneath him is the long-tailed bird (*see* back, No. 1) holding a twig in its beak. In his right hand (on the impression) he seems to hold the *Ankh*, or emblem of life. These five gods perhaps answer to the five deities whose emblems accompany the portraits of Assyrian kings, answering roughly to Venus, Juno, Lunus, Neptune, and Jupiter, or perhaps to the five propitious planets excluding the malifics (Mercury and Saturn). Whatever their precise character, we see that there were in Lydia (for this cylinder comes from Aidin), five gods whose emblems were the dove, the lion, the hare, the deer, and the eagle, to which we are able to add (*see* back, No. 5) a god who stood on a horse or ass.<sup>3</sup> These remarks clear the way for the

<sup>1</sup> Behind her head seems to occur the Cypriotic emblem, *Mu*. She may, therefore, be the "Mother" goddess, always distinguished from the Venus of Asia, whose emblem was the dove.

<sup>2</sup> The hare represents the moon among Mongols. In China the sun and moon are called "the Golden Crow and the Jade Rabbit."

<sup>3</sup> The ass is a frequent divine emblem in Egypt for the sun, and in Cappadocia the ass-head occurs with the sign of deity (compare the Myth of Midas and the Median holy ass in the sea). Mr. Greville Chester has a cylinder with a lion having beside it a well-marked ass-head. At Malthal we find deities sup-



description of the three cylinders in the British Museum, casts of which have kindly been sent to me by Mr. Pinches.

No. 7 (British Museum Catalogue, p. 136, No. 52).—On the left two bull-headed genii, with the sun-moon emblem ("brightness") above.<sup>1</sup> It is remarkable that the sun is marked in this case with a cross or wheel, as on the Jerabis stones. Beneath is the head of a deer with branching horns. These genii are the same as on No. 5.<sup>2</sup> To the right a deity in a mitre with the bird (*Zi*) as his emblem. Then another similar figure facing him in the same head-dress, between them an antelope's head, and the hand raised and open. This last emblem, which is so common at



Carthage, and which, in all countries, is a sign of good luck, occurs with the bird (*Zi*) on a cylinder published by Dr. Wright from Lajard ("Culte de Mithra," pl. xxiii, fig. 1<sup>3</sup>). The last figure to the right is the usual naked goddess, with hands raised to her breasts, as at Karkemish, Troy, &c. Her emblem is a palm branch or plant.<sup>4</sup>

No. 8 (British Museum Catalogue, No. 54).—To the right, a winged god, faced by a figure which seems, perhaps, about to slay a couching bull, which has a hump like the zebu, a third figure with a sword behind, and between these a fleur-de-lis-like object, apparently a form of the amulet *Ra*. The workmanship, with drilled holes for the heads, &c., resembles that of cylinders from Asia Minor.

No. 9 belongs to a large class in the Babylonian collection, perhaps posed to be Assyrian, standing erect on animals, among which the lion, the horse, the deer, the winged bull, and the dog are distinct. The two gods at Bavian stand erect on lions, and this attitude occurs on coins as well as at Pterid in Cappadocia.

<sup>1</sup> This double emblem, sun and moon, seems later to have been replaced by moon and star (as in the modern Turkish flag), which combination is found with a gazelle on coins of Mithradates, King of Pontus (120-63 B.C.), and with a sheep on coins of Antioch.

<sup>2</sup> On a seal from Youzghâd found by F. G. R. Edwards, Esq., these bull-headed genii flank the winged sun. Other figures of the gods occur on this seal with a tree and a deer's head.

<sup>3</sup> This cylinder represents the sacred tree with goats beneath and the winged sun above, flanked by two figures, with the legend apparently *Zi-Az-Sa*, "spirit of heaven favour" (Wright, "Empire of Hittites," Pl. XX, Fig. 5).

<sup>4</sup> This plant may show that the goddess is the Babylonian *Zirbanitu*, or "bestower of seed."

representing a king, or else the sun-god with his emblem—here a winged wheel—above, and with the eagle, the bird with the twig in its mouth,



and a dog, all behind his throne. On the altar in front a deer's head is being sacrificed<sup>1</sup> by two suppliants. A monkey sits by the altar.<sup>2</sup> The lion and the moon above we have already seen to be emblems of two goddesses. In the hand of the further suppliant is the head of an ass, either a sacrifice or an emblem of the ass-deity, like the two other emblems in the same line. Clemens Alexandrinus (*Cohortatio II*) says the Scythians sacrificed the ass to Phœbus. Strabo (xv, II, 14) says it was sacrificed to Mars.

These nine cylinders, and the three others mentioned in the notes, appear all to be of Altaic origin, but it is remarkable how similar is the character of the Babylonian examples when compared with those from Lydia and Tarsus.

The symbolism of many described in the British Museum Catalogue is much the same. In one class we have a sort of Perseus and Andromeda group, the male figure treading on a dragon, the female naked. In another (No. 5) Martu, Son of Heaven, wears a horned cap, and is accompanied by an ibex. The Chaldean Hercules, and his friend, the bull-headed satyr, Eabani, are represented slaying the winged bull, or rending the lion. An ibex also accompanies Eabani. On a Phœnician cylinder (No. 21) El subdues the gryphon and a winged man-headed bull. The deity with the axe<sup>3</sup> or hammer, found at Boghaz Keui, and also in Etruria, where he was called Puphluns, occurs on a Cyprian cylinder

<sup>1</sup> Among the Khitai, &c., the deer was sacrificed in honour of the sky. The club held by this deity recalls the clubs of the figures at Merash, Boghaz Keui, &c., on Altaic monuments.

<sup>2</sup> The monkey (of which I have only observed one other instance) is sitting under the moon. Perhaps we should compare the Egyptian ape with the moon on its head. The monkey figures in Indian mythology, but it is curious to find it in Western Asia. There are well-known representations, however, of apes and monkeys brought as tribute to Assyria.

<sup>3</sup> This weapon recalls the *Ai Balta*, "axe" (or hammer) "of honor," used by the Tartars in Bactria. Charun, the "black god" of Etruria, often carries it. It is also carried by a figure on coins of Idrieus, King of Caria, in 353-344 B.C., of his predecessor, Mausolus (377-353 B.C.), of his successor, Pixodarus (340-335 B.C.), and on a coin of the Carian city Mylassa the hammer also appears. We have a well-known figure of a horned god (apparently Rimmon) holding the lightning in one hand and an axe in the other.

(No. 46) with the sacred tree, gryphons, and gazelles and fish. The dog, ibex, goat, and gryphons, with a ravenous animal attacking a deer, occur on another (No. 47).<sup>1</sup> The ibex, bird, monkey, and lion, occur on another of doubtful class (No. 48). The sun-god and moon-goddess, on another, are accompanied by fish-goats, Capricornus (No. 55), while a human sacrifice is offered them, probably for rain in the 10th (older 9th) or autumn month of Capricornus.<sup>2</sup>

From these notes, to which many others may be added illustrative of these mythological cylinders, we gather the following facts:—

1. The general character and subject of the cylinder charms is the same in Babylonia, in Phœnicia, and in Asia Minor and Cyprus, though the characters used in writing distinguish the different classes in some instances. The curly-toed boots are not distinctive geographically. The presence of the same Turanian race in all these districts explains the connection in art and symbolism very simply.<sup>3</sup>

2. In Asia Minor at least eight deities may be distinguished, viz., A. *Istar*, the naked Venus connected with the moon and the dove. B. *Nana*, or *Ma*, the mother-goddess (earth) standing on the lion. C. The lion-headed god, holding a fawn or some other animal, accompanied by the head of a rabbit or of a hare (Babylonian *Siu*)—in other cases, a god stands on a hare. D. The ram-headed god with a bird (*Zi*). E. The bull-headed or horned god, accompanied by a serpent (*Es*, *Esmun*, or *Martu*), whose emblem seems to be the deer (*Dara*). F. The sun-god, with wings and tail of an eagle (*Tamzi*, or *Ud*). G. The eagle-headed deity (*Nisroch*). H. The deity, ass-headed, or riding on an ass<sup>4</sup> (*Set*, or Bacchus).

<sup>1</sup> A Cyprian seal, with Cypriotic text, shows a gryphon attacking a deer. Compare the common group of the lion slaying a bull. This latter appears to be mentioned by Hellanicos (whom Josephus notices, Ant. i, 4-9) as representing water and earth, though this may be a late explanation.

<sup>2</sup> In confirmation of this suggestion of human sacrifice in time of drought may be quoted the Phœnician legend of El sacrificing his son in time of danger, and the well-known Babylonian text, "when the weather is fine . . . on the high place the son is sacrificed."

<sup>3</sup> Jade, though rare, is found in use in Mesopotamia. This jade must have come from Eastern Turkestan. It is found also in Switzerland. Jade has always been much prized by the Turanians, and is so still by the Chinese. It may be to the Turanians of Italy, not to Aryans, that its introduction into Europe is to be ascribed.

<sup>4</sup> The ass-headed god is shown by Rawlinson in his "Ancient Monarchies," and was known to the Gnostics. In Egypt, Set, Typhon, and Osiris are symbolised by the ass. In classic mythology the ass carries Bacchus and Silenus, and Priapus is also connected with the ass. In India the ass belongs to Yama, beneath the earth. In the Zendavesta the "three-legged ass" with one horn stands in the sea (Bundahish, ch. XIX). The ass was often sacrificed to Typhon and other deities, and there is no end to the mythology of this animal.

In addition to these, the sacred tree, the scarab, the winged horse, the gryphon, the man-bull, the sphynx, the cross, the *ankh*, and the lion-headed demons with eagle's feet and long ears, all appear to be common to the Babylonians, Phoenicians, Cyprians, Hittites, and other dwellers in Chaldea, Syria, and Asia Minor, and, in most cases, these symbols occur also in Etruria.

C. R. C.

### CHINESE AND HITTITE.

THE supposition that Chinese civilisation is connected with the old Turanian civilisation of Western Asia is by no means a recent theory. Lenormant in his "Manual" in 1868 (French edit. vol. i, p. 401), suggested that Chinese writing was derived from Akkadian hieroglyphics, and others have endeavoured to trace the connection.

The Rev. J. Edkins has written, since 1871 onwards, on the comparison of China and Babylonia, in writing, in astronomy, in the erection of observatories, in government, and in certain superstitions. In 1868, the Rev. J. Chalmers wrote on the same subject, and Professor R. K. Douglas has compared Chinese and Western myths. Mr. Hyde Clarke and Professor T. de Lacouperie have added to these comparisons, and the similarities of legend, language, religion and custom, dress and graphic ideas, must indeed strike any student of the Chinese who is acquainted with the west of Asia.

Nor is there any difficulty in accounting for such points of contact considering what is known of the early history of the Chinese.<sup>1</sup>

The Bak tribes (commonly called the "hundred families") came from the north-west, and entered the "flowery land," it is supposed, as early as 2300 B.C. Their language, in both grammar and words, presents numerous affinities to the Akkadian; and even in the modern Cantonese, which, according to Chalmers, preserves archaic terminations, I find about 100 words almost identical with Akkadian monosyllabic words, which agrees with Professor Max Muller's views as to Chinese.

The traditional number of hieroglyphics possessed by these immigrants from Central Asia was 540, including the secondary signs, or combinations of two, or even three, symbols (Lacouperie, "Chinese Civilisation," a lecture published 1880, p. 18). It has been said that this system was directly borrowed from Babylonia, but there are several objections to such a theory. The Chinese numerals are not like those of the cuneiform system (above three), the writing is in vertical lines, not from left to right as among Semitic writers of cuneiform; the compound emblems bear no relation to the compounds of the cuneiform.

The comparisons of Chinese and cuneiform, which I find possible in fifty or sixty cases, connect the Chinese with the very oldest Akkadian symbols which stand erect, and are written vertically for the word, and from right to left for the text. The sound, as well as the sense, is often

<sup>1</sup> See Professor T. de Lacouperie's new volume, "Languages of China before the Chinese," 1887.

the same, but since Chinese is a language of roots, not an agglutinative tongue, the comparison remains chiefly ideographic, and only serves to indicate a common (and very remotely common) origin rather than a direct literary borrowing. Some of the resemblances, such as the emblems for king, for fire, for white, for measure, for field, for twins, for storm, for bush, for wind, and for bondage, are, however, very remarkable, and can hardly be supposed due to independent origin. In all, I have noted sixty cases, comparing the Shwoh-wan with the oldest Turanian emblems of Tell Loh.

The great difficulty in such study lies in the corruption of both Chinese and cuneiform emblems through long use and graphic decay. Thus the Shwoh-wan (*see* Chalmer's translation) only dates back to about the Christian era; and even the earlier Ku-wen writing is said not to be traceable before 900 B.C.—a time when the cuneiform was already a decadent system.

The Chinese having ceased to remember the original derivation of the majority of their emblems, introduced fanciful explanations, like those once supposed to explain the origin of square Hebrew; and it seems that they even modified their forms according to their theories. A large proportion of emblems have thus become unrecognisable. Many, like the ape, the horse, the tortoise, the elephant, did not belong to the systems of Western Asia. Some which have retained their form yet, in recognisable outline, are, however, of great interest as showing the graphic ideas of Turanian picture writing; and thus serving to throw light on the ideographic value of older emblems.

Comparing the commoner Altaic—or so-called Hittite—with the Chinese emblems of which the antiquity and meaning is undoubted, I find, in all, some fifty possible comparisons, some of which serve to throw light on the values of the Hittite. Thus the Hittite *Zi* or *Zo* is very like the Chinese common phonetic for air or vapour, agreeing with the value which I have proposed from the Akkadian for the Hittite. The jar which in Hittite appears to have the value *Pa* or *Be*, comparing the Cypriote *Pe* and the Akkadian *Bi*, for a liquid receptacle, is like the Chinese *fān*, a jar, used both as a radical (or ideogram) and as a phonetic. It seems to me, indeed, that the two classes of Chinese emblems called keys and phonetics (that is, emblems used in one case for picture value, in the other for sound value) answer in each of the fifty cases to the corresponding two classes of the Hittite, viz., the larger emblems used as pictures, and the smaller attached emblems used for sound only, as phonetics. Several of the comparisons may be erroneous, but they are numerous enough to make it appear probable that the Chinese and Hittite systems sprang from a common original system, which is, of course, more closely represented by the archaic Hittite than by the Chinese, even of 2,000 years ago.<sup>1</sup>

<sup>1</sup> See "Structure of Chinese Characters," by John Chalmers, M.A., LL.D., 1882, a copy of which translation of the Shwoh-Wan has kindly been lent to me by Lieutenant Mills, R.E.

Yet later in entering China from the north and north-west, were the Khitai from Mongolia, whose name originates the mediæval term Cathay. The Chinese travellers of the 13th century speak of the Khitai as formerly inhabiting the country east of the Aral Sea. Mr. Howarth's interesting account of the Khitai (*J. R. A. S.* xiii, 2) shows that this Tartar-Mongol people were in many respects very like the Kheta of the Egyptian monuments. Some words of their language preserve almost unchanged the old Akkadian sounds. They were great charioteers and bowmen, and they adored earth, sky, sun, and moon, and the sacred mountain, as the Huns and the Etruscans did also, and as the Hittites are shown to have done from their treaty with Rameses. Like other Mongolian and Tartar peoples, they had a rich mythology. They were able to work metals as the Akkadians did from the earliest times, and as even the Turkomans still do; and they had cities and palaces.

The royal names and titles of the Khitai also recall those of the inhabitants of Asia Minor and Syria mentioned on the monuments. The King was called *Kha-Khan* (as among Persians and Khozars) — perhaps the real rendering of the Medie double emblem for King. *Khapi, Kaka* (compare the Medie *Khupa* and the common Turanian word *Kuk*, for “superior”); *Tulai* (compare *Tulia*, chief of the *Kue*); *Taishi* (from a Tartar root, meaning “to fight,” whence *Tis Tassi* and *Tassak*, “hero,” in Akkadian), are interesting names of Khitan chiefs. The meaning of the name *Khitai* is unfortunately obscure.

A great deal of light may be obtained from a study of the Turkic and Mongol history in illustrating the scattered fragments of information which we possess concerning the early Turanians of Chaldea and of Syria. In the folk lore of the Kirghiz, the Kalmuks,<sup>1</sup> and the Mongols, many of the old myths of the cuneiform tablets and Greek mythology remain but little changed.

The remaining words of the Carian language are easily explained by comparison with Turko-Tartar or Ugrian living words.

The curious non-Aryan inscriptions of Lemnos, which serve to connect the Etruscans with the shores of Greece and of Asia Minor, present us with a language evidently of the same class. Even among the Scythian Amazons of Herodotus we recognise the roots of the Akkadian language in words of which he gives the translation, and the similarities of Egyptian fairy stories written in the 14th century B.C., when they are compared with the legends of Central Asia, are so striking as to leave very little doubt as to their Turanian derivation.

The same study also enables us to understand Phœnician antiquity

<sup>1</sup> Take, for instance, the legend of King Midas, who had asses' ears. It occurs in a collection of Mongol tales, and the Kirghiz relate it in connection with Lake Issyk Kul. According to Herodotus, Midas was the first Phrygian King, and the Phrygians were apparently Turanians. *Mita*, King of the *Moschi*, is mentioned in a cuneiform text. On the Hittite monument a cap with ears like that inverted for Midas is represented.

much more completely, as I have attempted to show elsewhere,<sup>1</sup> and without doubt some of those names of Greek deities and heroes which are not explicable as either Aryan or Semitic, may be easily understood if regarded as of Pelasgic or Turanian origin. Among these I would reckon Herakles, or Herele (Etruscan), a word not explained by any Aryan etymology, but probably the Akkadian Er-gal (mentioned on a tablet), or "great man." The name Amazon may also be supposed to mean Ama-zun, or "female warrior;" while Eshmun and Silek, the Phœnician deities, may be Es-mun, "the good deity," and Sil-ik, "the bright one."<sup>2</sup>

The names of chiefs of various Asia Minor tribes from 1130 to 650 B.C., which have been found on the monuments and collected by Professor Sayce, present us with many clearly Turkic words, and with names or terminations also found in the Greco-Carian inscriptions. Thus Uricci, chief of the Kue, has a name comparable with the Tartar *örögi*, or "high." Burunate, the Yazbukian, may be compared with the Usbek word *Baranta*, for a "foray" or "raid." Menuas, King of Van, recalls the mythical giant *Manius*, the ancestor of the Kirghiz. Kalabôtês, the Carian, has a name meaning "great hero" in Tartar dialects, where the word *Batis* survives, and is, perhaps, the Akkadian *Patesi*.

These are but a few instances out of very many in which the Akkadian and the living Turko-Tartar languages give a simple explanation of local and personal names. The Carian word *Kôs* (*Kôn*), for sheep, recalls the Turkish قوز *qoz* "lamb," and قوبون *qubun* "sheep," which among the Kirghiz becomes *Koi*; and the Carian *tâpa* for a rock is clearly the Turkish تپه *tîpe* and the Turkeman *Tapa*, a well-known word for a hill. I believe that every known Carian word can be so explained, and the Carians are connected with the Hittites (by their syllabary) and with the Etruscans, according to classic tradition. The explanation of local names in Asia Minor occurring in Greek literature is equally satisfactory when comparison is made with the common geographical names of Central Asia. Thus, the termination *Der*, or *Dar*, in river names, is evidently illustrated by the Turkish دَر *dar* "valley," and the Central Asian *Daria*, for "river." The importance of a study of Altaic languages for the elucidation of the antiquities of West Asia, Greece, and Italy, as well as of Egypt, can hardly be overstated.

C. R. C.

<sup>1</sup> "Archæological Review," April, 1888.

<sup>2</sup> The name, Centaur (or Gandharva, according to Kuhn's comparison), has no good Aryan explanation. As a Turanian (Ugric) word it would mean "man-beast" (Gan-tôra). The word Gorgon in like manner comes from a root meaning "terror."

#### ERRATUM.

In *Quarterly Statement*, July, 1888, p. 163, I see the words "The beech is found all over the north of Asia." The word *Minor* is omitted by error. The beech grows on Mount Parnassus and in the Caucasus.

C. R. C.

## "THE SPEECH OF LYCAONIA."

(Acts xiv, 11).

It is generally supposed that the language of Lycaonia may have been one of the old dialects of Asia Minor, akin to those of the Non-Aryans. For this reason it is interesting to consider the few words of Carian, Lydian, Phrygian, Cilician, and other Asia Minor dialects preserved for us in classic authors. Lycaonia lay close to Cilicia, west of Cappadocia, east of Phrygia, Caria, and Lydia.

The following are Carian words (*see* "Trans. Bib. Arch. Soc.," ix, 1).

1. *Ala*, a horse. Compare Hungarian *lo*, "horse," Chinese *lu*, "ass," Turko-Tartar *at*, "horse." The *t* and *l* are often interchanged in Altaic speech.

2. *Banda*, "victory." Compare *Banda* in the Malamir texts, where it seems to mean "strong."

3. *Glaus*, "robber." The root *Kala* in Mongolian (Buriat) means "to steal;" the common personal ending in *s* is here added.

4. *Kakkabe*, "a horse's head." The second part may be compared with the Esthonian *hoba* and Ostiak *kopta*, "horse," the first is perhaps *Ka*, "face" (as in Akkadian), or *Kak*, "top." Compare *sak*, "head," "top" in Akkadian and in Ugric speech.

5. *Kōs*, "sheep." Turkish *Kozi*, "lamb," Mongol *Khosa*, "ram," Kirghiz *Koi*, "sheep."

6. *Taba*, "rock." Zirianian *tüp*, "rock," Turkic *tapa*, a "hillock."

7. *Soua*, "tomb." Probably the Etruscan *Sathi*, "tomb," as suggested by Dr. Isaac Taylor.

8. *Tumnia*, "rod." Probably the Ugric root *tumb*, to "strike."

9. *Toussuloi*, "dwarfs." The latter part is perhaps the Akkadian *lu*, "man," Mongol *ulut*, "mankind," or "men;" *tus* appears, perhaps, in the Tartar *tusak*, "low." The word has, however, been compared by Ellis with the Ossetic *tyusul*, Armenian *dogzu*, "little." That it is to be divided is shown by the next.

10. *Kattouza*, a Thracian town of dwarfs (Prof. Sayce). *Kat* is the Medic *Kat*, "place," from a root which is common to Aryan and Turanian speech, meaning a house or shelter; *Touz* is "short," as above.

### *Lydian Words.*

Many words given as Lydian are Aryan, and throughout Asia Minor a similar mixture of vocabularies exists—as in Armenian and Georgian.

1. *Attalos*, "cessation." Compare the Akkadian *Tillas*, "complete," from the root *Til*, "full," which occurs in Ugric speech.

2. *Kandaules*, said to mean "dog choker"—perhaps from the old savage sacrifice of tearing a dog. Perhaps we should compare the Chinese *Chuan* for "dog," and the Tartar root *Tol*, "to twist."



3. *Lailas*, a "tyrant." Compare the Akkadian *Lila*, "ruler," Hittite *Lel*, Hunnic *Luli*, "chief."

4. *Sardin*, "year." Compare the Mongol *Zil*, Turkish *Sul*, "year," Medic *Sarak*, "time," Buriat *Sara*, "month."

5. *Targanon*, "branch." The nearest seems to be the Esthonian *türkan*, "to sprout forth."

6. *Mōos*, "the earth." In Vogul *ma* is "earth." Compare also the Sanskrit *Mahi*, the Akkadian *Ma*, Finnic *Maa*, Zirianian *Mu* (Hittite *Me*).

#### Phrygian Words.<sup>1</sup>

1. *Papa*, said to be a Phrygian god (Hippolytus), evidently means "father." Turkish *baba*, Mongol *babe*, Akkadian *Abba*.

2. *Ate*, *Atys*, Phrygian deity. Turkish *At*, Tartar *ata*, Medic and Akkadian *adda*, "father," "elder."

3. *Bekos*, "bread"—has been compared with *φayew*, "to eat."

#### Scythian Words.

These I find in Herodotus, who translates them.

1. *Aior*, "men." Compare the Akkadian *eri*, *uru*, "man," Turko-Tartar *er*, Mongol (Buriat) *ere*.

2. *Pata*, "slaying." Akkadian *Bat*, "slay." This is also an Aryan root *pat*."

3. *Papæus*, Jupiter. Compare the Phrygian *Papa*.

4. *Aschy*, a drink. Compare the Tartar strong liquor called *Shauju*.

5. *Apia*, "the earth." Compare the Georgian *obai*, "country," and the Tartar *ab*, *ob*, for an abode in every sense. Akkadian *ab*, "abode."

6. *Oetosyrus*, Apollo. Compare the Mongol *ul*, Akkadian *ul*, Turkish *ulan* for "day;" and Akkadian *Sir*, Mongol *Sar*, "light." Apollo being the Sun God, or "day-light."

We have here more than two dozen words referable to Turanian languages nearer to the Ugric on the west, in Lydia and Caria, and to the Tartar further east. Many more might be added from the ancient nomenclature of Asia Minor, but these may serve to show that in St. Paul's time the country was occupied by the same populations still found in Turkey and in Anatolia.

C. R. CONDER.

<sup>1</sup> The Cilician words are mainly names of deities, including *Ma* ("the earth" ?), whose high priest was called the Abakles, probably *Aba Kal-s*, "great priest." Compare the Buriat *Bo*, "priest." Akkadian *Aba*, rendered a "judge," Medic *Ibba*, "to judge," and perhaps the Malannir *Bakku*, "priest" (Tartar *baksi*), while *Kal* (Akkadian *Gal*) is a common word for "great."

<sup>2</sup> The Scythians called the Amazons *Aiorpata*, or "men slayers."

## ON COMPARISONS OF HIEROGLYPHICS.

THE idea of comparing the emblems of the four ancient hieroglyphic systems is not a new one. I endeavoured in 1883 to compare Hittite and Egyptian. In 1880 Prof. T. de Lacouperie compared a few Chinese and Cuneiform emblems, and has added other such comparisons in 1888. An excellent paper on the subject was published by the Royal Asiatic Society in 1887, written by Mr. G. Bertin.

The accompanying figures represent many new results in detail, and, as far as I know, the Hittite and Chinese have never been compared before.

Whether these four systems developed from one original system of rude picture-writing, or whether—as some urge—they are independent, it is still useful to compare them, especially as we may thus obtain meanings for Hittite signs. But until it is proved that the grammatical signs (pronouns, particles, &c.) are the same in two systems, it cannot be said that the connection is other than remote. I find on studying the systems in detail that there was no very close connection. Neither of the four systems can be said to be borrowed from the other. They are perhaps radiating developments from one centre. The Hittite seems to be the oldest, for several reasons: 1st, because it is less developed, having no included emblems, and few signs; 2nd, because the forms are less conventionalised; 3rd, because it has apparently no determinatives.

## PLATE I.

The Cuneiform emblems (second columns) are taken from Amiaud's decipherment of the Akkadian texts at Tell Lo (*circa* 2500 B.C.). The Hittite sounds are obtained from Cypriote as already published.

No. 1. Hittite *An*, Cuneiform *An*, "God"—a star (*see* No. 31, Plate II).

No. 2. Cuneiform *Si*, eye. Hittite probably *Is*, *si*, or *an* (*see* No. 2, Plate II, No. 4, Plate III, No. 1, Plate IV).

No. 3. Hittite *me*, Cuneiform plural sign (*see* No. 29, Plate II, No. 36, Plate IV).

No. 4. Hittite *Kon*, Cuneiform *Nan* "prince" (*see* No. 2, Plate IV).

No. 5. Cuneiform *En*, "Lord" (*see* No. 14, Plate IV).

No. 6. Cuneiform *Ma*, "ship" (*see* No. 3, Plate III).

No. 7. Cuneiform *Bara*, "altar" (*see* No. 19, Plate III).

No. 8. Hittite probably *Ke*. Cuneiform *ik*, "open" (*see* No. 8, Plate III, and No. 18, Plate IV).

No. 9. Hittite *Ku*, Cuneiform *aka*, "high," the royal cap.

No. 10. Hittite perhaps *Te*. Cuneiform *Da*, the hand raised (*see* No. 18, Plate II).

No. 11. Cuneiform *du*, "go," "become" (*see* No. 15, Plate II).

No. 12. Cuneiform *du*, "go" (*see* No. 15, Plate II, No. 30, Plate III).

No. 13. Cuneiform *su*, "hand" (*see* No. 1, Plate II, No. 7, Plate III).

	HITTITE.	AKKADIAN.		HITTITE.	AKKADIAN.
1			20		
2			21		
3			22		
4			23		
5			24		
6			25		
7			26		
8			27		
9			28		
10			29		
11			30		
12			31		
13			32		
14			33		
15			34		
16			35		
17			36		
18			37		
19					



No. 14. Hittite probably *To*, Cuneiform *Tak* and *du*, "have" (see No. 5, Plate II, No. 29, Plate III).

No. 15. Hittite *Dim*, Cuneiform *Dim*.

No. 16. Hittite, probably *Tam*, Cuneiform *Tam* or *ud*, "the day," or "sun" (see No. 24, Plate II, No. 23, Plate III).

No. 17. Hittite *Me*, "country," Cuneiform *Mat* and *Kur*, "country" (see No. 6, Plate II, No. 5, Plate III).

No. 18. Cuneiform *Tur*, "abide," "rest" (see No. 28, Plate II).

No. 19. Hittite *No* or *Mu*, Cuneiform *bab*, "oppose" (see No. 26, Plate II, No. 39, Plate III).

No. 20. Hittite, probably *Pa*, Cuneiform *Pa*, "long," apparently a flower-bud (see No. 13, Plate IV).

No. 21. Hittite *Mo*, Cuneiform *Mak*, "female" (see No. 33, Plate II).

No. 22. Hittite *O* or *Pa*, Cuneiform *U*, "superior," supposed to represent the firmament (see No. 16, Plate II, No. 34, Plate III).

No. 23. Hittite *Re*, Cuneiform *Mi*, "dark," supposed to represent rain (see No. 17, Plate II, No. 24, Plate III).

No. 24. Hittite *Tar*, *Tarka*, Cuneiform *Lul*, "chief" (also "stag" in Akkadian). *Dara*, and probably *Turakhu*, is another Akkadian word for deer. *Tarka* is Turkic and Mongol for "chief" (see No. 23, Plate II). The stag's head stands for *Tarka* "chief" on the Hittite bilingual.

No. 25. Hittite *Lu*, *Le*, Cuneiform *Lü*, "yoke."

No. 26. Hittite *Zo*, *Zo*, Cuneiform *Zi*, "spirit" (see No. 28, Plate III).

No. 27. Cuneiform *Kar*, "enclosure" (see No. 11, Plate II, No. 31, Plate III).

No. 28. Hittite, apparently *lo*, Cuneiform *bar*.

No. 29. Hittite *Le*, Cuneiform *Le* or *Lu*, "bull." The bull's head occurs also in Egyptian inscriptions.

No. 30. Cuneiform *Lig*, "dog." The Hittite may be a dog or a lion.

No. 31. Cuneiform *Lu*, "sheep."

No. 32. Hittite *Te*, Cuneiform *Pa*— apparently "flower" or "herb" (see No. 10, Plate II, No. 32, Plate III, No. 8, Plate IV).

No. 33. Cuneiform *Sar*, apparently the sacred tree, commonly shown on the monuments.

No. 34. Cuneiform determinative for "beast."

No. 35. Hittite *Ti*, Cuneiform *Ti*.

No. 36. Cuneiform *Dib*, "tablet."

No. 37. Hittite *Ri* (and *Bil*), Cuneiform *Ri*. In both systems it occurs as the name of a deity.

## PLATE II.

The Egyptian emblems (in the second column) are taken from Pierret's "Vocabulary," and in many cases occur also in Renouf's Grammar. For the most part they are used simply as determinatives, or pictures showing the class of the word they accompany, and as such are very common.

- No. 1. The Egyptian is used for the letter *t*, and for "hand."
- No. 2. Egyptian determinative for *eye*, with the words *sai* and *an*.
- No. 3. The Egyptian is a pot used for the word *nut* and for letter *n*, and attached to the words *a*, "wash," *aua*, "vase." The sound in Hittite is also *a*, from *a*, "water."
- No. 4. Hittite and Egyptian royal cap.
- No. 5. Egyptian determinative for "touch," "give" (*see back*, No. 14, Plate I).
- No. 6. Egyptian determinative for countries. Hittite *me*, "country."
- No. 7. Hittite *ga* or *ka*. Egyptian *hik* and *u*.
- No. 8. Hittite *sa*. Egyptian determinative for the word "sickle;" also used for letter *m*.
- No. 9. Hittite *Ta* ("beat"). Egyptian determinative for "words implying strength" (Renouf). It accompanies the Egyptian word *ta*, "to strike." (In Chinese also *ta* means "beat.")
- No. 10. Hittite *Te*. Egyptian determinative of plants (Renouf).
- No. 11. Egyptian determinative for house, accompanies the word *i*, "house."
- No. 12. Egyptian determinative for ship.
- No. 13. Egyptian determinative for "all actions performed by the mouth, such as eating, drinking, speaking" (Renouf). Hittite, probably *En* or *Ni* ("prayer" in Akkadian; *Medic Na*, "speak").
- No. 14. Egyptian determinative for head, top, or front.
- No. 15. Egyptian determinative for "words implying motion" (Renouf). The single leg stands for "walk," "climb," &c. (Pierret).
- No. 16. Egyptian emblem for heaven (*Pe* and *Pet*). (*See back*, No. 22, Plate I.)
- No. 17. Hittite *Re*. Egyptian determinative for sky, rain, air.
- No. 18. Hittite, probably *Te*. Egyptian determinative for "give."
- No. 19. Egyptian determinative for "twins" and "brotherly union" Pierret, "Vocab.," pp. 386, 510).
- No. 20. The Egyptian emblem of the rising sun (Renouf).
- No. 21. Egyptian emblems for "Isis," "throne," &c.
- No. 22. Egyptian emblem for "monument."
- No. 23. In Hittite *Tarka*, in Egyptian *hik*, both used to mean "chief" (*see back*, No. 24, Plate I).
- No. 24. Egyptian emblem for "sun," "day," &c.
- No. 25. The second Egyptian emblem accompanies the words *sau*, *sa*, "cut."
- No. 26. The Egyptian determinative for things, "contrary."
- No. 27. The Egyptian determinative for "flowing" (*e.g.*, "blood," "wound," &c.).
- No. 28. The Egyptian emblem of "stability" (*see back*, No. 18 Plate I).
- No. 29. The Egyptian plural (Renouf). The Hittite emblem is also a plural with sound *Me*.

	HITTITE.	EGYPTIAN.	HITTITE.	EGYPTIAN.	
1			19		
2			20		
3			21		
4			22		
5			23		
6			24		
7			25		
8			26		
9			27		
10			28		
11			29		
12			30		
13			31		
14			32		
15			33		
16			34		
17			35		
18					





	AKKADIAN.	CHINESE.		AKKADIAN.	CHINESE.
1			20		
2			21		
3			22		
4			23		
5			24		
6			25		
7			26		
8			27		
9			28		
10			29		
11			30		
12			31		
13			32		
14			33		
15			34		
16			35		
17			36		
18			37		
19			38		
			39		



No. 30. The Hittite emblem occurs as the name of a deity. The Egyptian stands for "day" (Pierret, "Vocab.," p. 152).

No. 31. Egyptian emblem for "star" or "god," &c. (*see back*, No. 1, Plate I).

No. 32. The Egyptian emblem of life. The Hittite *Ra*, apparently meaning "power." It is also suspended to the necklet of Assyrian kings.

No. 33. The Egyptian emblem accompanies the word *Mat*, "mother" (*see back*, No. 21, Plate I).

No. 34. Hittite, probably *Ti*. Egyptian has the sound *aa*, and is comparatively rare.

No. 35. The Egyptian determinative for pyramid, tomb, monument, &c. (Pierret.)

This comparison is purely ideographic, as Egyptian and Hittite are not of the same group of languages; but out of about 70 common determinatives used in Egyptian 33 have here been compared with Hittite emblems. Other emblems, such as the bull's head, the eagle, the lion, the serpent, the corn ear, the altar, &c., might be added, but are less interesting.

### PLATE III.

The cuneiform to the left is taken, as before, from the Tell Lo monuments. The Chinese is copied from the ancient *Soul* character, which occurs on monuments in 827-782 B.C. (*see J. R. A. S.*, North China Branch, 1874, p. 133), and is given by Dr. Chalmers ("Structure of Chinese Characters," 1882) with the Cantonese sounds, representing one of the oldest Chinese dialects ("Eitel Cantonese Dict.," 1877, p. xii). Of the 39 emblems compared, the first 10 are given by Prof. T. de Lacouperie in his recent paper on this comparison (1888). He gives about 30 in all, but I have omitted those which seem to me doubtful on various accounts, and the remaining 29 are, as far as I know, new suggestions.

No. 1. Cuneiform *Khu* determinative for "bird," and *Nam*, for "swallow" (as the latter is explained by Mr. Houghton). Chinese *chin* for a short-tailed bird, and *tiu* for a long-tailed bird (Chalmers). Prof. de Lacouperie compares *Khu* with *tiu*.

No. 2. Cuneiform *tur*, "son." Chinese *ma*, "twins." Prof. de Lacouperie compares *Tur* with *tok*, "son," which has only one, instead of two emblems.

No. 3. Cuneiform *Ma*, "ship." Chinese *Chau*, "a boat." The second Chinese emblem is not in Chalmers.

No. 4. Cuneiform *Si*, "eye." Chinese *muk*, "eye."

No. 5. Cuneiform *Kur*, "mountains." Chinese *shan*, "mountains."

No. 6. Cuneiform *Gut* (and *lu*) "bull." Chinese *ngo*, "bull."

No. 7. Cuneiform *Su*, "hand." Chinese *tso*, "left hand" (Chalmers, No. 37), *shua* or *soy*, "the hands" (No. 113). Prof. de Lacouperie gives the second.

- No. 8. Cuneiform *Ik*, "open." Chinese *hu*, "door."  
 No. 9. Cuneiform *Ban*, "bow." Chinese *kung*, "bow."  
 No. 10. Cuneiform *du*, "go." Chinese *to* (or *tsuuk*), "foot."

The additions which I propose are—

- No. 11. Cuneiform *us*, "man." Chinese *tai*. This is purely a pictorial comparison.
- No. 12. Cuneiform *zir*, "light." Chinese *pak*, "white."
- No. 13. Cuneiform *ti*, Chinese *chih*, "arrow" (see No. 22, Plate IV).
- No. 14. Cuneiform *nun*, "prince." Chinese *wong*, "king." Compare the Akkadian *uwun*, "prince."
- No. 15. Cuneiform *i*, "pure," representing, perhaps, rain. Chinese *chun*, "stream."
- No. 16. Cuneiform *Re*, "irrigate" — a field and water channel. Chinese *tin*, "a field." The relation, like the preceding, is purely pictorial.
- No. 17. Cuneiform *Ne*, "fire." Chinese *in* (and *yen*) "flame."
- No. 18. Cuneiform *ga*, "staff," apparently a reed. Chinese *tün*, a "young plant."
- No. 19. Cuneiform *bar*, "altar." Chinese *tsü* "altar."
- No. 20. Cuneiform *sana* and *se*, "corn." Chinese *shang*, "growth."
- No. 21. Cuneiform *tir*, "jungle." Chinese *chok*, "bush."
- No. 22. Cuneiform *tar*, "divide." Chinese *a*, "forked."
- No. 23. Cuneiform *ud*, "sun." Chinese *yat*, "sun." (N.B. Mongol *ud*, "day.")
- No. 24. Cuneiform *mi*, "dark." Chinese *yü*, "rain."
- No. 25. Cuneiform *suk*, "baggage." Chinese *päu*, "bundle."
- No. 26. Cuneiform *sa*, "middle." Chinese *chung*, "centre."
- No. 27. Cuneiform emblem of plural. Chinese *yam*, "many."
- No. 28. Cuneiform *Zi*, "spirit," "breath." Chinese *hi* (or *chi*), "vapour," "breath."
- No. 29. Cuneiform *tu*, "have." Chinese *cheung*, "take hold," and *chau*, "clutch."
- No. 30. Cuneiform *du*, "go." Chinese *chik*, "step."
- No. 31. Cuneiform *Kar*, "enclosure." Chinese *wai*, "enclosure," or "round."
- No. 32. Cuneiform *Dur*, "bondage." Chinese *taau*, "prisoner."
- No. 33. Cuneiform *Pa* (? "flower"), *Pu* (? "bud"). Chinese *put*, "vegetation;" *fung*, "vegetation."
- No. 34. Cuneiform *U*, "above." Chinese emblem of heaven and all superior things.
- No. 35. Cuneiform *idu*, "month." Chinese *üt*, "month." The words are alike, but the emblems have no resemblance.
- No. 36. Cuneiform *Khi* and *Sar*, "a measure," perhaps a vase. Chinese *chze*, "vase," and *fau*, an "earthen jar" (see No. 17, Plate IV).
- No. 37. Cuneiform *a*, "hand." Chinese *yau*, "right hand." The sounds are somewhat alike.
- No. 38. Cuneiform *As*, a "curse" or "charm;" supposed to mean

	HITTITE	CHINESE.		HITTITE.	CHINESE.
1			19		
2			20		
3			21		
4			23		
5			24		
6			25		
7			27		
8			28		
9			29		
10			30		
11			31		
12			32		
13			33		
14			34		
15			35		
16			36		
17			37		
18			38		
19			39		



something "bound." Chinese *chak*, representing a "bundle of documents."

No. 39. Cuneiform *bab*, "opposite." Chinese *ny*, used with words for "crossing" and "disaster." (Compare the use of this emblem in Egypt, No. 26, Plate II.)

A few of these comparisons are sufficiently remarkable, though many are only pictorial. The coincidence of sound is only found in a very few cases. The emblems are all common ones in the two systems, but it must not be forgotten that there are many important emblems in the two systems which have no connection, and that the compounds and numerals differ entirely. The connection is remote, and is with the earliest Akkadian emblems, which all stand upright in the line.

#### PLATE IV.

This comparison of 37 emblems is new, and for the most part it results from the facts gathered in comparing the known systems as given in the preceding tables.

No. 1. Hittite *Si*, *Is*, or *An*, Chinese *muk*, "eye."

No. 2. Hittite *Gon*, Chinese *Kon* and Chinese *wong*, "prince."

No. 3. Hittite *To*, Chinese *chau*, "clutch."

No. 4. Hittite *Se*, Chinese *tso*, "hand."

No. 5. Hittite, perhaps *Te*, Chinese *kwang*, "the arm."

No. 6. Hittite, perhaps "go," "run," Chinese *chik*, "stride."

No. 7. Hittite *Me*, "country." Chinese *shan*, "mountains."

No. 8. Hittite *Te*, Chinese *chit*, "sprout."

No. 9. Hittite *Gu* and *Vo*, Chinese *hau*, "speech."

No. 10. Hittite only once known (J. iii, last line), where the sound is unknown; presents a head with two small arms. Chinese *tsze*, "small," "child," used phonetically and also radically (Chalmers, p. 76).

No. 11. Hittite *U* or *pa*, Chinese emblem of heaven.

No. 12. Hittite *Ze* or *Zo*, Chinese *hi*, "breath."

No. 13. Hittite *pu*, Chinese *put*, "vegetation."

No. 14. Hittite, probably *En* (Khitai *Hain*), "throne," or "lord." Chinese *in*. Said, however, to mean a "rolling thing."

No. 15. Chinese *tsap*, "collection," apparently "mound."

No. 16. Hittite, probably *Zi* or *Uz*, Chinese *tiu*, "bird."

No. 17. Hittite *Pa*,<sup>1</sup> used phonetically. Chinese *fa*, also used phonetically as well as radically.

No. 18. Hittite, probably *Ke*, Chinese *hu*, "door," a key.

No. 19. Hittite *a*, "water," used phonetically. Chinese *yau*, "jar," used phonetically.

No. 20. Hittite *Ne*, "male," used phonetically. Chinese *lik*, "strength," used phonetically.

<sup>1</sup> Appears in the combination *Sag-pa*, "charm" (J. iii). *Pa*, *Ba*, in Akkadian. *Boi* in Tartar and Mongol, for "incantation." *Sag-ba* means, apparently, "chief charm."

- No. 21. Hittite, perhaps *Pi*, Chinese *pat*, used for "division."  
 No. 22. Hittite *ti*, used phonetically. Chinese *ting*, an important phonetic, and *chi*, "arrow."  
 No. 23. Hittite "flame" (*gi* ?), Chinese *chü*, "flame."  
 No. 24. Chinese *tu*, "rabbit," the emblem of the moon. In Hittite it is the name of a deity.  
 No. 25. Chinese *put*, "spread," "trample," used for "send."  
 No. 26. Chinese *ma*, "twins. (Compare the Egyptian emblem for "twins," No. 19, Plate II.)  
 No. 27. Chinese *muk*, "tree," is not unlike the Cuneiform *mu*. The Hittite appears to be a fruit tree such as is commonly shown on engraved gems.  
 No. 28. Hittite *Re*, Chinese *Yü*, "rain" (see No. 23, Plate I ; No. 17, Plate II ; No. 24, Plate III).  
 No. 29. Bull in each system.  
 No. 30. Chinese emblem for "contrary" (see No. 19, Plate I ; No. 26, Plate II ; No. 39, Plate III).  
 No. 31. Hittite *Pa*, Chinese *fung*, "vegetation."  
 No. 32. Chinese *tu*, "knife," common as a phonetic and also as a radical.  
 No. 33. Hittite, probably "go," Chinese "foot" (see No. 11, Plate I ; No. 10, Plate III).  
 No. 34. See what is said of No. 38, Plate III.  
 No. 35. Hittite, probably the sun, as is the Chinese.  
 No. 36. Hittite plural, Chinese "many" (see No. 3, Plate I ; No. 29, Plate II).  
 No. 37. Chinese *fai*, "viper."

These curious comparisons give more instances of similarity of sound than we get in Plate III, but none of the Hittite "weak roots" seem to be represented, and the connection is evidently somewhat remote. In the cases in which an emblem can be traced with the same ideographic meaning in Egyptian, in Cuneiform, and in Chinese it is only natural to suppose that it may have been used in Hittite with the same idea. This is confirmed in such a case as to "have," "take," "touch" by the sound obtainable for the Hittite from the Cypriote.

Thus I think we may conclude<sup>1</sup> that in Hittite, 1, star (*an*), means "God ;" 2, four strokes (*me*), "plural ;" 3, throne (*en*), "majesty ;" 4, foot (*da* ?), "go ;" 5, hand open (*se*), "favour ;" 6, hand grasping (*to*), "have," "take ;" 7, saltire (*no* or *mu*), "opposition ;" 8, firmament (*u*), "that, above ;" 9, zigzag (*zo*), "breath," "wind," "spirit ;" 10, hand with sceptre (*gon*), "rule ;" 11, hand to mouth (*En*), "saying ;" 12, hand with stick

<sup>1</sup> Many of these values I obtained already in 1883 by comparing Egyptian and Hittite (see *Quarterly Statement*). Shortly afterwards Wright's "Empire of the Hittites" was published, and in this Prof. Sayce gives the following values : foot, "go ;" hand grasping, "take ;" firmament, "superiority ;" hand to mouth, "speech." He also first recognised the deer' head for chief, and the emblem for country.



(*ta*), "beat," "cause," or "power;" 13, rain (*re*), "flow," perhaps phonetic; 14, two faces opposed, "twins;" 15, deer's head (*tarka*), "chief;" 16, jar (*pa*), probably phonetic; 17, hare or rabbit, probably the moon; 18, water pot (*a*), "water," and used phonetically; 19, two feet opposed, possibly "send;" 20, a bundle, or scroll, perhaps "charm." These conclusions in many cases seem independently established by other considerations (see my previous paper on the "Hittite Language"), but we obtain several valuable hints by observing the signification of similar emblems in the other systems, and there is at least a possibility that they all really grew out of one primitive picture system which was invented by the Turanians in Asia. Among the most certain Hittite signs we may now enumerate those for "god," "country," "sun," "king," "female," "male," "bull," "lion," "chief" (*Tarka*), "sheep," "tablet," "flame," "have," "go," "house," "spirit," "water," "beat," "grow," "ship," "head," "flow," "majesty," "moon," "life," "power," "word," "tree," "twin," "snake," with the personal pronouns, case endings, plural, verbal ending (*mak*), adjective ending, and negative—as mentioned in my previous paper ("Hittite Language"). The system is ideographic with phonetic additions—or agglutinated particles—but apparently with very few, if any, determinatives, and the signs enumerated above as explicable amount to 60 in all out of 120, including all those most commonly found, the sound being known in 40 cases.

C. R. C.

### KIRJATH JEARIM.

By an oversight, which I fear is my fault, on page 113 of the "Names and Places," the claim of the Rev. A. Henderson to the identification of Kirjath Jearim at 'Erma has been left unnoticed. In "Tent Work in Palestine" I proposed Soba, but Mr. Henderson convinced me that the border of Benjamin must have passed far south of the points then supposed to have been long since fixed. In 1881 I revisited 'Erma to ascertain the character of the site, and found (as noted in the Memoirs) that Mr. Henderson's view agreed well with local indications. A reference should be made in future editions to his papers, *Quarterly Statement*, January, 1878, p. 19, October, 1878, pp. 196-8.

C. R. CONDER.

### THE CONDUIT NEAR THE POOL OF BETHESDA.

HERR SCHICK, in his account of the Pool of Bethesda, describes the conduit lately discovered on the north of the Birket Israel; he says it is "in some places covered with thick flagging stones, in others with a kind of arch, consisting only of two stones placed in a slanting position one

against the other." This I take to be a very old form of an arch, if that term can be applied to it. The Queen's Chamber, in the great pyramid, is roofed with large stones placed exactly in this position, and above the lintels of the King's Chamber is a covering of the same kind. The entrance to the pyramid, although covered with flat stones, is protected by others above placed in the slanting position described by Herr Schick. In Stuart's "Athens" there is a representation of an old arch at Delos, which is similar. When I visited Solomon's Pools near Bethlehem, I was much interested in finding a rock-cut conduit, near to what is called the



Rock-cut Conduit,  
and Stone-roofed conduit  
Solomon's Pools  
W. Simpson  
March 1881

"Sealed Fountain," which was roofed in this manner. The entrance to this conduit was roofed with an arch, which I supposed was modern in comparison with the more primitive construction of slanting stones. Sir Charles Warren has pointed out from the Talmud that one of the gates of the Temple—the gate Tadi—was formed in this manner—"all the gates had lintels except Tadi; there two stones inclined one upon another."

It is impossible to assume any definite age from this peculiar form, but we may accept it as an indication of at least some antiquity; if even an approximate date could be formed, it might be of considerable value in some of the archaeological questions connected with Jerusa-

lem. With this is a reproduction of my sketch of the Rock-cut Conduit at Solomon's Pools.

WILLIAM SIMPSON.

## THE MIDDLE OF THE WORLD, IN THE HOLY SEPULCHRE.

HERR SCHICK has sent home very careful drawings of the particular object which marks, in the Greek Church of the Holy Sepulchre, the Middle of the World, or, as it is at times called, the Centre of the Earth. It stands on the mosaic floor under the dome of the Greek Church, a few paces to the east of the Holy Sepulchre, and is formed now of a vase, 1 foot 9½ inches high, with a stone ball placed on the top; this stone is round on the top, with stripes of another kind of stone inserted to mark the cardinal points.

Herr Schick describes the vase, or "cup," as he calls it, as being "of the reddish native Jerusalem stone; the ball is rather of a more white kind, and the stripes *a a b*, with the [pole] or small ball in centre, is of black stone."

The first reference which has been applied to the Middle of the

World is contained in Ps. lxxiv, 12 :

"For God is my King of old, working salvation in the midst of the earth." This has been quoted

by later writers in way of explanation; but the words may have a

sense of their own, and had no application to the Middle of the

World as understood afterwards.

The idea of Jerusalem being the Middle of the World is at least as

old as the fourth century. In that

quaint old book, "The Works of the Reverend and learned John

Gregory," who was chaplain to the Bishop of Salisbury in the time of

Charles I, there is a chapter on the subject of "Noah's Prayer," and the

writer quotes St. Ephrem in regard to the preservation of Adam's body

and its burial in "*the Middle of the Earth*, by a Priest of the most high

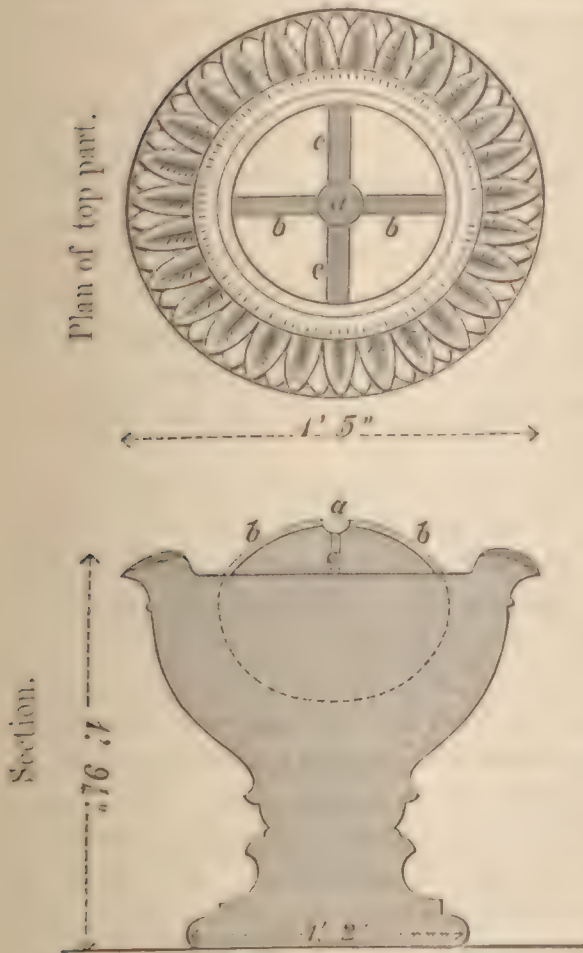
God. For *Adam* prophesied this reason for it, that there should be

the Redeemer of him and all his Posterity. The Priest who was to

officiate at this Funeral they say was *Melchisedec*, and that he buried

this body at *Salem*; which might very well be the middle of the

habitable world as then, and that



- a.* Seems to be the pole.
- b b.* The Equator.
- c c.* The Meridian.

it was indeed so afterwards, it hath been told you before;" p. 118. The notion of the Middle of the World is somehow connected with the supposition that Adam was buried at the spot; or at least near to it; the tradition is that he was buried under the rock of Calvary. The Mohammedans have a similar tradition about Adam having been buried in the Middle of the Earth. El-Masudi, in his "Meadows of Gold, and Mines of Gems," says, "God said to Sâm - Shem - "I will preserve him for ever, whom I make the guardian of the body of Adam." Sâm buried the coffin of Adam in the Middle of the Earth, and appointed Lamech as guardian." In this case Jerusalem was not the middle, for the Mohammedans believe that Adam was buried in

Mosque of El-Khayf, near Mecca. These two traditions seem to point to the conclusion that it is the supposed presence of Adam's body which gives the character to the spot.

St. Ephrem's words would show that the tradition in the Christian Church is as old at least as the fourth century. At a later period the references are numerous. Arculf visited Jerusalem about 700 A.D., and he "observed a lofty column in the holy places to the north, in the middle of the city, which, at mid-day at the summer Solstice, casts no shadow, which shows that this is the centre of the earth." One would suppose from the words that this column was somewhere in the town, and not in the Sepulchre; but the descriptions of the mediæval writers are very difficult to reconcile with each other. Compare the above with what Bernard the Wise says, who writes about a century and a half later; he describes four churches at the Holy Sepulchre, and between "is a parvis without roof, the walls of which shine with gold, and the pavement is laid with precious stone; and in the middle four chains, coming from each of the four churches, join in a point which is said to be the Middle of the World."

Sewulf, date A.D. 1102, says, "At the head of the church of the Holy Sepulchre, in the wall outside, not far from the place of Calvary, is the place called Compas, which our Lord Jesus Christ himself signified and measured with his own hand as the Middle of the World;" to this he adds the words of Ps. lxxiv, 12: "For God is my King of old, working salvation in the midst of the earth." The "Compas" is one of the names the spot is known by, as if it merely served to indicate the cardinal points, like a compass on a map. Herr Schick's drawing and description shows that it preserves this character to the present day. Sir John Maundevile, it need scarcely be stated, is not a reliable authority, still his book is full of what were current traditions of the time. His date is 1322 A.D., he says, "And in myddes of that Chirche is a Compas, in the whiche Joseph of Aramathie leyde the Body of our Lord, whan he had taken him down of the Croys; and there he wassched the Woundes of oure Lord: and that Compas, seye men, is the Myddes of the World." Chap. vii.

Another title which it had was the "Navel of the World;" in the maps of the middle ages this term is often given. The Abbot Daniel gives it this name; his date is A.D. 1106-1107. "Behind the altar, outside of the wall, is the 'Navel of the Earth,' which is covered by a small building on [the vault of] which Christ is represented in mosaic, with the inscription, 'The sole of My foot serves as a measure for the heaven and for the earth.'" (*Palestine Pilgrim's Texts; The Abbot Daniel*, p. 13.) Sandys, who was in Jerusalem in 1611, says, "Towards the west end from each side equally distant, there is a little pit in the pavement [which they say] is the Navell of the World, and endeavour to confirm it with that saying in Scripture, '*God wrought his salvation in the midst of the earth,*' the which they fill with holy water." This "little pit" of Sandys' is very different from the "lofty column" of Arculf's description. At

present it is a vase with a curved stone projecting, but Herr Schick's section shows that holy water might still be poured on it, and find a receptacle.

WILLIAM SIMPSON.

### THE SITE OF EBENEZER.

MANY years ago, after considerable study of the subject and repeated examination of the ground, I formed the opinion that the place of Ebenezer is now occupied by the village of Beit Ikse, and, notwithstanding that another site has been advocated by distinguished investigators, I still venture to think that this is the only spot which satisfactorily meets all the requirements of the case.

1. The spot should be "between Mizpah and Shen," and, as we may suppose, be a prominent and conspicuous spot. Such a spot is Beit Ikse. Taking Neby Samwil to be Mizpah, and Deir Yesin to represent Shen, an examination of the map will show that a line drawn from one to the other would intersect this village. It is also remarkable that owing to an opening in the hills a person standing at Deir Yesin and looking towards Neby Samwil has Beit Ikse in full view, although at a short distance the right or left it is not visible at all. From many other points it is very conspicuous, owing to its position near the summit of a hill abutting on the great valley of Beit Hannina, which is there very open.

2. The locality should be adapted for the camping ground of a large army (1 Sam. iv, 1), have a supply of water, be easily defensible, so situated as to render communications with the interior of the Israelite territory easy, and afford a ready means of retreat in the event of an unsuccessful battle with the Philistine invaders. All these characterise the position of Beit Ikse. The hill on which it is built is nearly surrounded by deep valleys, whose steep, and in some parts precipitous, sides render the place almost impregnable in that direction, whilst a narrow ridge connects it with the only road along which the Philistines could march to the attack, which road, moreover, would expose the flank of the attacking force to an assault from the side of Mizpah. There is some water at the place itself, still more at Neby Samwil, and an unlimited supply at the neighbouring fountain of Lifta, which must have been well within the Israelite lines.

3. There should be in the near neighbourhood some spot meriting the name of Apek, the stronghold, in which the Philistines could securely encamp, and from which they could make their attack on the Israelite position. Such a spot is Küstül, *castellum*, which commands the modern road between Jerusalem and Jaffa. To the north of the miserable hamlet called by this name there is a broad plateau which affords evidence of having been used for a camping ground in ancient times, being still

surrounded by the remains of a rampart of large stones. From this position the Philistines could march in great security along the summit of the hill, past the site of the present Beit Surik, until they came to where Biddu now is, when turning to the right they could direct their attack against either Mizpah or an enemy on the hill to the south, where Beit Iksa is situated.

4. The place should be so situated that a runner could reach Shiloh from it in a few hours. "There ran a man of Benjamin out of the army and came to Shiloh *the same day*," bearing news of the defeat of the Israelites, and loss of the ark. From Beit Iksa this might be accomplished by an eager and active messenger in four hours, or less; the distance being about eighteen miles. From Deir Abân Shiloh is eleven or twelve miles further.

5. Mizpah should be so situated that an attacking force, if badly beaten, seized with panic, and thinking only of escape to its own territory in the south-western plain, would naturally flee down the valley which passes "under Beth Car," and that the pursuing Israelites, especially if they happened to be imperfectly armed (Josephus, Ant. 6, 2, 2), would not deem it prudent to follow the fugitives further than that. The valley which divides the hill of Beit Surik from that on which Beit Iksa stands affords such a means of retreat from Neby Samwil, and it was probably down this valley, past 'Ain el 'Alík and 'Ain Beit Tulma, that the terrified Philistines (2 Sam. vii, 10, 11) reached the great watercourse which they knew would conduct them to their own country. Pressed by their pursuers, they would rush on by Motza (Kûlondeh) under their late camping ground at Aphek, over the boulders and rocks in the bed of the wady, and through the olive gardens at its sides, until they came "under Beth Car," which may be taken to be the village now called 'Ain Karim, where their foes would give up the pursuit, lest, becoming entangled in the narrow and stony valley, they should expose themselves to great risk in the event of the discomfited host rallying and turning upon them.

It may be objected to this identification that Neby Samwil has never been *proved* to be Mizpah, Deir Yesin Shen, or 'Ain Karim Beth Car. Yet, when all the circumstances connected with the events narrated being taken together support this theory; when it is found that the ancient names of two of the places are still retained; when it is remembered that the position of Neby Samwil and the tradition connecting it with that prophet are by almost all investigators held to favour the supposition that it is Mizpah; and when it is considered that the identification of each of these four places in a very remarkable manner supports that of the others, there is surely a strong presumption that we need go no further in search of the site of this famous monument of the last of Israel's Judges.

It may not be altogether idle to enquire why Samuel placed his memorial "between Mizpah and Shen" instead of at Mizpah. The latter was not only a very conspicuous spot, as its name implies, but it was also a seat of government, and a centre of the religious life of the people. It

was not to Shiloh, where the Tabernacle was, but to Mizpah that Samuel gathered all Israel and drew water and poured it out before the Lord and prayed to the Lord for them. Perhaps the answer to such an enquiry is, that he placed his monument where the ark of God had once stood. We are taught in the second book of the Chronicles (viii, 11) that a place whereunto the ark of the Lord had come was regarded as holy, and what more natural, after the signal deliverance which had been experienced, than that the great ruler and guide of the nation should erect "the stone of help" upon the spot once sanctified by the sacred emblem of the Divine strength? Josephus tells us the stone was called *ισχυρος*, "the stone of strength." In Psalm lxxviii, 61, we have "and delivered *his strength* (*i.e.*, the ark) into captivity;" and again in 2 Chron. vi, 41, "arise, O Lord God, into Thy resting place, Thou and the *ark of Thy strength*;" in the Septuagint *ἡ κιβωτος τῆς ἰσχυροῦς σου*. If the memorial came to be called in late times by its Greek name, it is not impossible that in *Iksa*, a word the derivation of which no one seems to know, we have a corruption of *ischuros*, like 'Amwas of Emman, Nablus of Neapolis. I have heard the place called Beit Iksa, and a Mohammedan Sheikh once told me that that is the right name. The point is not of importance. The tendency of the Arabs to transpose consonants is well known.

It would seem that this idea of Ebenezer having marked the place on which the ark was once set misled Eusebius and his translator into supposing that the monument occupied the spot to which the Philistines brought back the ark. It is needless to say that there is no indication of this in the Bible; and it may reasonably be supposed that if Samuel had erected his trophy at Bethshemesh, or in the field of Joshua the Bethshemite, the narrative would have said so.

I have often questioned with myself whether these struggles with the Philistines did not (as some seem to suppose) take place nearer to the Philistine frontier than Neby Samwil and Beit Iksa are. But I find no confirmation of this suggestion in the sacred text. Other important battles against the same foes took place still further in the heart of the Israelite country, as at Michmash and on Mount Gilboa.

THOMAS CHAPLIN, M.D.

#### NOTE.

Dr. Chaplin having kindly sent me the proof of his paper on Ebenezer, I have only one or two remarks to offer on the subject.

I do not hold it to be proved that Deir Abân is Ebenezer, but, as I have pointed out in the "Memoirs," Deir Abân is the place which Jerome supposed to be Ebenezer. It is quite possible that Jerome was wrong in this as in other cases. The site of Mizpah is uncertain, as it may be either at Neby Samwil or perhaps at Shâfât. The identity of Shen and Deir Yasin seems to me doubtful, because names with Deir preceding are usually of Christian origin. 'Ain Kârim is, I believe, the Biblical Beth

Haccereh, but it might be Beth Car also. On two occasions I have searched the country south of Neby Samwil, hoping to find some monument such as Ebenezer, but we never found anything of the kind. I agree with Dr. Chaplin, however, in thinking that the distance from Deir Abân to Shiloh is an objection to the 4th century traditional site.

C. R. C.

### ANTIOCH IN 1051 A.D.

In a recent number of the *Quarterly Statement* (April, 1888, p. 66) Mr. Greville Chester has given an interesting account of the extant ruins of Antioch. The modern Turkish town, which Mr. Greville Chester visited during the autumn of last year, has preserved but few remains of the old Byzantine capital of the East. Earthquakes, for which the territory of Antioch has always been ill-famed, have thrown down most of the ancient buildings, and, for the rest, the Turks have destroyed the great city walls and carried off the stones of both temples and churches to build into their hovels.

Of the great Christian city, while still in the hands of the Greeks, and prior to the Arab conquest and the subsequent Latin occupation, so few records have come down to us that I have thought the following account, written during this early period by the Physician Ibn Butlân, may be worthy of publication.

During the centuries that succeeded the first Arab conquest Antioch, more even than the other great towns of Syria, suffered by the fortunes of war. Previous to that epoch, though sacked by the Persian Chosroes, Sapor, in A.D. 260, she had remained, without rival, the Eastern capital of the Byzantine Cæsars. In 635, however, Antioch shared the fate of all other places in Northern Syria, and fell into the hands of the all-conquering Arabs; but, unlike the cities and territories to the south, Antioch, together with Adana, Tarsus, and Mopsuestia, was retaken before thirty years had elapsed by the army of Nicephorus Phocas (A.D. 353, A.D. 964).<sup>1</sup> During the next hundred and twenty years (A.D. 964 to 1084) Antioch remained to the Byzantines, resisting all the attacks of the Muslims, and it was during the latter part of this period that the city was visited by Ibn Butlân.

In 1084 the citadel was at last betrayed into the hands of Sulaimân ibn Kutlimish, the Saljûk Sultan of Iconium. Fourteen years later, however, Antioch was retaken by the first Crusading armies, in 1098, after a siege which had lasted nine months, and which had been characterised by many extraordinary and miraculous events. Antioch then remained a Christian principality for the next hundred and eighty years, but in the end, after the Franks had been driven out of all the remainder of Syria, this last stronghold, too, fell (1268 A.D.) before the arms of the Egyptian Sultan Baibars, and it has since remained in the hands of the Muslims.

<sup>1</sup> See Gibbon, ch. lii, end.



The present account, descriptive of the city about A.D. 1051, while still (after the first short Arab occupation) in the hands of the Byzantines, is translated from the Arabic text given in Yâkût's great "Geographical Dictionary,"<sup>1</sup> which latter work was written in A.D. 1225. Yâkût quotes the account verbatim from the "Epistle" (*Risâlah*) which Ibn Butlân addressed to his friend, Abu-l Husain Hillâl ibn al Muhsin as Sâbî, at Bagdad. The "Epistle" was written "in the year 440 and odd," says Yâkût; the date, however, mentioned incidentally in the course of the narrative, shows that Ibn Butlân must have passed through Antioch during the year 443, *i.e.*, A.D. 1051. Ibn Butlân was a well-known Christian Arab physician, and a native of Bagdad. In A.H. 439 (A.D. 1047) he set out from that city to visit his Egyptian rival, the physician Ibn Rudhwân, at Cairo, and, going thence to Constantinople, took his return journey through Antioch. Here, age and the vanity of human wisdom caused him to abandon the world, and he became a monk, dying very shortly afterwards at Antioch, in the year 444 A.H. (1052 A.D.).<sup>2</sup>

In Hajji Khalfah's "Bibliographical Dictionary" mention is made of a medical work by Ibn Butlân which appears to have enjoyed some celebrity,<sup>3</sup> but no notice is taken of his "Epistle," of which, to the best of my knowledge, no MSS. are known in Europe, and which therefore is only available to us in the extracts inserted by Yâkût in his "Geographical Dictionary." He writes as follows:—

Says Ibn Butlân, in the Epistle he wrote to Abu-l Husain Hillâl ibn al Muhsin as Sâbî, at Bagdad, in the year 440 and odd:—

"We left Halab (Aleppo) intent on journeying to Antâkiyyah (Antioch), and the distance is a day and a night's march; and we found all the country between Halab and Antâkiyyah populous, nowhere ruined abodes of any description. On the contrary, the soil was everywhere sown with wheat and barley, growing under the Olive trees; the villages ran continuous, their gardens full of flowers, and the waters flowing on every hand, so that the traveller makes his journey here in contentment of mind, and peace and quietness."

\* Antâkiyyah is an immense city. It possesses a wall and an outer wall (*Jisr*). The wall has 360 towers, and these are patrolled in turn by 4,000 guards, who are sent to Antâkiyyah every year from the presence of the King in Constantinople, as warrant for the safe-keeping of the city, and in the second year they are changed. The plan of the city is that of a semicircle; its diameter lying along the mountain,<sup>4</sup> and the city wall climbs up over the mountain to its very summit; and further the wall completes the semicircle (in the plain below). On the summit of the mountain, but within the wall, is a castle (*Kal'ah*), which appears quite small from the city below on account of its distance up; and this

<sup>1</sup> Mu'jam al Buldân, ed. Wüstenfeld, vol. i, pp. 382-385.

<sup>2</sup> See Wüstenfeld: Geschichte der Arab. Aerste, p. 78, No. 133.

<sup>3</sup> Hajji Khalfah, vol. iii. p. 229, No. 5087.

<sup>4</sup> Mount Silphius. For an account of the present condition of these walls see Mr. Greville Chester's paper, p. 67.

mountain shades the city from the sun,<sup>1</sup> which only begins to shine over it about the second hour (of the day). In the wall surrounding (the city), and in the part not on the mountain, are five gates."

"In the centre of the city is the Church of Al Kusyân. It was originally the palace of Kusyân the King, whose son, Futrus (St. Peter), chief of the Disciples, raised to life.<sup>2</sup> It consists of a chapel (*Haikal*), the length of which is 100 paces and the breadth of it 80, and over it is a Church (*Kanîsah*) supported on columns, and all round the Chapel are colonades in which the Judges are seated to give judgment, also those who teach grammar and logic. At one of the gates of this church is a Clepsydra (*Finjân*) showing the hours. It works day and night continuously, twelve hours at a round, and it is one of the wonders of the world."

"In the upper portion (of the city) are five terraces, and on the fifth of these are the baths, and gardens, and beautiful outlooks. You may hear in this spot the murmuring of waters, and the cause thereof is that the waters run down to this place from the mountain which overhangs the city. There are in Antâkiyyah more churches than can be counted; every one of them ornamented with gold and silver and coloured glass, and paved in squares. In the town is a Bîmâristân (or Hospital), where the Patriarch himself tends the sick, and every year he causes the Lepers to enter the bath and washes their hair with his own hands. Likewise the King also does this service every year to the poor. The greatest of the lords and patricians vie in obtaining of him permission after the like fashion to wash and serve these people. In this city there are hot baths, such as you can find the equal nowhere else, in any other town, for luxury and excellence; for they are heated with myrtle wood (*al âs*), and the water flows in torrents and with no scant. In the Church of Al Kusyân are innumerable servants who all receive their daily rations, and there is an office (*dîwân*) for the expenditure and receipts of the Church, in which office are some ten or more accountants."

"Some year and a part ago a thunderbolt struck the Church, and the manner of its doing so was most extraordinary. Now at the close of the year 1362 of Alexander, which coincides with the year 442 of the Hijrah (1050 A.D.), the winter rains had been heavy, and some part of the days of the month Nisân (April) were already past, when, on the night whose morrow was Saturday, the 13th of Nisân, there came thunder and

<sup>1</sup> The mountain is to the south of Antioch.

<sup>2</sup> The church here alluded to must, I imagine, be that dedicated to SS. Peter and Paul, and built by the Emperor Justinian, where, in later times (according to the traveller Willebrand, of Oldenburg), the Latin Princes of Antioch were buried. Who is referred to under the name *Kusyân* I have been unable to discover, neither do I know of any mention of St. Peter having raised a king's son to life at Antioch. Perhaps some reader of the *Quarterly Statement* more versed than myself in the Apocryphal gospels may be able to give us light on this point. According to Church tradition, based on Gal. ii, 11 *et seq.*, St. Peter was Bishop of Antioch before going to Rome.

lightning such as had never been known in the present time, nor remembered nor heard of in the past. The claps of thunder were oft repeated, and so terrible as to cause the people to cry out in fear. Then, on a sudden, a thunderbolt fell and struck a Shell<sup>1</sup> which screens the altar (in the Church) of Al Ku-yân, and it split from off the face of this Christian (emblem) a piece like what might be struck off by an iron pick-axe with which stone is hewn. The iron cross, too, which was set on the summit of this Shell, was thrown down (by the stroke), and remained on the place where it fell; and a small piece also was cut off from the Shell. And the thunderbolt descended through the crevass in the Shell, and travelled down to the Altar along a massive silver chain, by which is suspended<sup>2</sup> the Censer; now the size of this crevass was of two finger-breadths. A great piece of the chain was broken off, and part of it was melted, and what was melted of it was found dropped down on the surface of the ground below. A silver crown which hung before the table of the Altar was also thrown down. Beyond the table (of the Altar), and to the west of it, stood three wooden stools, square and high, on which were usually set three large crosses of silver, gilt, and studded with precious stones; but the night before they had removed two of the crosses, those on either side, taking them up to the Church Treasury, and leaving only the middle cross in its place. Now the two stools on either side were smashed (by the thunderbolt), and the pieces sent flying over and beyond the Altar—though here there was seen no mark of fire, as had appeared in the case of the chain—but the stool in the middle remained untouched, nor did anything happen to the cross that was set thereon.”

“ Upon each of the four marble columns which supported the silver dome covering the table of the Altar was cloth of brocade, wrapping round the column. Each one of these suffered a greater or lesser stroke (from the thunderbolt), but the stroke fell in each case on a place (in the cloth) where it had been already worm-eaten and worn to shreds; but there was no appearance as though flame had scorched it, or that it had been burnt. The table (of the Altar) was not touched, nor was any damage done to the (altar) cloths upon it; at least, no sign of it was to be seen. Some of the marble (slabs) which were in front (below) the table of the Altar were struck as though by the blow of a pick-axe, and the mortar

<sup>1</sup> The word in the text is *Sadafah*, which the dictionaries translate “a shell, particularly of a kind found in the Red Sea.” What Church vessel or ornament is here intended I cannot tell, but perhaps some who are well acquainted with the details of the Greek rite would be able to throw some light on the matter. *Sadafah* (written without vowels, the first letter being the guttural s, *Sad*) may possibly not be an Arabic word, but merely the transcription of the Greek name of some church ornament. I can, however, find nothing in Du Cange to answer to *Sadafah*, *Sadafah*, or *Sidafah*, &c.

<sup>2</sup> The word given in the text is *al Thumiyatûn*, evidently not an Arabic word. In Du Cange (Gloss. Mediae et Infimae Graecitatis. Ludg. Bat. MDCLXXXVIII, p. 502). I find “*Ouyuarôn*, Thuribulum (a censer), *Acerra* (a casket for incense),” which I take to be the object intended.

and lime setting thereof (was cracked). Among the rest was a large slab of marble, which was torn from its bed and fractured, and thrown up on to the square top of the silver dome covering the table of the Altar, and here it rested, the remaining pieces of the marble being torn from their bed and scattered far and near. In the neighbourhood of the Altar was a wooden pulley, in which was a hemp rope—quite close to the silver chain which had been broken, and part of it melted—and (to this rope was) attached a large silver tray, on which stood the bowls<sup>1</sup> of the glass lamps. This tray remained untouched, none of the lamps were overturned, nor aught else; neither did any damage happen to a candle that stood near the two wooden stools (formerly mentioned). The greater part of these wondrous occurrences were witnessed by many who were in Antákiyyah.”

“Outside the city, on the night of Monday, the 5th of the month Áb (August), of the year before mentioned, there was seen in the heavens the likeness of a window, through which light shone out broad and glittering, and then became extinguished. The people waited till morning, expecting some event therefrom. And after a time news came that in the early part of the day of that Monday, at the City of Ghunjurah,<sup>2</sup> which lies in the Greek country, and is nine days’ journey from Antákiyyah, terrible earthquakes had taken place, following one another continually. The greater number of the houses (of this city) had been thrown down, and a piece of ground outside the town had been swallowed up, while a large church and a fine fortress which had stood there had both disappeared, so that no trace remained of either. From the crevass extremely hot water had been thrown up, flowing forth from many springs. It had drowned 70 farmsteads; and the people fleeing therefrom had escaped for safety to the hill tops, and high places around. The water covered the surface of the ground during seven days, spreading round about the city for the distance of two days’ journey. After that time it disappeared, and the place where it had been became a swamp. A number of those who were witnesses of these events testified thereto, and the people of Antákiyyah reported to me all that I have here set

<sup>1</sup> In the text the word is *firákh*, which means literally “chickens” of the glass lamps. The word, however, has other meanings, as *arch-way*, *folio of paper*, &c., and must, I imagine, be taken here in the sense of a *bowl* or other vessel, in which the wick of the lamp was set.

<sup>2</sup> Gunjurah is, I conclude, the town of Gangra, the capital of Paphlagonia, and the Metropolitan See of the province. Yakût does not mention Gunjurah elsewhere. The geographer Kaswîni (Wüstenfeld’s ed. of the text, vol. ii, 368) says that Gunjurah is a city in the Greek Territory and stands on the river called *al Maklûb* (the overturned river)—a name also given to the Orontes, as stated below, because it flows from south to north, contrary to the habit of other rivers. This river *al Maklûb* must be the name of one of the affluents of the Halys, which flows north into the Euxine, on which the town of Gangra is built. Kaswîni then proceeds to give the story of the great earthquake and inundation in much the same words as those found in our text.

down. They related further, that when the inhabitants had carried up their goods to the hill tops, the ground rocked so by the mighty earthquake that their chattels came rolling down again to the level earth below.\*

\* Outside the city (of Antâkiyyah) is a river called Al Maklûb<sup>1</sup> (meaning the Overturned, because) it takes its course from south to north. It is of the size of the Nahr Tsâ (in Babylonia). There are, along its bank, mills, and it waters the gardens and grounds (of the city)."

(Saith Yâkût), so ends what we have transcribed from the work of Ibn Butlân.

GUY LE STRANGE.

### THE MUSLIM LEGEND OF THE CAVE OF THE SLEEPERS.

THE story of the Companions of the Cave is one that from earliest times has proved a favourite with the Muslims. This probably was in the beginning due to the fact that the Prophet had set the incidents connected with the legend of the Seven Sleepers of Ephesus to illustrate one of the didactic chapters of the Koran. The Christian legend will be found related at length in the *Acta Sanctorum* of the Bollandists, under date of July 27th. (Tomus vi, p. 375. *de SS. Septem Dormientibus*.)

Briefly the account given is that in the year 250 A.D., during the reign of the Emperor Decius, there lived at Ephesus seven young men, brothers, and ardent Evangelists, whose names, as given in the Roman martyrology, were: Maximilianus, Marcus, Martinianus, Dionysius, John Scapion and Constantinus. In order to escape the persecution then being directed against the Christians, they hid themselves in a cave in Mount Cælian. On being discovered by their persecutors they were walled up in the Cave, and there took sleep in the Lord. In the year 470, under the Emperor Theodosius, their bodies were discovered and ultimately were brought to the Church of St. Victor, in Marseilles, where they now lie.

The legend was apparently of Syrian origin. It has given its name to the 18th chapter of the Kuran, of which the following verses are the most important:—

Verse 8.<sup>2</sup>—Hast thou reflected that the Inmates of the Cave and of Ar Raqm were one of our wondrous signs?

Verse 9.—When the youths betook them to the Cave they said "O, our Lord! grant us mercy from before Thee, and order for us our affair aright."

Verse 10.—Then struck we upon their ears (with deafness) in the Cave for many a year.

<sup>1</sup> The Orontes.

<sup>2</sup> Quoted from Rev. J. M. Rodwell's translation.

Verse 16.—And thou mightest have seen the sun when it rose pass on the right of their Cave, and when it set leave them on the left, while they were in its spacious chamber.

Verse 17.—And thou wouldest have deemed them awake though they were sleeping ; and we turned them to the right and to the left. And in the entry lay their dog with paws outstretched. Had'st thou come suddenly upon them thou wouldest surely have turned thy back on them in flight, and have been filled with fear at them.

Verse 18.—Then we waked them that they might question one another. Said one of them, "How long have ye tarried here?" They said, "Your Lord knowest best how long ye have tarried ; send now one of you with this your coin into the city, and let him mark who therein hath purest food, and from him let him bring you a supply ; and let him be courteous and not discover you to any one.

Verse 19.—For they if they find you out will stone you, or turn you back to their faith, and in that case it will fare ill with you for ever."

Verse 20.—And thus we made their adventure known to (their fellow-citizens), that they might learn that the promise of God is true.

Verse 21.—Some say they were three, their dog the fourth ; others say five, their dog the sixth guessing at the secret, others say seven, their dog the eighth.

Verse 24.—And they tarried in their cave three hundred years and nine years over.<sup>1</sup>

During the course of the last twelve months, while getting together the materials for a book which, it is hoped, will contain all the important notices of Palestine and Syria that occur in the works of the mediæval Arab geographers, I have had occasion to devote much of my attention to the pages of Yâkût's great "Geographical Encyclopædia." Of Yâkût, his life, and his works, I have given some short account in a recent paper in this journal.<sup>2</sup> The prodigious extent of Yâkût's labours, however—for the book gives a detailed account of all the countries and towns in Muslim lands (as matters stood in the 13th century) from Spain in the west to beyond Transoxiana and India in the east—is but little known beyond the narrow circle of Semitic scholars, for the work has never been translated. Some idea of the mass of information, both geographical and historical, therein contained may perhaps be gathered from the statement that the Arabic text, as printed at the cost of the German Oriental Society, covers close on *four thousand* pages, large 8vo.; an English translation, with the needful notes, would therefore occupy from double to treble that space.

<sup>1</sup> They entered the cave under Decius, and awoke in the time of Theodosius, according to the Christian tradition, *i.e.*, about 220 years, which does not agree with the 309 years of the Kurân. See Gibbon, "Decline and Fall," at the end of chapter xxxiii.

<sup>2</sup> *Quarterly Statement* for January, 1888.

Scattered up and down the volumes of *Yâkût*, under various headings, are many curious details relating to the legend of the Seven Sleepers, and these I have now brought together for purposes of comparison with accounts derived from other early Muslim writers.

Starting with the verses of *Kurân*, before quoted, where "The Cave and Ar Rakîm" are mentioned, the Muslims were much exercised in their minds as to what signification should be attached to the word *Ar Rakîm*. According to one account ("Yâkût," ii, p. 805), *Ar Rakîm* was said to be "a tablet of lead on which were inscribed the names of the men of the Cave, and their history and the date of their flight." The authority of the great traditionist Ibn 'Abbas, is, on the same page, given in support of the view that *Ar Rakîm* was the name of the Cave, which, it is further stated, "lay between 'Ammariyah (Amorium) and Nikiyah (Nicaea), being ten or eleven days' journey from Tarsus." Other authorities, however (says *Yâkût*), hold *Ar Rakîm* to be either the name of the village where the youths lived, or of the mountain in which the cave was to be found. Or, says *Yâkût*, at another place (ii, 175), "*Jairam*, is said to be the name of the Cave of the Sleepers."

The same 'Ibn Abbas ("Yâkût," ii, 805) further states that the names of the Seven Sleepers were these:—*Yamlikhâ* (Jamblichus), *Makimilnâ* (Maximilianus), *Mashilnâ* (Marcellus?), *Martûnûs* (Martianus), *Dabriyûs* (Dionysius? or Demetrius?), *Sirabiyûn* (Serapion), and *Afastatiyûs* (Exustadianus?). The name of their dog being *Kitmir*, and of the king from whom they fled *Dakyânûs* (Decianus, a mistake for Decius). The name of their city is given, very correctly ("Yâkût," ii, 806), as *Afasûs* (Ephesus); *Ar Rakîm* being here the name of the cave, and *Ar Rass* the name of the village where the youths dwelt. In a previous article, however ("Yâkût," i, 91), we find another spelling:—"Abasûs, a ruined city of the country of the Greeks, from which the Companions of the Cave came. It is said to be the City of *Dakiyânûs*, and it lies near *Abulustain*." Two pages further on (*op. cit.*, i, p. 93) *Abulustain* is given as "a celebrated city in the Greek country, near to which is *Ar Rakîm*." *Abulustain*, near Ephesus, is the place at the present day called *Al Bustân*. In the last volume of "*Yâkût*" (vol. iv, p. 1040), "*Yanjâlûs*" (evidently a Greek name) is stated to be the name of the mountain in which lay the Cave of the Sleepers, but some doubt is expressed as to where the mountain was situated.

Besides the neighbourhood of Ephesus, *Yâkût* localises the legend in two other places, namely, in the trans-Jordanic province of the *Balkâ*, and in Spain. In the latter country, says "*Yâkût*" (vol. ii, p. 125, and also p. 306), "some say the Cave and *Ar Rakîm* are to be found at *Jinn al Ward* (the Gardens of the Rose), in Andalusia, and that *Tulaitalah* (Toledo) is the City of *Dakiyânûs*—but God knows best." Of *Ar Rakîm*, in the *Balkâ*, a curious story relating to a cave will be found given in "*Mukaddasi*" (p. 56 of my translation, Pal. Pil. Text Soc.), which, however, is not of sufficient importance to be quoted over again in this place.

Dating from the early days of Islam, we have two separate and very

circumstantial accounts of visits to certain caves in Asia Minor, said in each case to have been the particular Cave of the Sleepers. They are both quoted by Yâkût. One dates from the days of Abu Bakr, the successor of Muhammad; the other visit is related as having taken place about two centuries later under the Abbaside Khalif of Baghdad, Al Wâthik, grandson of Harun ar Rashid.

Of the first account the following is a translation :—

(“Yâkût,” vol. ii, pp. 806, 807.)

Ubâdah ibn as Sâmit relates as follows :—“Abu Bakr as Siddik despatched me, the year he became Khalif (A.H. 11, A.D. 632) to the King of Rûm to exhort him to receive Islâm, or else to declare him war.”

‘Ubâdah continues :—“We journeyed until we entered the country of the Greeks, and when we were approaching Constantinople, there appeared before us a red mountain in which they said were the Companions of the Cave, and Ar Rakîm. So we turned aside to a monastery and enquired of the people thereof concerning them; and they pointed out a passage in the mountain. Then we told them that we wished to see the (Companions of the Cave). They said ‘give us somewhat,’ and we gave them Dinârs. Then they entered the passage, and we entered after them, and there was herein a door of iron which they opened, and they brought us to a mighty chamber (*baît*), hollowed in the mountain in which were thirteen men, lying on their backs, as though they were asleep. They all were covered from head to foot with dust-grey cloaks and shirts. We could not discover whether their clothes were of wool or of hair, or of what other material, but the texture was harder than brocade, and crackled from their thickness and the excellence of the stuff. We saw that most of them had on boots (*khufâf*), reaching up to the middle of the leg, but some were shod with sandals (*na’âl*) sewn together. Both the boots and the sandals were of excellent sewing, and the leather was such as the like I have not seen elsewhere. We uncovered their faces, one after the other, and lo! in all was the complexion of healthful bloom, and of red blood (in the cheeks) as is the appearance of a living man. Of some (the hair) was turning grey, and some were in their youth with black hair, some had flowing locks and some were shaven. Their stature was that of ordinary Muslims. When we came to the last of them we beheld that his head had been cut off with a sword-stroke, and it was as though it had been struck off that very day. We enquired of those who had conducted us hither, what they did with these men. They replied, it was their wont to come in here on the festival day of (the Companions of the Cave), when the people of all the country would assemble at the gate of the cave, coming in from all the towns and villages around; and that then, during some days, they would stand the dead men upright in order to clean them, and shake the dust from their cloaks and shirts, also they pared their nails, and cut their moustaches; and after this they laid them down once more in the position in which we now saw them.

“Then we enquired of our guides as to who these men had been, and



what had been their office, and how long they had lain in this place. The guides answered us they had found in their books that these men had lain in this place since 400 years before the Coming of the Messiah—peace be upon Him—and that they had been Prophets, sent at a certain time, and that they knew naught more of their condition but this.”

Says 'Abd Allah (Yâkût), the poor servant (of God) :—“ All this have I copied from the work of a man of trust, but Allah alone knows if it be true.”

A similar account to the one just quoted (of 'Ubâdah's visit) is given in almost identical terms by Mukaddasi (*see* p. 6 of my translation, published in the “Palestine Pilgrims Texts”), with, however, the following variants :—Mukaddasi, writing in A.H. 375, A.D. 985, states that his account is from a certain *Mujâhid ibn Yazid*, who accompanied Khâlid al Barîdî to Constantinople, in A.H. 102, A.D. 720, that is about ninety years later than the above-mentioned expedition by 'Ubâdah. The details of what was seen are, however, in the main identical with the first account—as regards the appearance of the men, their clothes, the nail-paring, &c., and the feast-day when the country people came to visit them. The cave, on the other hand, is stated to have been situated in the mountains at Al Hawiyyah, not far from Laodicea Combusta, between Armorium and Ieonium, and the guardians further gave the following account of “the Prophet” whose head had been cut off.

(Translation of Mukaddasi, p. 7).

They answered, saying, “ When the Arabs came down on us and took possession of Al Hawiyyah, we gave them this information concerning these dead men, but they would not believe us, and one of the Arabs struck the head off this body.”

With these two accounts of visits in A.H. 11, and in A.H. 102, may be compared the account of the Astrologer Musa, whose visit took place more than a century later than that of Mujâhid.

(“ Yâkût,” vol. ii, pp. 805, 806).

It was (the Khalif) Al Wâthik (A.H. 227–232, A.D. 842–847), who sent Muhammad Ibn Mûsâ al Munajjim (the Astrologer) to the countries of the Greeks to discover the Companions of the Cave and Ar Rakîm. This (Muhammad, the Astrologer) reports (of his journey as follows) :—“ And we reached the country of the Greeks, and lo ! before us was a small mountain, the base of which was not more than a thousand ells (round). In its side is a passage, and you enter by this passage and pass through a tunnel in the ground for the distance of three hundred paces, when you arrive at a portico (*Riwâk*). This is in the mountain ; it is supported by columns cut out (of the rock. In the rock) are numerous chambers (*bait*), and among them one with a tall door-way, of man's height, closed by a stone gate. It is here the dead men lie. There was one in attendance who guarded them, and with him were eunuchs. The guardian would have turned us aside from seeking to see the dead men, for he said, that of a surety he who went down to seek them would

receive some bodily injury. But by this dissimulation he sought to keep the advantage thereof to himself (and his people).”

“Then said I to him, ‘Give me but a sight of them, and thou shalt be free (of all blame in the matter).’ So I ascended, with great pain, a rough way, accompanied by one of my young men, and I beheld these (dead men). And lo! (their bodies) had been rubbed with unguents, the hair being soft to the hand, and their limbs anointed with aloes and myrrh, and camphor to preserve them. Their skin clave to the bones, for I passed my hand over the breast of one of them, and I found the hair thereof rough. The garments were strong (of texture).”

“After that (we had returned) the guardian presented us with food, and besought us to eat; but when we took thereof and tasted it, our stomachs revolted from it, and vomited it up again. It was as though a vilany had been attempted and that (the guardian) had sought to kill us, or certain of us at least, in order to justify the words of dissimulation used in the presence of the king, when saying that the companions of Ar Rakîm would surely work us evil. Then said we to the (guardian), ‘We had imagined they would have been living men, but with the semblance of those who are dead; but behold these (men) are not of this sort!’ And we left him and went our ways.”

Speaking of this and other accounts of the Cave of the Seven Sleepers, Al Birûnî (who wrote in A.H. 390, A.D. 1000) has some pertinent remarks. I quote from Prof. Sachau’s excellent translation of the text,<sup>1</sup> where, in the chapter on the Festivals of the Syrian calendar, under the date of the “5th of Tishrin I.” (October), we find the following:—

“Commemoration of the Seven Sleepers of Ephesus, who are mentioned in the Coran. The Khalif Al Mu’tasim had sent along with his ambassador another person who saw the place of the Seven Sleepers with his own eyes and touched them with his own hands. This report is known to everybody. We must, however, observe that he who touched them, *i.e.*, Muhammad ibn Mûsâ ibn Shâkir, himself makes the reader rather doubt whether they are really the corpses of those seven youths or other people—in fact, some sort of deception. ‘Ali ibn Yahyâ, the Astronomer, relates that on returning from his expedition he entered that identical place, a small mountain, the diameter of which at the bottom is a little less than 1,000 yards. At the outside you see a subterranean channel, which goes into the interior of the mountain, and passes through a deep cave in the earth for a distance of 300 paces. Then the channel runs out into a sort of half-open hall in the mountain, the roof being supported by perforated columns; and in this hall there is a number of separate compartments. There, he says, he saw thirteen people, among them a beardless youth, dressed in woollen coats and other woollen garments, in boots and shoes. He touched some hairs on the forehead of one of them and tried to flatten them, but they did not yield. That their number is more than seven—which is the Muhammadan—and

<sup>1</sup> Sachau’s translation of Al Birûnî’s *Athâr ul Bâkiya*, 1879, p. 285.

more than eight—which is the Christian tradition—is perhaps to be explained in this way, that some monks have been added who died there in the same spot. . . .”

A few words may be added in conclusion regarding the names of the Seven Sleepers, as given in the authorities quoted in the “Acta Sanctorum” of the Bollandists (Julii, Tomus VI, p. 375, *et seq.*), and in the “Bibliotheca Orientalia” of Assemani (Vol. I, p. 335, *et seq.*).

The legend of the Seven Sleepers is first referred to in Western literature by Gregory of Tours (“De Gloria Martyrum,” Vol. I, 9, caput 95), according to whom they were seven in number, their names being Clemens, Primus, Lactus, Theodorus, Gaudens, Quiriacus (or Cyriacus) and Innocentius. In the official list of the Roman “Acta Sanctorum” the names appear in Latin, as :— Maximianus, Constantinus, Malchus, Serapion, Martinianus, Dionysius, Johannes; in Greek the first two figure as Maximilianus and Constantinianus respectively, while Exacustodianus replaces Malchus, and Jamblichus, Serapion.

In Assemani (“Bibl. Or.,” Tom. I, p. 336) we find a list taken from the writings of Dionysius, the Jacobite patriarch, who gives the number as *eight*, their names being : Maximilianus, Jamblichus, Serapion, Martinianus, Johannes, Exustadianus, Dionysius, and Antoninus.

The following are the names, *seven* in number, from other Martyrologies, as given in the “Acta Sanctorum” (*loc. cit.*, p. 376) :—

*Russian.*—Maximilianus, Dionysius, Amulichus, Martinus, Antoninus, Johannes, Marcellus.

*Ethiopian* (as given by Jobus Ludolfus, “Calendarium Æthiopicum,” p. 436) :—Arshaleles, Diomedes, Eugenius, Dimatheus, Bronatheus, Stephus, Cyriacus.

The list given by the Arab traditionist, Ibn ‘Abbas (cited above, p. 273), is doubtless somewhat corrupt. In “Eutychius” (edited by Pocock, Vol. I, p. 390 of the text) the names appear as : Maksimyânûs, Amilkhus, Diyânûs, Martîmûs, Diyûnisiyûs, Antûniyûs, Yuhannâ.

This variety in the names would appear to have struck the Martyrologists as requiring some sort of explanation. In the “Acta Sanctorum” (*loc. cit.*, p. 376) the opinion of an anonymous Greek author of a MS. in the Medicean Library is quoted, as also that of Boninus Membricitius. These are both of the opinion that the variants were due to the fact that the individuals are cited in one account under their original Pagan names, in another under the names they received in baptism. Thus, according to the anonymous Greek author :—

Μαξίμιλιανός	was baptised	Ἀχιλλίος.
Δεμετριος	„	Ἰαμβλίχος.
Ἐξακουστουδιανος	„	Διομηδης.
Ἄντωνινος	„	Κυριακος.
Μαρτινος	„	Ἐυγενιος.
Διονυσιος	„	Στεφανος.

Boninus Membritius, however, has the list as follows :—

Achiledus	was baptised	Maximus.
Diomedus	„	Malchus.
Eugenius	„	Martinianus.
Stephanus	„	Constantius.
Probatius	„	Dionysius.
Sambatus	„	Johannes.
Cyriacus	„	Serapion.

The story of the Sleepers, though probably at first merely a local legend of Syrian origin, has been carried far and wide, over the West and the East. One version is found in Scandinavia, and the account localised in Muslim Spain has already been alluded to. Finally, are not the numerous popular beliefs, according to which Arthur, Barbarossa, Roderic the Goth, and, at a later period, Don Sebastian of Portugal (not to mention various other renowned monarchs), are now asleep in caverns, but will awake and return to reign in the fulness of time—are not all these but variations of the old legend of which the Cave of the Sleepers of Ephesus is the first Christian example?

GUY LE STRANGE.

## AN INSCRIPTION IN THE AKSÂ MOSQUE.

In my translation of Nâsir-i-Khusrau's account of Jerusalem and Palestine, recently published by the Palestine Pilgrim's Text Society, there is a mistake in a note which I should wish to correct. The first note on p. 37 of the translation reads as follows :—

“In 425 A.H. (1033) the dome of the Aksâ Mosque had been seriously damaged by a shock of earthquake. It was restored next year by order of the Fatimite Khalif of Egypt, Ad Dhâhir, the work, *according to the extant inscription in the dome*, having been terminated in the month Dhû l Kaâdah, 426 A.H. (September, 1035), that is less than eleven years prior to our Pilgrim's visit.”

The words printed in *italics* should be altered as follows :—

“*According to the inscription quoted (A.D. 1173) by Ali of Herat, and probably still extant,*” &c.

The mistake arose from my having confounded an inscription mentioned by M. de Vogüé as still existing in the Dome of the Rock, with the one mentioned by Ali of Herat as read by him in the Dome of the Aksâ Mosque.

The earthquake of the year 407 A.H. (1016 A.D.) had greatly damaged the framework of the Dome of the Rock, and this was restored by order of the Fatimite Khalif Ad Dhâhir, as shown in the inscription, in ancient Karmatic characters, still to be seen on the framework in that dome,

which M. de Vogüé has reproduced in his work "Le Temple de Jérusalem," at p. 93. Of this inscription the following is a translation:—

"In the name of Allah the Compassionate, the Merciful. Verily he who believeth in Allah, restoreth the Mosques of Allah. Hath commanded the restoration of this Blessed Dome, the Imâm Abu-l-Hasan 'Ali ad Dhâhir li Izâz ad Dîn Allah, the son of Al Hâkim bi Amr Allah, Commander of the Faithful, the benediction of Allah be upon him, and on his most pure and generous forefathers. This was executed at the hand of his servant the Amir, the supporter of the Imâms, the sustainer of the State, Ali ibn Ahmad Inâbat Allah, in the year 413 (A.D. 1022). May Allah perpetuate the glory and the stability of our Master the Commander of the Faithful; giving him kingship over the East and the West of the earth: for Him we praise at the beginning and the ending of all actions!"

Further, inside the Dome of the Rock, on the tile-work, can still be read an inscription, which is unfortunately much mutilated, but of which the last few words are plainly legible. (*Cf.* de Vogüé, *op. cit.*, Plate XXIII.) The last words may be translated, ". . . in the year four hundred and eighteen." A.H. 418 = A.D. 1027, which shows that these tiles were put up to replace those damaged probably by the same earthquake.

A third inscription of the same period, relating to the Khalif ad Dhâhir's restoration, is also given by M. de Vogüé (*op. cit.*, p. 77). He states it may still be clearly read, though in a rather dilapidated condition, on two of the battlements of the outer wall of the Haram Area, near the *Cradle of Jesus*, at the S.E. angle. The remains of this inscription, translated, read as follows:—

". . . the days of the Imâm ad Dhâhir li Izâz ad Dîn Allah, the Commander of the Faithful . . . (words illegible) . . . the southern outer wall and the . . . (eastern?) outer wall . . . year four hundred and twenty-five."

The year 425 (A.D. 1033) was the year of the earthquake, when the dome of the Aksâ Mosque was damaged.

I now come to the inscription in the Dome of the Aksâ Mosque, seen by Ali of Herat, of which M. de Vogüé makes no mention, but which may very probably still be discovered should search be made. Perhaps Mr. C. Schick, or some other gentleman at present resident in Jerusalem, would take the trouble to look for it.

In the Bodleian Library is an excellent little manuscript of Ali of Herat's description of the Holy Places, which he visited in A.D. 1173. The MS. is numbered 17 E. D. Clarkii, Uri, CLV. From folio 36 verso, I translate the following:—

"*The Aksâ Mosque.*—In this mosque is the Mihrâb of Omar; the Franks have not done it any damage.

"On the roof I read the following inscription:—

"In the name of Allah the Compassionate, the Merciful. Praise to Him who brought His servant (Muhammad) by night from the Masjid

al Harâm (at Mekkah) to the Masjid al Aksá (at Jerusalem), on the precincts of which we invoke a blessing. May Allah give aid to His servant and vicar Ali ibn Abu-l Hasan ad Dhâhir li Izâzi dîn Allah, the Commander of the Faithful—Allah's benediction be upon him and upon his immaculate forefathers, and upon his beneficent sons! For the restoration of this same Dome and its gilding hath given command our illustrious and dear lord, the chosen servant of the Commander of the Faithful and his devoted servant, Abu-l Kâsim Ali ibn Ahmad—Allah give him aid and protection! The whole of this (building) was accomplished by the last day of the month Dhû-l Kaâdah, of the year 426: he who (superintended) the building of the same being 'Abd Allah ibn al Hasan of Cairo the architect.'

"The inscription, as well as the porticoes, are all done over with mosaics of gold, and these the Franks have not touched or in any way damaged."

With a view of the possible recovery of this interesting inscription, I add a copy of the Arabic text as given by Ali of Herat in the MS. of the Bodleian. I should add that M. C. Schefer, in his extracts from Ali of Herat's work given in the Journal of the "Société de l'Orient Latin," tome i, p. 587, has printed a slightly different version of this same inscription taken from a MS. of Ali of Herat, in his own collection:—

[Bodley MS. Uri, CLV., folio 37 recto.]

بسم الله الرحمن الرحيم سبحانه الذي اسرى بعبدہ ليلا من  
 المسجد الحرام الى المسجد الاقصى الذي باركنا حوله نصر  
 من الله لعبد الله و وليه علي بن ابي الحسن الامام الظاهر لا عزاز  
 دين الله امير المؤمنين صلوات الله عليه و على ابيه الطاهرين  
 و ابناء الكرمين امر بعملها وهي هذه القبة وادباها سيدنا  
 العزيز الاجل عني امير المرمنين و خاضه ابو القاسم علي بن  
 احمد ايده الله و نصره و كمل جميع ذلك الى سلخ ذي  
 القعدة سنة ست و عشرين واربع مائة صنعہ عبد الله بن الحسن  
 المصري المزوق

GUY LE STRANGE.

## KIRJATH-SEPHER.

SURELY we ought not to let this place go unexplored, after the suggestion made by Professor Sayce in the August number of the "Contemporary Review." The recent discovery of cuneiform tablets at Tel el Amarni, in Egypt—consisting of despatches to Amenophis IV and his predecessor (18th dynasty), from their agents in Palestine—proves that there was active literary intercourse from one end of the civilised East to the other, in the century before the Exodus, and that the medium of literary correspondence was the Babylonian language and script. There were libraries in Canaan in those days, and some of the books were in cuneiform characters. They were of clay, which would not perish like papyrus, and they could be read if they were discovered. Professor Sayce would be hopeful of finding such records at Tyre and at Kirjath-Sepher.

Kirjath-Sepher is translated as Book-town. In the Euphrates valley there was a city of corresponding name—Sippara—and it has justified its designation by yielding (within the present decade) many ancient records.

Sippara was a seat of sun-worship, and its temple contained hundreds of apartments. The legend said that Khasis-adra, the Chaldean Noah, here buried the records of the ante-diluvian world; and at any rate a great library was founded here as early as the remote days of Sargon I, of Assyria (B.C. 3750).

Some people from Sippara were transported to Samaria when the ten tribes were carried away captive, and the city is mentioned in the Bible under the name of Sepharvaim. This is a Hebrew dual form, signifying the "two Sipparas," and, accordingly, the ruins are found on both sides of the stream—at Abu Hubla and at Agadé. I find reason to think that the duality was symbolical, and was important in the astro-religious system, the two sites standing for the two equinoxes. We may compare with these twin temples, or towers, the mound of *Birs Nimrud* and the *Babil* mound on the opposite side of the stream; we may compare again the two "brother" peaks of Delphi, of the like significance, perhaps, in the Greek mythos, which was, at bottom, the same as the Chaldean.

The temple at Sippara was called Bath-el (House of God)—House of the Sun-god, apparently, since the expression "Shamash of Sepharvaim" occurs in the cuneiform texts.<sup>1</sup> We might have expected to find Noh rather—the god of writing—especially as the temple at Borsippa was sacred to him. The first and principal records preserved in the temple would be astronomical records—called "tablets of destiny," because the fixed laws of the heavens governed the fate of men—such records being of prime importance in an astro-religious system. Accordingly, we find

<sup>1</sup> In 2 Kings, xvii, the men of Sepharvaim made images of Ana-melech and Adra-melech, and burnt their children in the fire.

that the treasures of the library of Sargon included a great work on astronomy and astrology in seventy-two books (72, it may be remarked, is an oft-recurring number in mythic writings, because  $5 \times 72 = 360$ , the number of degrees in the circle of the heavens, and of days in the ancient year). The priestly guardians of these writings, however, being the scribes of the people, would by-and-by be entrusted with the care of the contracts, &c., which they drew up; and so Mr. Rassam discovered, at this site, thousands of tablets relating to fiscal, legal, and commercial transactions.

These, then, are the kinds of records which we may hope to find at Kirjath-Sepher in Judea. The place was very likely the site of a temple of Nebo, or some equivalent god of writing, and the records preserved would be, first of all, astro-religious, and then commercial.

Kirjath-Sepher is otherwise called Kirjath-Sannah, and also Debir. It was one of the Canaanitish towns taken by Joshua, and the worship would relate to that early time; the tablets would belong to the pre-Israelitish inhabitants. In "Fresh Light from the Monuments," Professor Sayce gives the name *Debir* as meaning sanctuary, and compares it with Kadesh, "the holy city." In the "Survey Memoirs" (iii, 402) we are told that "the name has the meaning 'back,' due to its position on the ridge." I have always supposed that the later name, Debir, had the same meaning as the earlier name, Sepher. Dabar, from the same root, signifies a word, speech, saying, command, law, oracle, &c.; and Furst, under the word Debir, allows that it may mean Book-town, the same as Kirjath-Sepher. It comes from *Dabar* (דבר) to speak. Apparently, the root-meaning of Sepher and Sannah is connected with the idea of piercing and being pointed, like thorns or like crags, and may have had reference to the conical hills on which Nebo temples are built, or to the stylus used in writing. The west or hinder part of the temple was called Debir, and in that connection the word is said to mean hinder; but if the sacred books were kept on that side, the name may perhaps have reference to the writings.

Kirjath-Sepher is represented now by the village of *elh Dheibariyeh*, south-west of Hebron (see Memoirs iii, 402, and Armstrong's "Names and Places," O. T.). The description of it is not unpromising for the investigator—"ancient materials," "an old tower," "a sacred place," and "houses over caves."

GEORGE ST. CLAIR.

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## MEETING OF THE GENERAL COMMITTEE.

THE Annual Meeting of the General Committee was held at the offices of the Fund, 1, Adam Street, Adelphi, on July 3rd. Chairman, Mr. James Glaisher.

After the Honorary Secretary had read letters from various gentlemen



regretting their inability to attend the meeting, the Report of the Executive Committee for the year was read as follows :—

MY LORDS AND GENTLEMEN,—

Your Committee elected at the last General Meeting, on June 14th, 1887, have, on resigning their office into your hands, to render an account of their administration during the past year.

1. The Committee have held twenty-two meetings during the year.
2. The work of exploration has been carried on during the last year by Herr Schick at Jerusalem, and by Herr Schumacher in other parts of the country.

We had on this occasion of last year to announce the deeply interesting discoveries made at Saida of sarcophagi and rock-cut tombs. We have been enabled to publish a more detailed account of these monuments, partly from Professor Hayter Lewis, who was allowed to see them at Constantinople, partly from the "Revue Archéologique," and partly from a journal published in Arabic at Beyrout. Hamdi Bey himself has not yet published any photographs or further details, which it is hoped may shortly be produced.

Several very valuable discoveries have been made in Jerusalem during the year :

(1) The ancient wall at the Jaffa Gate has been proved to be built inside the modern wall, which has no foundations, and stands upon the earth.

(2) One or two small points have been discovered as to the second wall, but its course has not been yet determined. Herr Schick will lose no opportunity of investigating this most important point.

(3) Herr Schick has discovered a Byzantine pavement, which in the opinion of most can be no other than the open space paved and adorned by Constantine in front of his group of Churches. It is of less importance, but it is still interesting to ascertain that on this pavement stood the "Vaulted Street," long lost, described in Crusading accounts.

(4) The most important discovery, however, is that of the Pool of Bethesda :

An apparently uninterrupted chain of evidence from the year A.D. 333 to the year 1180 speaks of the Probatia Piscina as near the Church of St. Anne. The place spoken of, recently believed to have been only a mediæval and traditional site, is said by the earliest writers to have formerly had five porches, then in ruins. Nothing was known of the Pool described by those writers until quite recently, when certain works carried on by the Algerian monks laid bare a large tank, or cistern, cut in the rock to a depth of 30 ft. It lies under, but not immediately under, a later building, a church with an apse at the east end. The cistern is 55 feet long from east to west ; north and south it measures  $12\frac{1}{2}$  feet in breadth. A flight of 24 steps leads down into the pool from the eastern scarp of rock.

Now, the first requisite for the site of the pool of Bethesda is that it

should be possible to have five porches. The only way (as shown by Sir Charles Wilson in his notes to the new edition of the "Bordeaux Pilgrim") in which this requisite could be satisfied is that the pool should be what is called a twin pool, such as that discovered close to the Convent of the Sisters of Sion—that is to say, two pools lying side by side, having one portico on each side of the four sides thus formed, and one between them on the wall of separation.

The discovery of the pool at the church of St. Anne did not at first admit of this possibility. It seemed, therefore, to be of interest chiefly as the re-discovery of a mediæval site. But Herr Schick now reports that he has found a continuation of the pool, or, rather, a sister pool, lying end to end, 64 feet long, and of the same breadth as the first.

We are, therefore, able to make out a reasonably strong case for identifying the newly-discovered twin pool with the Pool of Bethesda.

(1) It is undoubtedly the pool pointed out by all the writers, from the 4th to the 12th centuries inclusive, as the *Piscina Probatica*, around which other traditions gathered; as that it was the birthplace of the Virgin Mary.

(2) The five porticoes spoken of by the "Bordeaux Pilgrim" as being then in ruins, could very well have stood here.

In other words, the historical evidence in favour of this site is as strong as that which connects the Holy Sepulchre with the site adopted by Constantine.

In the minds of most, therefore, it will be probably acknowledged that we have here none other than the ancient Pool of Bethesda.

Herr Schumacher continues to send us valuable notes and papers. He reports antiquities and ruins uncovered in progress of excavation at many points at Zimmârin (now called Zicron-Jacob), at Tiberias, at 'Akka, at Rushmia, at Lejjûn, and elsewhere, all tending to prove that the antiquarian wealth of Palestine is below the surface not above it.

We received, in the autumn of last year, from Mr. Flinders Petrie, a loan collection of ethnological casts, representing the races of Syria and other countries, prepared from the sculptures at Thebes. These casts were shown at the Society's exhibition at the South Kensington Museum. A small grant having been made by the British Association towards the expenses of the work, the casts were taken last winter at Thebes by paper moulds; the series was prepared from the moulds in England; and photographs of all the casts were taken. The greater number of the casts represented the Syrian races, with whom the Egyptian monarchs were constantly at war. The characteristic faces of the Hittites, the Amorites, the Arabs, the Judeans, and the inhabitants of many towns of the North of Syria, could here be studied from contemporary portraits; and, moreover, from such a number of examples, that the general type could be seized without the uncertainty of errors of the sculptor. One most prominent result in Palestine was the resemblance of the Judeans to the Amorites (agreeing with the kings of Jerusalem and Hebron being kings of the Amorites, and Ezekiel declaring to Jerusalem

“thy father was an Amorite”), the faces of the former being of exactly the same type of that of the latter, only rather more refined and subtle of expression. Besides these there were sculptures of many other races; the Southern Arabians, who seem to have originated the Egyptian stock; the Libyans, the fair tribes of North Africa, of Aryan type; the Greeks, Sardinians, Philistines, and allied peoples; and some negro races. A mass of trustworthy material was here brought to hand in the most convenient form, for study by the historian and ethnologist. The collection remained on exhibition at South Kensington until the end of the year.

We have translated and presented to subscribers, during the year, Herr Schumacher's “Jaulán,” an account of his survey and its results. This we have so printed as to be detached from the *Quarterly Statement*, and bound in a volume similar to Captain Conder's “Tent Work.”

We have also, ready to be issued, Herr Schumacher's “Pella,” an account of a survey and description of that city and its surroundings. This is also illustrated in the same style, and it will be forwarded to every subscriber who signifies his wish to have it.

We have to thank Mr. Greville Chester for his “Journey from Iskanderûn to Tripoli;” Mr. Guy le Strange for a paper on the Arabic geographers; Mr. St. Clair, Mr. Birch, Mr. Laurence Oliphant, and Dr. Hutchinson, for notes on various points. Major Conder has again proved himself a steady friend and supporter, by contributing many valuable papers.

We have also in the press a paper by the Rev. Dr. Post, of the Medical College, Beyrout, giving an account of the botanical results of a journey to Eastern Palestine. They will be issued in October.

The Enquiry into the Manners and Customs is also in Dr. Post's hands, and he will begin to forward replies on his return to Beyrout in the autumn.

We have at length completed the long-promised “Names and Places,” containing all the Old and New Testament names, with their modern equivalents. The whole forms a volume which is of the greatest use to Biblical students.

We are preparing for press, and shall shortly issue, the first volume of a work similar in appearance and size to the “Survey of Western Palestine.” It will consist of three volumes with an Index, all abundantly illustrated with maps, drawings, plans, &c.

- (1) The first volume will be Captain Conder's “Survey of Eastern Palestine,” as far as that has been undertaken.
- (2) The second volume will consist of M. Lecomte's beautiful drawings, about 900 in number, made for M. Clermont-Ganneau's mission of 1873-1874, with some descriptive text.
- (3) The third will contain Mr. Chichester Hart's “Natural History of the Wâdy 'Arabah.”

There will be 500 copies, and no more, of the work. The price of subscription is £7 7s. for the first 250 copies, and £12 12s. for the next 250. The agent, Mr. A. P. Watt, has already received a sufficient

number of promises to warrant the Committee in authorising the commencement of the work.

Mr. Harper, one of the Executive Committee, is engaged upon a popular work, which, though it will not be published by us, will have our hearty good wishes. It is an account of the light thrown upon the Bible by all the recent excavations and surveys. We have placed at his disposal all the assistance in our power.

The Balance Sheet for the year 1887 is as follows :—

BALANCE SHEET FOR THE YEAR ENDING 31<sup>ST</sup> DECEMBER, 1887.

RECEIPTS.				EXPENDITURE.			
	£	s.	d.		£	s.	d.
Balance, 31st Decem- ber, 1886 .. ..	322	11	0	Management .. ..	407	5	7
Donations, Subscrip- tions and Lectures	1,572	9	11	Exploration .. ..	647	14	0
Maps and Memoirs ..	280	10	4	Printers and Binders ..	942	4	0
Books.. .. ..	369	10	3	Maps and Memoirs ..	337	3	7
Photographs .. ..	5	1	5	Balance, December 31st, 1887.. ..	215	15	9
	<u>£2,550</u>	<u>2</u>	<u>11</u>		<u>£2,550</u>	<u>2</u>	<u>11</u>

The Secretary, Mr. Walter Besant, who had for some time given his services gratuitously to the Society, has found it impossible to continue them, and has, therefore, resigned, but he has consented to remain as Hon. Sec., and we have appointed Mr. George Armstrong as Assistant Secretary. The management expenses of the Society are kept down by this change, and it is hoped that the efficiency of the office will not be in any way lowered.

We have to propose as members of the General Committee the following :—

General Sir F. Goldsmid, K.C.S.I.,  
 Professor Greenwood, of "The Owens College," Manchester,  
 Halford J. MacKinder, M.A., F.R.G.S.,  
 Rev. E. W. Bullinger, D.D.  
 Rev. George E. Post, M.D., M.A., of the Medical College,  
 Beyrout.

In conclusion, we have to assure the General Committee and our Subscribers generally that all the steps necessary to ensure continuation of the work on its present lines have been taken—that is say, no opportunity will be lost of making researches and following up discoveries in the Holy City, and every possible agency will be brought to bear in the prosecution of research in the Holy Land itself and the countries which surround it.

We have to express our best thanks to the local Hon. Secretaries, and to all who have helped to extend the knowledge of our existence and

aims, and even claims, to larger and more general support. The income of the Society is barely equal to the demands upon it, and while we are continually paying off the liabilities caused by the printing of papers and results, more reports continually arrive which call for immediate publication.

It was proposed by Mr. Guy le Strange, and seconded by Professor Hull, that the Report be received and adopted. This was carried unanimously.

It was proposed by Professor Hayter Lewis, and seconded by Mr. Morrison, that the following gentleman be elected members of the General Committee :—

General Sir F. Goldsmid, K.C.S.I.,  
 Professor J. G. Greenwood,  
 Halford J. MacKinder, Esq., M.A., F.R.G.S.,  
 Rev. E. W. Bullinger, D.D.  
 Rev. George E. Post, M.A., M.D.

This was carried unanimously.

It was proposed by Mr. Maudslay, and seconded by Mr. Guy le Strange, that the Executive Committee be re-elected, with the addition of Mr. Walter Besant. This was carried unanimously.

The following paper was read by Professor Hull :—

Geological investigation has made considerable progress in the regions adjoining Palestine, both to the north and west and south, since the publication of the "Geological Memoir on Arabia Petraea and Palestine."

1. The work of Dr. Carl Diener, of Vienna, entitled "Grundlinien der Physischen Geographie und Geologie von Mittel Syrien," Wien, 1886. This is certainly the most important work which has yet appeared on the geology of the Lebanon, as the author has not been content merely with an outline of the formations, but has produced a detailed map showing the geological structure of the region lying between Beirût and Damascus, and reaching as far south as the Lake of Merom.

2. Then there are the excellent papers of Herr Schumacher on the region of the Jaulân and part of the Haurân, extending from the Jordan Valley to the neighbourhood of Damascus, accompanied by an excellent topographical map in which the old volcanic craters and lava-streams are clearly delineated ; together with other physical phenomena of that remarkable region.

3. Then there is the remarkable work of Mr. Doughty on "Arabia Deserta," in two volumes, in which it is shown that the great Arabian Desert, lying to the east of Moab and Edom, is largely occupied by extinct volcanic cones and lava-streams, similar to those which are found in the Jaulân and Haurân. There can be little doubt but that these volcanoes were in active eruption during the same period as those in Northern Palestine and Syria, and that they died out and became extinct at, or about, the same epoch, so that it would appear that the whole

region lying to the east of the Jordan-Arabah Valley, and stretching from the base of Hermon for several hundred miles into the Arabian Desert, was the scene of active volcanic operation in the Pliocene, and perhaps in the Post-Pliocene epoch.

It was proposed by Professor Hayter Lewis, and seconded by Dr. Ginsburg, that the best thanks of the General Committee be awarded to Mr. Walter Besant on his resigning the office of Secretary.

It was proposed by Mr. Maulslay, and seconded by Professor Hull, that the best thanks of the Committee be passed to the Chairman, Mr. James Glaisher.

The proceedings then terminated.

### NEHEMIAH'S WALL AND THE ROYAL SEPULCHRES.

The following is an abstract of a Paper read by Mr. George St. Clair, Lecturer to the Society, at the recent meeting of the British Association at Bath :—

The topography of Ancient Jerusalem has been difficult to make out, and the site of the sepulchres of the kings of Judah remains unknown. But the problem has been simplified by recent excavations. We now, for the first time, know the contours of the rock and the features of hill and valley before the 80 ft. of *débris* began to accumulate.

The Akra of the Maccabees being identified, it is seen how by the recorded filling up of the Asmonean valley the two parts of the Lower City became joined into one *crescent*, lying with its concave side towards the Upper City, according to the description of Josephus.

The investigations of Sir Charles Warren show that the Temple must be placed on the summit of Moriah, with Solomon's palace south-east of it, leaving a vacant square of 300 ft., where now we have the south-west corner of the Harem Area.

From the south-east corner of the Haram enclosure extends the wall of Ophel, discovered by Warren, running 76 ft. to the south, then bending toward the south-west. Further, it is found that from the Gate of the Chain, in the west wall of the Haram enclosure, a causeway, with complicated structures, extends westward towards the Jaffa Gate.

Having this groundwork we may proceed to place the walls :—

The 3rd wall, built by Agrippa, does not concern us.

As regards the 2nd wall, it suffices for the present purpose to adopt the line of Herr Conrad Schick.

The 1st wall was the wall of the Upper City. On the northern side it ran from the Jaffa Gate to the Haram wall. The uncertainty has been about its southern portion. The author gives, on a diagram, the line he has been led to adopt ; and then shows that it corresponds in detail with the descriptions in the Book of Nehemiah.

Taking Nehemiah's night survey; then the consecutive allotments of work assigned to those who repaired the walls; and thirdly, the points successively reached and passed by the processionists when the walls were dedicated—it is shown that every mention of a gate or a tower, the number and the order of salient and re-entering angles, and every other note of locality, exactly agree with the course of the walls as suggested.

This course, moreover, involves the least possible variation from the present line of walls, and more in the way of addition than of deviation.

The hypothesis commending itself as true, by corresponding minutely with Nehemiah's descriptions, by tallying exactly with other Biblical references, and by meeting all the requirements of the case, it has this important practical bearing, that it indicates the site of the royal sepulchres, of the stairs of the City of David, of "the Gate between two walls," &c., and shows, incontestably, that Zion included the eastern hill.

In the author's plan, exhibited, the south wall of the Upper City crosses the ridge of the hill in the line of the present wall, and then makes a bay up the Tyropœan.

A cross wall, to the Ophel hill (also in the line of the present wall, is the wall of the Pool of Shelah, and terminates in steps, ascending and curving round towards the Triple Gate, which is regarded as the Water Gate. The royal sepulchres are on the north side of the wall of Shelah, excavated in the hill of Ophel, the entrance being close to the south-west corner of the buildings which stand out to the south of the Double Gate.

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