

southern spur of the hill where so much interesting detail is collected together. They consist of V-shaped grooves cut on the edges of three adjacent rock-outcrops. It cannot be an accident that the three are identical in shape and size; but (unless a wild guess which occurred to me, that they might be some sort of rude sun-dial, have anything to recommend it) I have no light to throw upon them. The Rev. Père Vincent, to whom I showed them, told me that nothing similar was known to him.

FURTHER NOTES ON THE ROCK-CUTTINGS OF TELL ZAKARĪYA.

By R. A. STEWART MACALISTER, M.A.

THE GREAT SOUTERRAIN.

IN the issue for January 1899 of the *Quarterly Statement*, pp. 25-36, I submitted a catalogue of the remarkable series of chambers and groups of chambers with which the sides of Tell Zakarīya are pitted. I now wish to supplement that article by the results of further study of these and similar excavations. My original design was to make plans and sections of the entire series, but on consideration I decided that such an undertaking was hardly worth the great expenditure of time it would involve, and that a better course would be to confine my attention to a few typical specimens.

On examination, the great system numbered XXI in my catalogue proved to be far more elaborate than I should ever have expected, and I considered it worthy of a survey as nearly as possible exhaustive, and of treatment in a separate article. The present part of this paper, therefore, is entirely devoted to this excavation. For a future part are reserved some miscellaneous notes on other rock-cuttings described in the previous communication, and also an account of a few others that came to my notice after it had been printed,

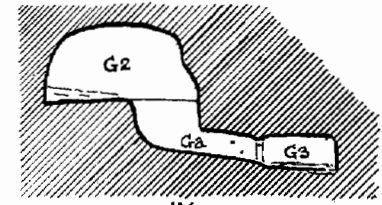
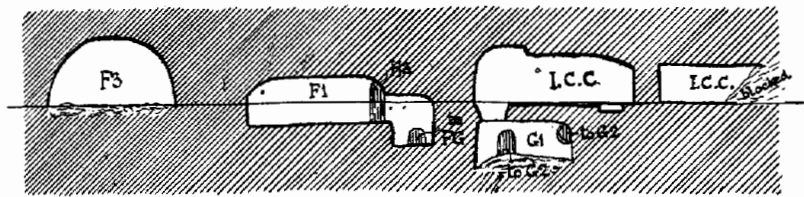
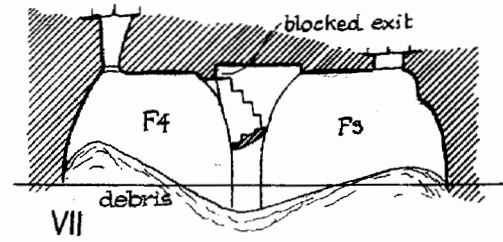
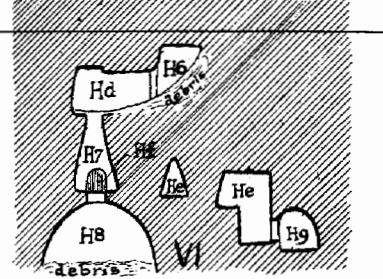
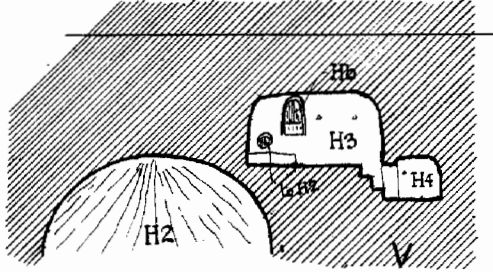
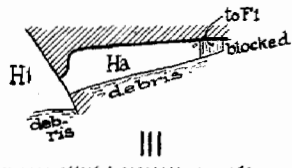
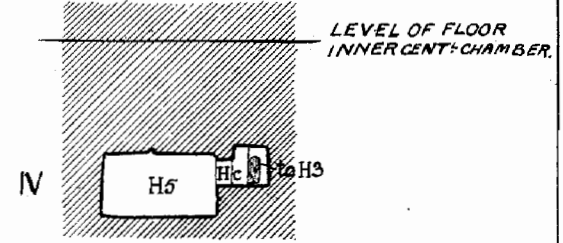
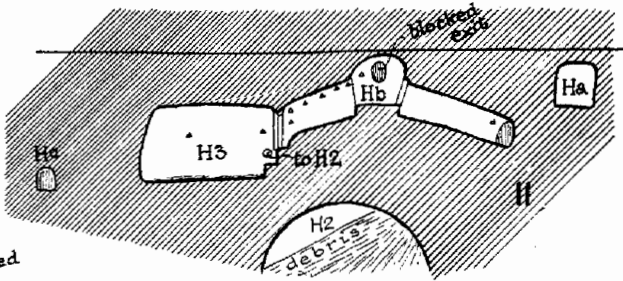
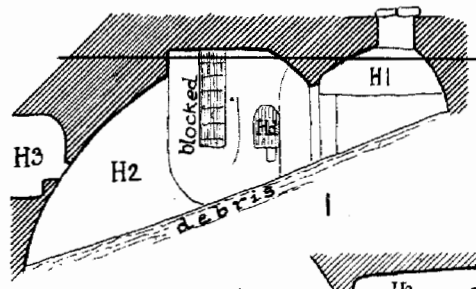
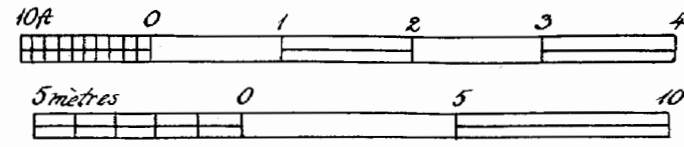
together with observations on the archaeological questions to which these excavations give rise.

The entrance to this cutting is on the shoulder of the hill, just below the level of the summit plateau, at the north-eastern angle of the Tell. The rock is a soft chalky limestone, very easily worked, and overlaid by a harder stratum which lies immediately under the vegetable soil, and in the neighbourhood of the entrance crops out to the surface.

The principle which I have adopted in numbering for reference the various chambers and passages will be seen from the Plan (Plate I). There are two large apartments, from which various systems of chambers radiate; these I have called respectively the "Outer" and "Inner Central Chamber" (lettered O.C.C. and I.C.C. on the plan). From the Outer Central Chamber lead off three systems, denoted by the index letters A, B, and E. A is the group first entered by a visitor. From the Inner Central Chamber there lead off eight exits; a shaft (now blocked) originally leading to the ground level; the entrances to the inner ends of systems B and E; entrances to other systems indexed C, F, G; and two passages, both blocked, which are close together, and which it is convenient to treat as one system, lettered D. Beyond F, at the extreme end of the series, is another system, lettered H. These systems are all independent of one another with the exception of B and E, and F and G, each of which pairs have a chamber in common. These common chambers are denoted respectively B E and F G; the remaining apartments are distinguished by the index letter of the system to which they belong and a number, the associated passages by the index symbol of the system and a letter. The sequence of numbers, it will be seen, has reference to the positions, not to the relative sizes of the chambers.

I have endeavoured, by the use of cross-hatching to denote chambers on lower levels, to make the plan as intelligible as possible; it is hoped that the scale of floor levels will be found useful in elucidating its intricacy. The floor level of the Inner Central Chamber has been taken as a datum, and marked by a thick black line on all the sections.

TELL ZAKARIYA ROCK-CUTTINGS THE GREAT SOUTERRAIN: SECTIONS I-IX



Handwritten note:
F4, F5, F6, F7, F8, F9
H2, H3, H4, H5, H6, H7, H8, H9
G1, G2, G3, G4, G5, G6, G7, G8, G9

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southern) are blocked with large stones and turfed over. A 4 is nearly choked with the earth that has filtered through the shaft above it.

The two columns in A 6 are buried nearly to their tops in the fine dust to which the chalky limestone has disintegrated. For the practice of leaving a column to support the roof of a chamber, compare cutting No. XVIII (*Quarterly Statement*, 1899, p. 31).

A 7 is chiefly remarkable for a peculiar symbol cut in the wall at the entrance to the passage leading to A 15, at the left of the door (*see* Plate IV, Fig. 2, i, where it is illustrated).

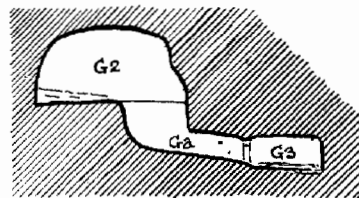
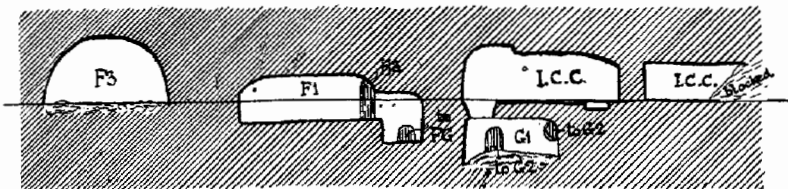
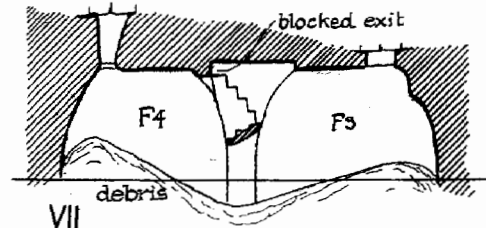
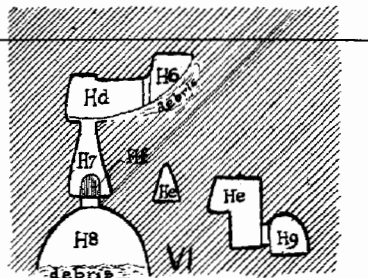
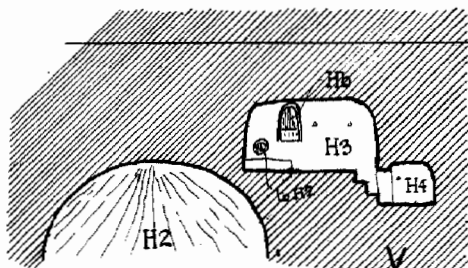
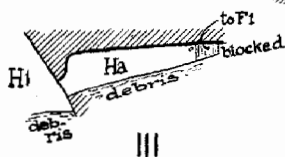
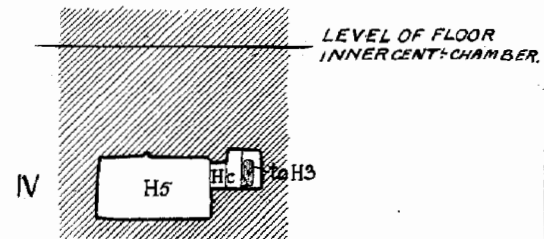
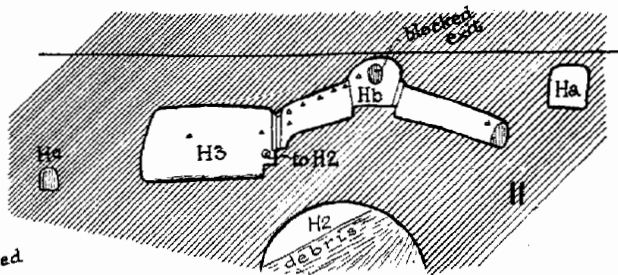
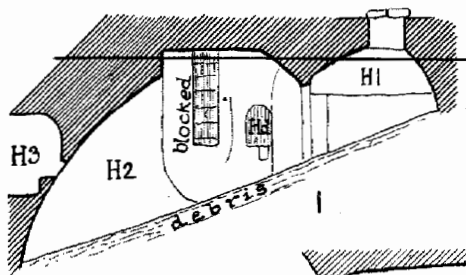
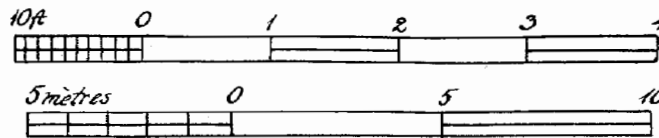
A 8, a room about 14 feet by 7 feet 6 inches, is reached through a circular hole in its floor, 1 foot 7 inches across and 4 inches deep. Two doorways, both now blocked, apparently communicating with the outer air, probably formed the original entrance; the present entrance being most likely intended as a means of access from this chamber to the more remote apartments of the system. Beside the hole is lying a stone which probably was intended as a stopper. Of the two blocked doorways, that nearer the present entrance leads into a passage trending upwards: the other leads into a small domed cell. A study of the marks made by the rather narrow chisel with which this chamber was cut out appears to indicate that the central passage was made first and expanded into the chamber; the domed cell was formed independently, and the communication afterwards broken through. There are two small niches in the wall of this chamber.

In the western corner of A 9 a kind of square recess has been formed (resembling a shallow cupboard) high up on the wall.

At the inner end of the passage A *b*, which is 9 feet 6 inches long, is a niche on the right hand side, with a rude boss-like shelf in it. The maximum length of A 10 is about 14 feet. The tops of the walls have been cut away (or disintegrated?), as shown in the section (No. XIV). The hard stratum of rock forms the roof.

A 11 is nearly full of fallen earth, and possibly entrances to unknown chambers may lead off from some concealed portion

TELL ZAKARIYA ROCK-CUTTINGS THE GREAT SOUTERRAIN: SECTIONS I-IX



*J. A. S. ...
Museum ...
1938*

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of the walls. A 12 is remarkable for being covered with a rough grey sandy plaster; it is 8 feet 6 inches high, and 16 feet 7 inches in maximum diameter. A 13, 14, and 15 are extremely small cells from 4 feet to 5 feet across, the two former being so much blocked with earth that entrance is difficult. There may be a passage leading out of A 14, but owing to the earth it is impossible to say definitely if this be so.

The passage A *d* runs inwards and upwards, but is carefully blocked at about 5 feet from its end with large stones. It is 2 feet across, 3 feet 6 inches high.

The twin chambers, A 16, 17, are remarkably well cut, smooth sided, domed chambers. A 17 has about 20 small niches cut in the sides. Above these chambers runs a passage, A *e*, of some interest; it enters the wall above the level of the entrance to A 16, and runs in a north-westerly direction for about 6 feet. There are two bolt-holes just inside the entrance, one of which is provided with a chase or groove along which the end of the bolt is conducted to the hole. The chase is in the inner side of the bolt-hole: that there was no door, but merely the barrier provided by the bolts, is indicated by the absence of a reveal. There is a further slight bend to the west in the direction of the passage, after which it runs 10 feet; just at the bend is a curved bay on the west side of the passage, in the floor of which is the circular hole communicating with the roof of A 16. The hole is well-cut, 1 foot 5 inches in diameter in clear, with a reveal of $3\frac{1}{2}$ inches to hold a stopper; the depth of the hole is $8\frac{1}{2}$ inches. The hole communicating with A 17 is similar in character. Between the two are indications in the walls of the passage of a second barrier—on one side is a bolt-hole, on the other a vertical chase-mortice. Beyond the second well-hole the passage bifurcates, but both branches are blocked. The left hand branch shows indications of a third barrier, with a chase directed towards the free end of the passage.

Outer Central Chamber.

The maximum diameter of the Outer Central Chamber is 20 feet 9 inches. The walls retain fragments of plaster

indented with meandering lines, whose purpose is not easy to assign. They are almost too systemless to be considered as ornament; perhaps they were merely meant as a key to hold an outer coat of plaster, which has now disappeared. They seem to have been traced with a blunt notched stick in the plaster when fresh. A specimen is shown (Plate IV, Fig. 3). On the south wall below the shaft is cut a mark of similar type to the triangular figure in A 7 (Plate IV, Fig. 2, ii); over the entrance to System B an unintelligible series of scratches is marked on the wall. There are about 25 small niches scattered irregularly over the walls of this chamber. There are three exits: one to System A, 1 foot 9 inches high, 2 feet 3 inches across, 10 inches thick; another to B, 1 foot from the ground, 3 feet 7 inches high, 1 foot $9\frac{1}{2}$ inches across; the third to E, 5 feet 10 inches from the ground, 2 feet 3 inches high, 1 foot 9 inches across.

SYSTEM B.—*From the Outer to the Inner Central Chamber.*

A passage, 4 feet long, from the Outer Central Chamber meets the main gallery of this system at right angles. In this passage are two steps upwards, one of 1 foot at the entrance and one of 10 inches half way along. The main gallery runs north and south from the end of this passage, but the southern portion extends for 3 feet only. At the intersection is a circular well-hole that gives access to a small domed cell, B 1, 3 feet across, 2 feet $7\frac{1}{2}$ inches high. This cell in its turn gives admission to B 2, the largest chamber in the souterrain, the maximum diameter of which is no less than 30 feet 4 inches. The entrance from B 1 is 2 feet 6 inches high, 2 feet across, and 4 feet 6 inches above the present level of the *débris* on the floor of B 2; a niche has been cut below its sill to serve as a foothold. B 2 has been cut out by irregular strokes of a rather wide-edged pick, and is coated with the same coarse grey plaster that we found in A 12. There were two shafts communicating upwards, that in the centre being of unusual size.

In the main gallery, B *a*, occurs another well-hole, similar to that which gives access to B 1. This hole affords admission

to B 3, another domed cell, 3 feet 4 inches in height above the present level of the *débris* on the floor and 5 feet in diameter. The opening is 1 foot 2 inches across, and, like others we have already found, is revealed for a stopper. A groove is cut between the reveal and the edge of the step in which is the well-hole, no doubt to facilitate raising the stopper, the top of which must have been flush with the surrounding floor (see Plate IV, Fig. 4). The floor is covered with earth, possibly concealing the entrance to other passages.

At the point where this well-hole is found the gallery bends through nearly a right angle, and rises by a series of steps to its destination. Close to the end of the gallery, on the left hand side, is a domed semicircular recess, 1 foot 4 inches broad, 2 feet 9 inches high, in the floor of which is a hemispherical cup-shaped hollow 6 inches deep; close by is a smaller hole resembling a socket for receiving the spindle of a turning door. The jambs of the entrance at the end of the gallery have notches cut out of them (see Plate IV, Fig. 5) which are difficult to explain, unless they were in some way intended to secure the woodwork of a door frame. The height of this passage, B a, at the southern end is 2 feet; in the middle it rises to 2 feet 3 inches at the walls, 2 feet 10 inches in the centre of the axis (the roof being cut in a barrel shape); at the inner end it is 3 feet 4 inches high.

B 4, to which the gallery gives access, is 9 feet 8 inches in maximum diameter. It contains a well-hole, 1 foot 6 inches across, not revealed, giving access to the small cell B E. Close by the door from the gallery is an entrance 2 feet 9 inches high, 2 feet 8 inches across, and 1 foot 11 inches above the ground which admits to a passage 17 feet 6 inches long; this ends abruptly in the side of the shaft above the middle of B 2. In the eastern side of B 4 a raised ledge or bench 4 feet long, 11 inches from the ground, has been left by the excavators.

B E is a tiny domed cell, the floor of which is much cumbered with *débris*, 2 feet 3 inches across at the spot where measurement is possible. B 5 is 4 feet 2 inches long, 2 feet 4½ inches across, and 3 feet high above the soil strewn on its floor.

Inner Central Chamber.

This fine room is an irregular quadrilateral with one angle not cut out, about 18 feet long and 10 feet across. A projecting mass of rock has been left uncut in the centre of the northern side. To the west of this is a cylindrical depression in the floor, about 1 foot 6 inches across and 11 inches deep: it may have been intended to make a series of chambers starting from this point, though the project was abandoned almost as soon as started. The hard covering stratum of rock, referred to at the outset, forms the roof of this chamber; the ceiling is therefore irregular and shows no pick-marks, but the walls show that the room was worked out with a narrow chisel, except in the blocked passage leading from the north-east corner, which was at least finished off with a 2-inch chisel. Several niches are cut in the walls. There is some grey plaster still remaining all round the walls to a height of 7 inches from the floor.

SYSTEM C.—Beneath and South of the Inner Central Chamber.

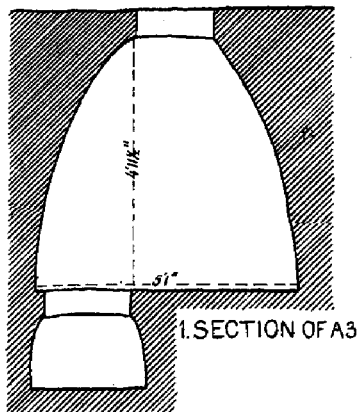
Just inside the door from B 5, in the floor of the Inner Central Chamber, is a well-hole 1 foot 2 inches deep, 2 feet in diameter. This gives access to a domed chamber, C 1, 5 feet 9 inches high above the accumulation of earth on the floor, 8 feet 6 inches in diameter. Four footholds are cut in the northern side of the cell. On the southern side the top of the doorway to another chamber just appears above the earth on the floor, but owing to the obstruction it cannot be entered. The further extent of this system is therefore unknown. I have not indicated this second chamber in order to avoid complicating the plan over-much. The chamber C 1 has been cut out very smooth with a fine $\frac{3}{8}$ -inch chisel, and its walls have been smoothed down with a comb or drag. I have not observed marks of this process elsewhere in the excavation.

SYSTEM D.—From the South-west of the Inner Central Chamber.

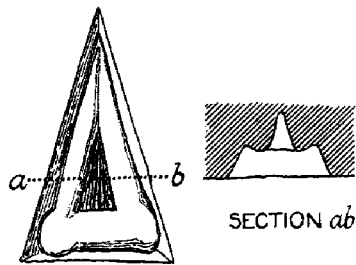
Two passages leading from the south-west of the Inner Central Chamber, one above the other, are here grouped

TELL ZAKARIYA ROCK-CUTTINGS

THE GREAT SOUTERRAIN: DETAILS

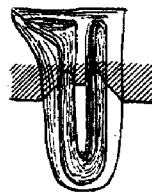


1. SECTION OF A3

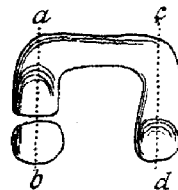


i. IN A7

SECTION ab



ii. IN O.C.C.

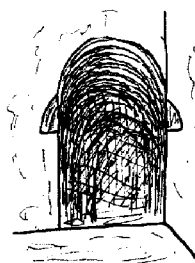


iii. IN F4

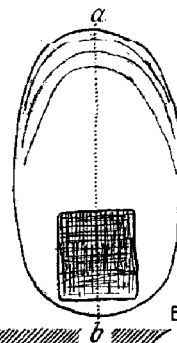


SECTIONS
ab | cd

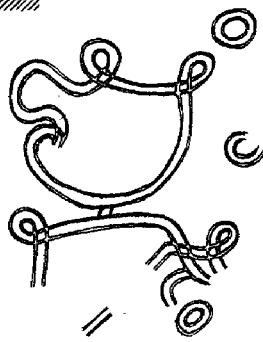
2. FIGURES CUT ON THE WALLS



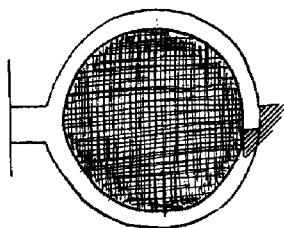
5. DOORWAY FROM B4 TO B3



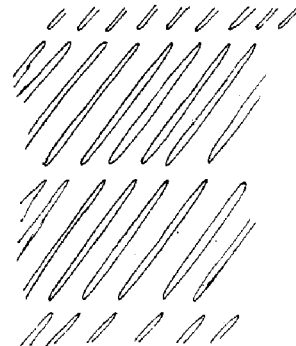
ELEVATION



3. SKETCH OF PART OF THE PLASTER MARKING
IN O.C.C.



4. ENTRANCE TO B3



7. PICKMARKS IN H2



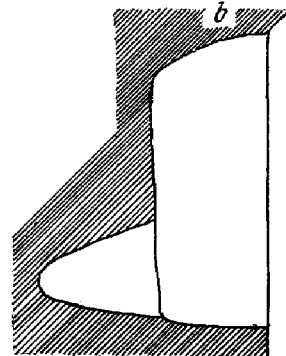
6. MARKS ON THE STAIRWAY IN F4.
LEFT



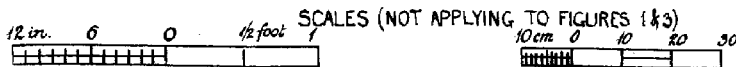
RIGHT



8. NORMAL WALL NICHE



9. NICHE IN E2



RASHEED MANSOUR
1931

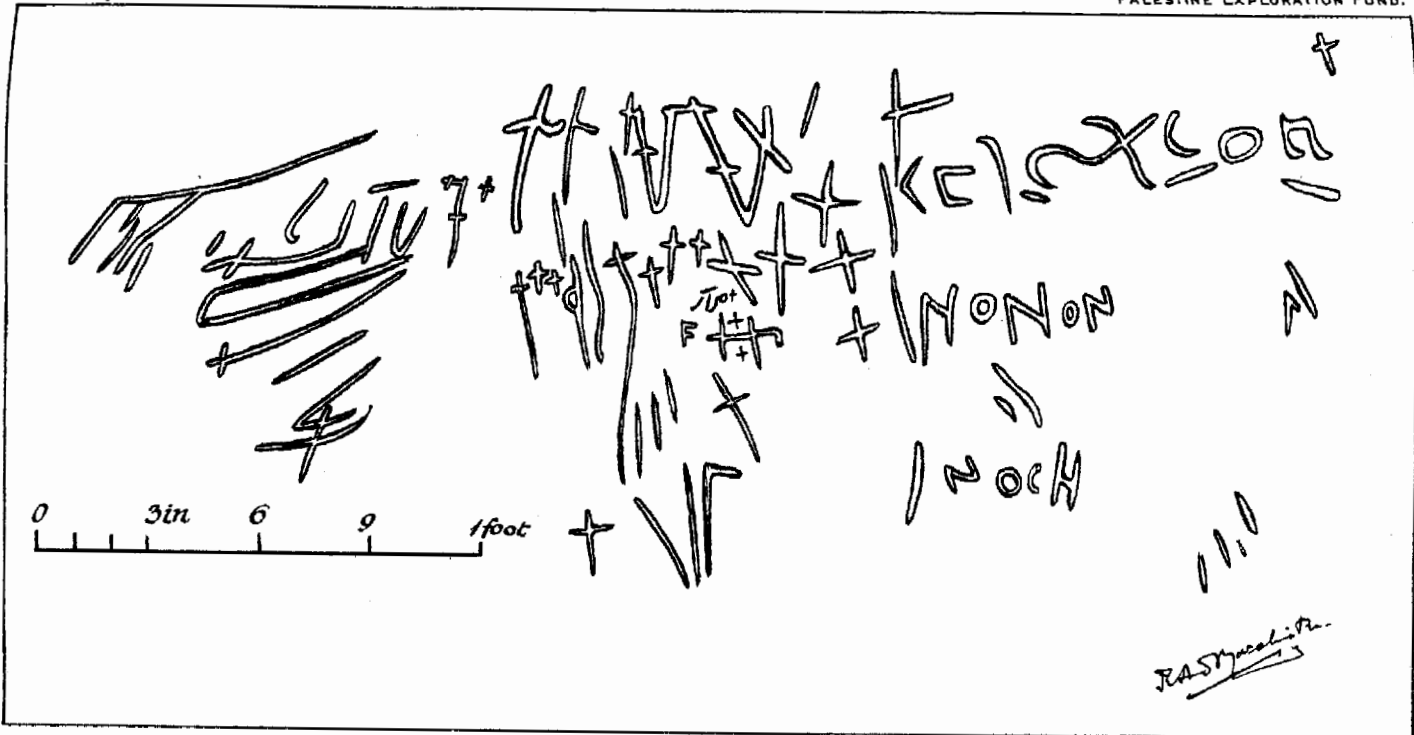
E1 is a domed cell, so full of rubbish that no satisfactory measurements can be taken; it communicates with E2 by a small and very awkward circular doorway. The well-hole by which it communicates with the Inner Central Chamber is 1 foot 7 inches across.

SYSTEM F.—*From the North-west of the Inner Central Chamber.*

The passage *Fa* originally ran north as well as south of the entrance by which it communicates with the Inner Central Chamber, but the northern arm is now blocked immediately inside the doorway. Proceeding along the southern arm, we notice first a small hole accidentally broken through the wall to F1; then on the left the entrance to the impracticable passage already described, *Db*; then on the right, among a number of wall niches of the usual shape, a curious mark recalling those in A7 and the Outer Central Chamber. This is shown in Plate IV, Fig. 2, iii.¹ The height of the passage *Fa* is 3 feet 9 inches.

F1 is about 11 feet across. It is chiefly remarkable for a graffito on its eastern wall, above the entrance to FG. From the annexed copy of this graffito (reduced from a rubbing by the method of squares) it will be seen to consist of rude crosses and some lettering. I can make nothing of the latter except the abbreviation **IC XC**, obvious in the top line. **INONON** has a cabalistic ring, suggestive of Gnosticism, but into this subject I cannot venture; I suspect, however, that several letters have been lost by the wear of the soft limestone, which is very friable, and can be scratched with the finger nail. The south side of the chamber is also covered with scribbling, but the marks are quite indefinite. This graffito testifies to a Christian occupation of the souterrain. In the list of the Zakariya rock-cuttings I recorded the existence of two crosses in No. XXXVII (*Quarterly Statement*, 1899, p. 35); I have since found others in the same excavation, as well as an illegible Cufic inscription.

¹ I should be much obliged for reference to any marks existing elsewhere similar to the three shown, Plate IV, Fig. 2, and also for any suggestions as to their meaning.



J. Akerman, Photo lith London

Graffiti in the chamber F1 of the great Souterrain

F 2 is a domed cell 6 feet 7 inches deep and about 9 feet in diameter; it is entered by a well-hole in the floor of F 1, 1 foot $5\frac{1}{2}$ inches across, 1 foot deep, and provided in the mouth with shallow bolt-holes by which a stopper can be secured.

F 3, 4, are twin chambers resembling A 16 and 17 in general appearance, though larger and not so neatly worked. They are greatly cumbered with rubbish. Each had a shaft communicating with the surface, in addition to which there are remains of a much-ruined flight of stairs running from the ground level to a lobby above the communication between the chambers (*see* Section VII). On the jambs of the opening from this staircase to F 4 are cut squares containing dots (*see* Plate IV, Fig. 6; "left" and "right" in the plate refer to the hands of a spectator facing chamber F 4).

FG is entered by a very small doorway leading out of a lobby sunk below the level of the floor of F 1. The doorway giving access to this lobby is neatly cut, with rounded top, and is 2 feet $3\frac{1}{2}$ inches high. The chamber measures 6 feet by 9 feet, and is choked with earth. Besides the above described entrance it has two others, one, now barely passable, leading to G 1, and another almost completely filled with earth and of unknown destination.

SYSTEM G.—*Beneath and North of the Inner Central Chamber.*

A well-hole bevelled (not revealed) to hold the stopper, 2 feet 4 inches across and 1 foot 3 inches deep, admits to G 1, an irregular chamber 8 feet by 4 feet, with earth strewn on the ground. It has several niches in the walls, one of them of large size. Besides the small opening to FG, it has two entrances to G 2, one of them a round-topped doorway, 2 feet across and 1 foot $10\frac{1}{2}$ inches above the present level of *débris*, the other a round hole 1 foot 4 inches across. This chamber has all been cut out with a half-inch chisel, but an inch chisel has been used in finishing off the doorways and the angle between the wall and the roof on one side. G 2 has also been cut out with a half-inch chisel. There are five niches in its sides.

Entrance to G 3 is obtained by a passage sunk below the floor level of G 2 and partly contained within its area. This chamber measures 9 feet 6 inches by 5 feet 6 inches, and its present height is 3 feet 1 inch, the floor being covered with a layer of loose gravelly soil. The chamber was cut out with long, vertical strokes of a blunt rounded pick; the ceiling shows marks of a fine chisel held edgewise and struck with short, sharp strokes. The door has a rounded top.

A peculiarity of G 3 well worth recording is the freshness of the air within it. The air throughout the souterrain is very close, and in some of the chambers (notably F 3, 4, which have been trysting-places for generations of bats) is little short of pestilential. On every occasion that I have entered this chamber I have been struck by the phenomenon, which is to me unaccountable (considering that the chamber is nearly 25 feet underground) save on one hypothesis: that a passage (natural or artificial) communicating between this chamber and the open air still remains to be discovered, its outer end being unclosed, and its inner end blocked only by the layer of loose gravel on the chamber floor.

SYSTEM H.—*Beyond System F.*

A passage leading northwards from F 1 runs for 9 feet, and then strikes a gallery at right angles. To the left this gallery, which led upwards, is now blocked; to the right it proceeds for 7 feet 6 inches, and then enters H 1. An entrance to unknown parts of the souterrain can be seen by looking through a crevice between the wall of the passage and the block that renders it impassable. The direction of the pick-marks shows that the passage was cut from the blocked end towards the two systems which it unites. There is one niche in the wall, at the angle where the passage from F meets that from H.

H 1, 2, form another pair of twin chambers of the type of A 16, 17. Each communicated with the surface H 1 by two of the ordinary roof shafts (one of which shows marks of weathering and has footholds cut in its sides), H 2, by a passage, now blocked with stones piled up at 3 feet from the entrance. H 2

is a fine chamber, about 16 feet across, the pick-marks in the sides of which have been carefully disposed so as to form horizontal rings, about 9 inches wide, of oblique strokes (*see* Plate IV, Fig. 7). The same technique appears in some of the bell-shaped cuttings with staircases in other parts of the Tell, but is not found elsewhere in the Great Souterrain. The floor of H 1 and H 2 is thickly covered with *débris*; probably the rock is sloped in the same way as the line of *débris*, as otherwise the two passages, from F and to H 3, would be inaccessible. In the wall underneath the entrance to H 3, there is a mark as though a doorway to a projected series of further chambers had been blocked out but immediately abandoned.

H 3 is raised about 8 feet above the level of H 2. It has two means of approach—a round hole cut in the walls between it and H 2, about 1 foot 6 inches across, showing evidence of wear in its lower edge; and an awkward passage starting from H 1 and running behind the wall of H 2. This passage for its first half rises, then expands into a small cell, after which it falls into H 3. Section II illustrates it fully, and shows the row of small niches on one side. The circular door in the middle of the gallery admits to a passage that led outwards, but is blocked: there is a well-cut doorway with reveal, bolt-hole, and chase at the blocked end. A square figure is marked with little scratches about 6 inches long on the right hand jamb of the door shown in the section. This passage has been cut out with a narrow chisel; a $1\frac{1}{2}$ -inch chisel has been used in finishing the ceiling.

H 3, a chamber about 9 feet 10 inches by 13 feet, has been worked with two chisels, one 1 inch, the other $1\frac{1}{2}$ inches broad; there are a few marks of a $\frac{3}{4}$ -inch chisel also. Near the entrance both are used together, but towards the inside the largest chisel was the most used. A flight of steps runs downwards from H 3 to H 4, a roughly rectangular chamber, 8 feet by 4 feet. There are three niches. A small pick has been used except in the recess opposite the steps, which was formed with a $1\frac{3}{4}$ -inch chisel. The steps were made with a very fine edged tool held sideways.

H 5 communicates with H 3 by a passage: the floor of the chamber is 2 feet 1 inch below that of the passage. In each angle of the floor is a saucer-shaped depression. The walls of this room have been finished with a little blunt cylindrical pick $\frac{1}{2}$ inch in diameter, with which instrument (held vertically to the wall) many of the niches have been formed elsewhere in the souterrain. In one side of the door, however, there are marks of a $1\frac{1}{4}$ -inch chisel. At a distance of 4 feet 6 inches from the wall containing the entrance a deep line is cut across the ceiling, and a similar line is made to meet it parallel with the top of the right hand wall. The direction of the pick marks, *towards* the door, indicates that the body of the room was first hollowed out and the walls finished afterwards. There is one niche in the south wall, and a foothold, worn by treading, cut beneath the entrance. Along the north side of the passage is a row of four niches. Between the bend of the passage and H 3 a $1\frac{3}{4}$ -inch chisel is used for finishing off the ceiling; between the bend and H 5 a pick is exclusively used. There is a recess, with hollow depression, on the left side of the entrance to this passage from H 3: the recess is 7 inches across, the depression $3\frac{1}{2}$ inches deep.

Returning now to H 2 we proceed along the passage H *d*. At its end is a chamber, apparently a natural fissure in the rock from its irregularity and the absence of pick-marks. On the right hand side of the passage is a bay, in the floor of which is a well-hole: beside the hole is lying the original stopper—an irregular stone with a rough projection on one side that just fills the well-hole.

This hole gives access to a cell 2 feet 7 inches across and 5 feet 8 inches high. Two niches are cut as footholds in its side. In the centre of its floor is a rectangular depression, in the middle of which is another well-hole, leading to a lower cell, 8 feet 3 inches across, 4 feet 10 inches high. The walls of this cell are carefully chiselled smooth. From the upper cell two passages radiate: one is blocked with earth; there is a row of five niches in its right hand wall. Over the entrance are three small grooves resembling the rope marks at the mouth of a well. The other leads down to an extremely small

chamber 3 feet across and 2 feet 9 inches high, formed with large widely-spaced chisel cuts, and finished with a finer tool. Along the left side of the wall of the second passage is a row of niches, six in number (one of large size), 3 inches from the roof. This passage has been cut with a $\frac{3}{4}$ -inch chisel; a wider tool has been used at the spot where it bends.

So far as known the number of chambers in the Great Souterrain, including small cells, is 49, namely:—Central Chambers, 2; System A, 17; System B (including B E), 6; System C, 2; System D, 0; System E, 3; System F (including F G, an inaccessible room communicating with F G, and the lobby over F 3, 4), 7; System G, 3; System H (including the small cell in the middle of H b), 9. The above results have been obtained with the smallest possible amount of excavation. There is little doubt that a systematic removal of the *débris*, and opening up all the blocked chambers and passages (of which there are 16 known at present), would have resulted in the addition of other systems to those already known. It seemed doubtful, however, whether further intricacies in the already highly complex plan would benefit science to an extent commensurate with the outlay which such operations would involve.

Any attempt to assign a period or a purpose to the excavation of the Great Souterrain must depend entirely upon its architectural features, if I may so term them. There is little or no chance of the discovery within it of any portable antiquities more valuable than some fragments of Roman and Arab pottery and one or two Arab beads which I found here and there. Nor has tradition any light to throw upon the question. Locally this souterrain is known as the *مِهْمَاه*, *mihmah*, a word, I suppose, to be somehow connected with the root *حَمِي*, "to be hot"; the name tells us nothing of the origin of the excavation, and on this subject the Fellahin profess complete ignorance.