Mastaba 17 at Meidum

A Layman's guide

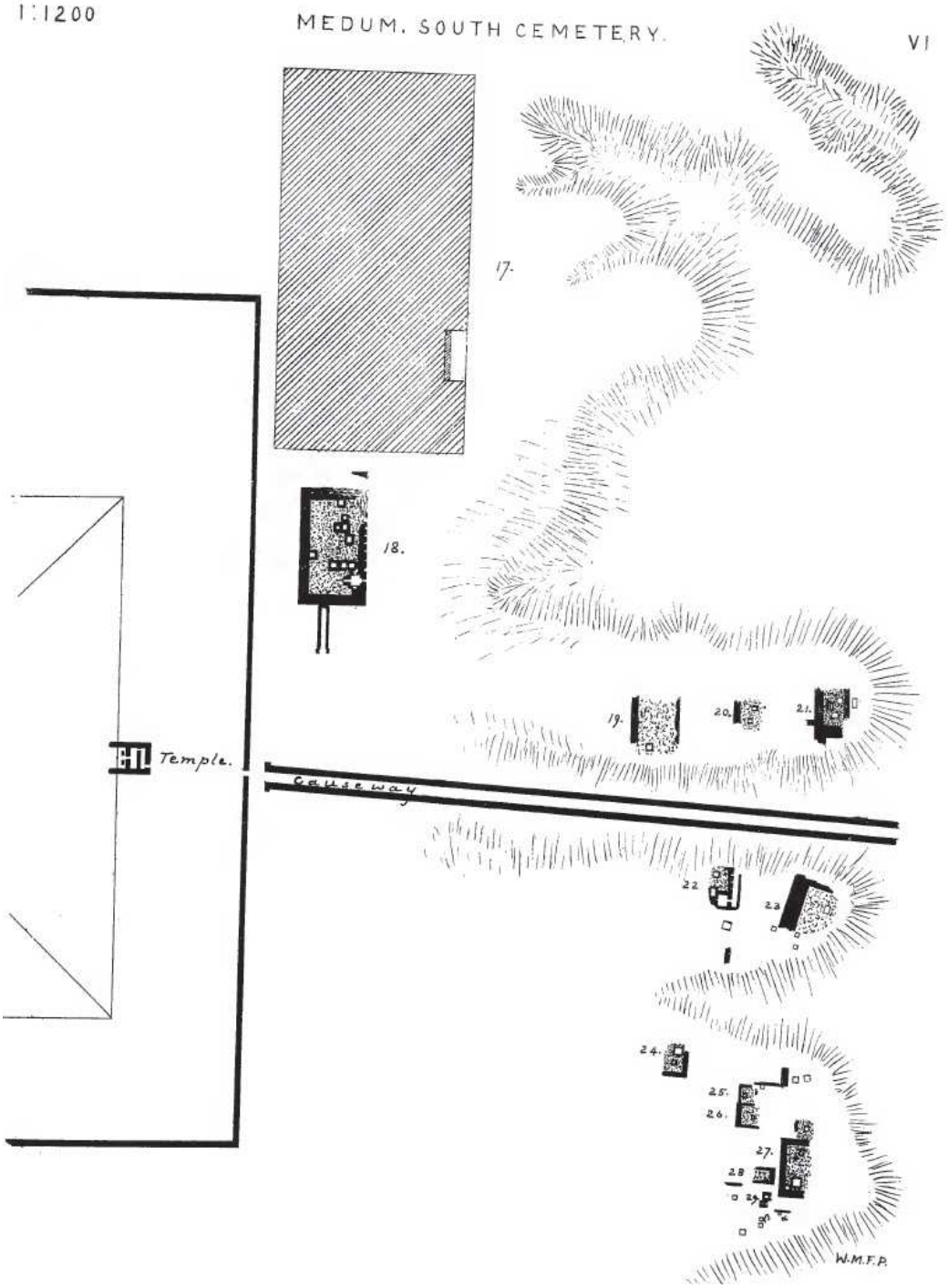
Keith Hamilton 22nd November 2017

In the image above we see the remains of Mastaba 17, this view taken from the flanks of the Meidum pyramid, looking northeast towards the verdant Nile valley: once again I am most grateful to the Isida Project for the use of their images.

The primary information relating to this mastaba is to be found in, '*Medum', by W.M.Flinders Petrie, 1892;* and *'Meydum and Memphis (III)', by Petrie, Ernest Mackay and Gerald Wainwright. 1910.*

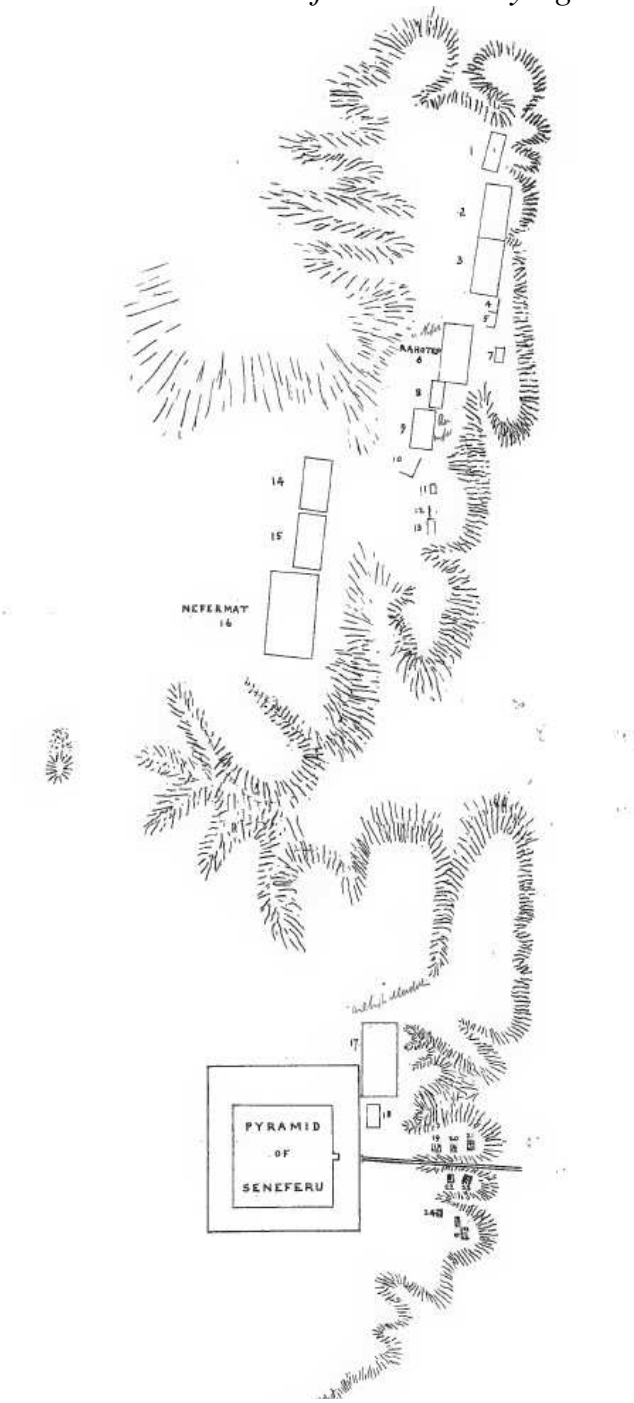
Mastaba17 is the second largest mastaba at Meidum; the largest is mastaba 16, a twin mastaba belonging to Nefermaat and his wife Atet, this mastaba

had been enlarged twice to a final size of 120x68m; mastaba 17 by comparison was 103x51.6m. Petrie says of mastaba 17, *"It also differs from others in having been built entire at once, and without any subsequent coating or addition."*



In the drawing above from Petrie, we can see that mastaba 17 occupies an important position at the north-east corner of the pyramid complex, whereas mastaba 16 belongs to a grouping of mastaba's some distance to the north,

which is also inferior to mastaba 17 in masonry; Wainwright says of Nefermaat's chamber, *"It resembles No 17 in being quite plain and uninscribed, but in masonry it is very inferior, both as regards the smoothness of the stones and the care of the stone-laying"*.



In the drawing above from Petrie, we see the large grouping of mastabas to the north, this grouping does not appear accurately aligned to the north. However, care appears to have been taken at mastaba 17, Petrie states;

"The average azimuth of the E. and W. sides, which were doubtless those fixed astronomically, is 12′ W.of N., which is only half the divergence of the pyramid azimuth."

Petrie's first exploration of mastaba 17 occurred in 1891, as part of his wider exploration of the Meidum site; Petrie camped at Meidum and he choose Nefermaat's sculptured chamber as his bedroom. In this, his first visit to Meidum he was unable to find a way into the chamber of mastaba 17, this would have to wait till some 19 years later. However, he did manage to find out some interesting details in his exterior investigations.

The Exterior

Petrie says, *"Its outside was built of large crude bricks, the body of it is formed of clean chips of limestone, evidently the waste from the building of the pyramid: it is therefore most probably contemporary with the pyramid."*

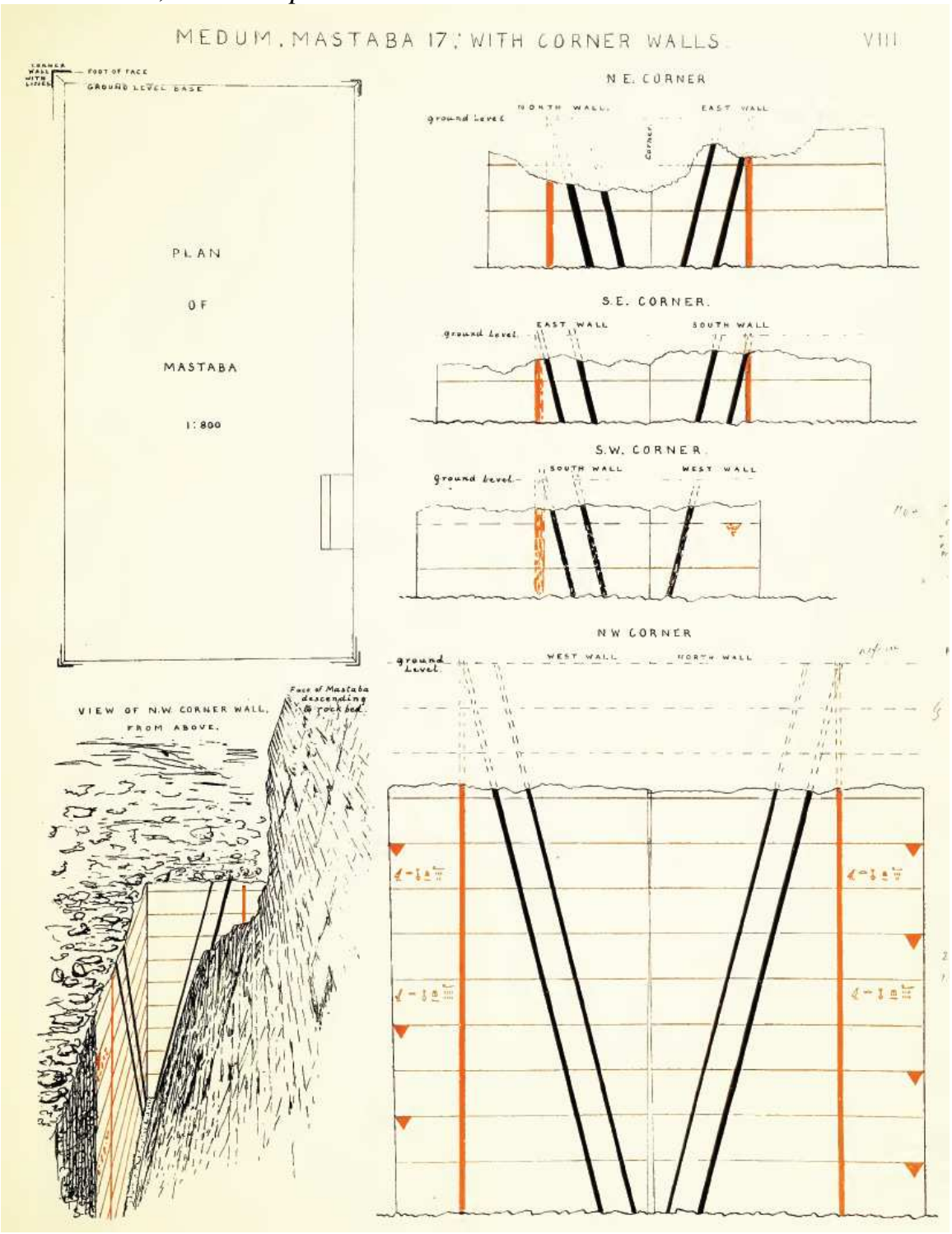
It appears to be a simple plain smooth mastaba; there is no suggestion of any panelled façade that we see on the east side of mastaba 16 or sculptured chamber. Indeed Petrie reports;

"The whole length of the east side was laid bare and examined in search of any other façade or false door, but it was all made of smoothly plastered brick. The outside of the brickwork had been a good deal weathered and destroyed down to the ground level, and it was tunnelled into for graves in about the XXIInd dynasty; the bodies were much swathed, occasionally in wooden coffins without inscriptions, but there were no objects with them, except once or twice a few beads."

Petrie states the angle of the mastaba as 76 degrees, or an angle of 4 vertical on 1 horizontal, and that the walls did not rest on a level foundation, but were carried further down and rested on the bed rock. The site is not level and in the north-west corner he found the sloping walls continue some 20 feet below ground level. In the course of excavating the north-east corner, Petrie discovered a curious wall built from the rock walls that were also to be found on all the remaining corners, though they varied in height, due to the uneven terrain. Petrie says;

"Outside of the corners vertical walls were built from the rock up to the ground level of the intended mastaba. These walls are of ***L*** *shape, running in*

front of both faces at each corner; they are of crude brick, plastered, and whitewashed, to shew up the construction lines."



Petrie's drawing above, gives a clear impression of the construction lines found on the brick walls at the four corners.

Petrie goes on to say; *"Levelling was then carried around the site, and all the inner faces of the walls were divided by horizontal lines into spaces of a cubit high, the deep wall at the N.W. having as many as nine cubit levels still marked on it. Vertical lines were then drawn on the walls, in the planes of the ground lines of the intended faces; e.g. on the two northern pieces of wall, at N.E. and N.W. corners, the vertical lines were 2065 inches apart, the intended breadth of the N. face at the ground level. Then from the intersection of these vertical lines with the ground level, sloping lines were drawn down outwards at the intended angle of the face. Thus at each end of the face was a slanting line defining its plane; and it was only needful to place the eye on one line and sight the brickwork in a line with the line at the other end, to know that it was in the intended plane.*

Such was evidently the principle, of which the evidences remain at each corner. But for some reason a second sloping line was added outside the first, and the building was thickened out to that. It is impossible to suppose that the ground level was at the intersection of the outer line with the vertical, though possibly that level was marked on the mastaba side now destroyed: and it is equally impossible not to regard the vertical lines as the intended dimension of the mastaba, as the breadth is exactly 100, and the length 200, cubits. So we can only suppose that the mastaba face was built one brick thicker than at first intended."

These vertical red lines Petrie saw as the best data for the dimensions of the mastaba, these he measured to their outer edges trigonometrically and obtain the following measures N. 2065, S. 2063, E. 4121, W. 4124, or 100 by 200 cubits of 20.62 inches. The levels of the lines at the corners gave an average error of 3.7 inches which Petrie said *"which is more than double the error made in levelling the longer base of the Meidum pyramid."* Given the nature of the site and the crude brick material used, I feel it's a remarkable achievement.

The only break in the otherwise smooth mastaba walls is to be found on the east face, near its south end; here Maspero found a stone façade in 1882, it appears to be a plain stone façade, with no inscriptions, or even a false door on it. Unfortunately Maspero did not recover this find and it was consequently quarried away; today only a portion of fine pavement remains.

In the image above of the mastaba's east face we can see excavations into the brick wall; there are many of these found on the mastaba and appear to be the intrusive burials mentioned by Petrie. The slope of debris to the left of the brick is the remains of Petrie's cutting and large pit that eventually gave him access to the mastaba's chambers.

In the image above and immediately south of Petrie's cutting, we see the remaining pavement of the limestone façade discovered by Maspero. The top of the Meidum pyramid can be seen in the back ground.

In the last two images of the façade pavement, we can see it was a sizeable construction, at least four courses of the pavement are visible, and at the western end of the pavement, a course of the western wall seems to appear from the rubble. Also visible is a distinct layer of brick that appears to sit atop a layer of marl. The bricks in this area were measured by Wainwright, he says they *"are large and well made, the sides being flat and fairly regular."* He found the bricks taper slightly, which he attributed to he mould they were made in, to enable more easily the release of the brick from the mould. The size of the bricks he says *"was evidently intended to be ¾ x 3/8 x ¼ cubit."*

The top of the pavement is made of irregular slabs that have very fine joints and is a fine piece of work. I have not been able to source any dimensions of this façade or platform; but it seems a lot of time and effort was put into its construction and it must have been an impressive site when complete.

On the next page we have two images showing the layout of the pavement slabs.

The Mastaba Nucleus

The best description of the make up of the mastaba comes from Wainwright, he says;

"In going down we exposed the interesting feature of the dry stone walls, occasionally found running through the mass; they are apparently limits for successive banks of filling, and were intended to bind the whole together, for the sake of stability.

The mastaba was composed of the clean limestone chips from the building of the pyramid approach and the constituents of the levelled space round the pyramid.

Besides this unweathered chip there are strata of the marl, which probably comes from the foundations of the inner parts of the pyramid.

In its composition the mastaba is thus similar to the filling of the approach and its other surroundings, which have been shewn to be contemporary with the building of the pyramid.

Moreover, had the mastaba been built of materials lying about at any time after the finishing of the pyramid, a great quantity of rubbish must have been included, as in the case of the dummy mastabas at Abydos (Abydos iii, p. 17)*; but this is conspicuous by its absence. Only occasional relics of the workmen were found in the shape of early weights, a copy of accounts, and also many pieces of pottery…..*

The layers of the different throws are peculiarly even, running in level lines across the mastaba. Evidently the material was not thrown in haphazard, but the work was so arranged, that it was piled up to a certain height and levelled off smoothly, after which another layer was begun on top of that.

There was a curious feature about this mastaba in that the chamber was built, and the passage blocked with its plug stones, before the mastaba was heaped up, as there never had been a communication between the chamber and the outside. A short sloping passage leads upwards from the chamber, only to stop short in a small courtyard in the middle of the mastaba (see pl. xii), the chip which forms the mastaba lying over it on all sides. It therefore looks as if the owner had died early in its construction, and the piling up of his great mastaba had been the first duty of the pyramid builders. As the mastaba is placed as close as possible to the enclosure of the pyramid it was evidently of great importance."

This description was written some 19 years after Petrie's first excavation on the mastaba, when they were finally successful in finding the mastabas chamber. 19 years earlier Petrie could only find some clues to the chambers location, one such clue was found next to the limestone façade on the east side, which he cleared, he says ;

"When I cleared it again I found at the north end of it a forced passage in the loose stone chips which form the body of the mastaba. This I had cleared out for some distance, when it turned downwards, and could not well be worked in, owing to the looseness of all the material, and an old forced well which opened into it, and was full of loose stuff."

Petrie had already scraped along the top of the mastaba, in the hope of finding a shaft, but to no avail. He then went on to excavate a pit, he says;

"I then sank a large square pit with winding stairway, in the axis of the mastaba, reaching from about the middle to near the latitude of the N. end of the façade. This pit we carried down to 48 feet under the top-a considerable work; but we neither reached a central chamber, nor any passage leading to the chamber, as I had hoped we might have done. The old forced passage just mentioned was opened out north-west into the pit, for safety of working, and was then cleared of loose stuff, but it proved to have been abortive, as it ceased in the mass of filling, without reaching the chamber.

An indication of the chamber was however reached, as a brick wall was found in the bottom of my pit, with a plaster lining and a red line on it, facing south. This is doubtless part of a guiding wall for the working lines of the chamber, like the walls at the corners of the mastaba. And this shews that the chamber is about behind the façade, and E. of the axis.

A long sloping face of dry stone walling rises up above this brickwork, evidently the retaining wall to keep back the upper stuff while working, as this hole is about 20 feet below the pavement. These details were only found in the last week of my work, and I had not time to undertake the heavy task of clearing away another large mass of stuff 48 feet deep to lay bare the chamber. Where the regularly built entrance is we cannot tell: there is no well on the top, nor any passage leading into the chamber from the north, as there is in other mastabas."

It would be a long wait of some 19 years, before he would discover the entrance. Before we leave the nucleus, it is interesting to compare its construction to that of the larger mastaba 16, Petrie says; *"The body of it is*

of layers of Nile mud poured in and left to harden before a fresh mass was applied. It is thus full of large cracks which extend far in all directions, which conduct currents of warm air out whenever excavations are made, and which form the home of serpents. The top is coated with 3 to 5 feet of gravel and sand, to sponge up the rain and prevent it penetrating."

The Chambers

When Petrie returned to Meidum some 19 years later, he returned to his old pit and cleared it of fallen debris; however in order to enlarge the pit and provide safe working conditions, he had to cut into the mastaba from the east and join his pit, this cutting was just north of the limestone façade.

3 EXCAVATION IN MASTABA

The above image shows Petrie's cutting; the square corner is the brick wall

backing of the façade. The worker at the bottom is standing on the brick retaining wall, which rises far above the chamber. Petrie states;

"On making a wide clearance at the bottom we found the end of the entrance passage shewing, (see the left hand of pl. x, 2)filled by a plug of stone, with a great lintel over it, and a wall of brickwork on each side. The wall on the north turned round a corner, as seen in the view, and ran back to B. From B to A (see letters on views 1 and 2, and on the plan pl. xii) was a slope of plastering, and at A rose up a retaining wall of plastered brick. These brick walls all have a strong batter, which is shewn by the top and bottom outlines parallel on the plan.

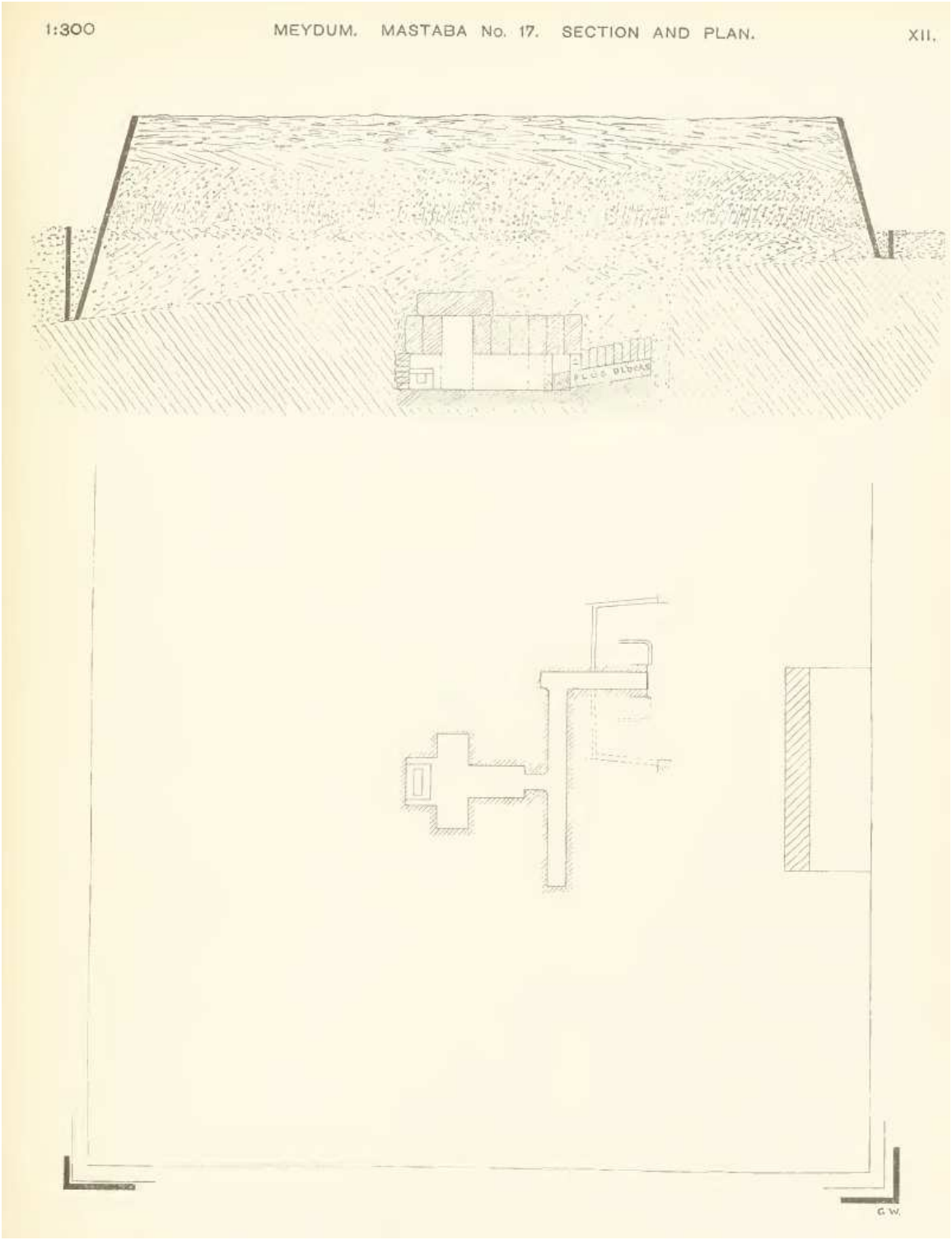
I then decided to cut through the plastering from A to B, below the pick in view 1, and on descending we reached the ends of large beams of stone, which apparently roofed the passage. Cutting out solid stone we descended to the side of the wall below the beams, and finally cut a way through that. We then were able to crawl into the space C, under the higher roof at the end of the passage, see section pl. xii, over the top of the plug blocks which extended the whole length down to the butt end of the entrance passage."

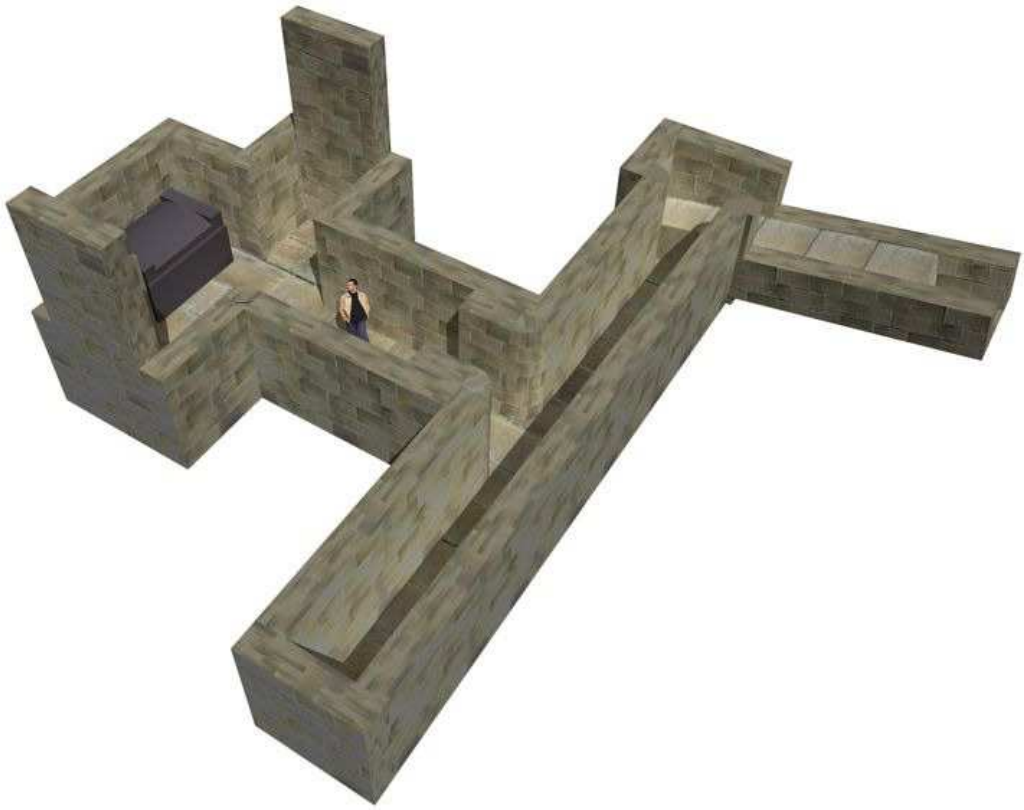
In the next two pages, the two images that Petrie refers to above, along with the plan and section are shown, to help the reader visualise the above description.

1 FLOOR OF COURT BEFORE OPENING A–B.

2 PLUGGED ENTRANCE. A–B, PRESENT OPENING.

1:300 MEYDUM. MASTABA No. 17. SECTION AND PLAN. XII.





I have made the image above to give the reader a better view of the chamber layout; all the roofing beams have been removed.

In the image above, we can see the breach Petrie and his team made in the north wall of the descending corridor. It comes out in front of the last roofing beam, which was placed on edge, and allowed them to crawl over one of the plugging blocks and access the long N-S corridor. The rounded corner of the N-S corridor can be seen on the right.

In the image above we are looking up the descending passage, the plugging blocks have been removed, and debris now mostly fills the passage. Petrie and his team were to be disappointed after all the hard effort in breaching into the chamber, as they soon found out that violators had already been and gone.

This would have been no great surprise to Petrie, who writing some 19 years earlier, mentions something similar in a different mastaba; this mastaba No. 9, belonging to Ranefer, had its trap door in position, and beyond it the passage had been blocked with solid masonry. However after removing these obstructions Petrie found the intact chamber with a great hole in the floor, he says;

"It had been burgled by cutting a tunnel from the back of the south false door straight to the chamber, and breaking away the floor.---Ranefer's mummy lay hitched up against the west wall, on its left side, head north, facing east; the head had been broken off by the violators, but carefully replaced, with a stone under it to support it in position."

So efficient had the violators become, that sometimes they did not have to make any effort to gain access to the chamber, as the great mastaba of Nefermaat seems to suggest, here Petrie says;

"Although the blocking was complete, and the chamber walls and floor were unbroken, yet the burial had been entirely plundered. This must therefore have been done by the workman who closed the chamber and the shaft."

When Petrie and his team entered mastaba 17, the first thing to greet them was the robber's tunnel, on the south wall of the N-S corridor. The image below from Petrie's report shows the breach in the south wall, the debris showing was originally not there; according to Wainwright, it is the result of them turning over the contents of the tunnel.

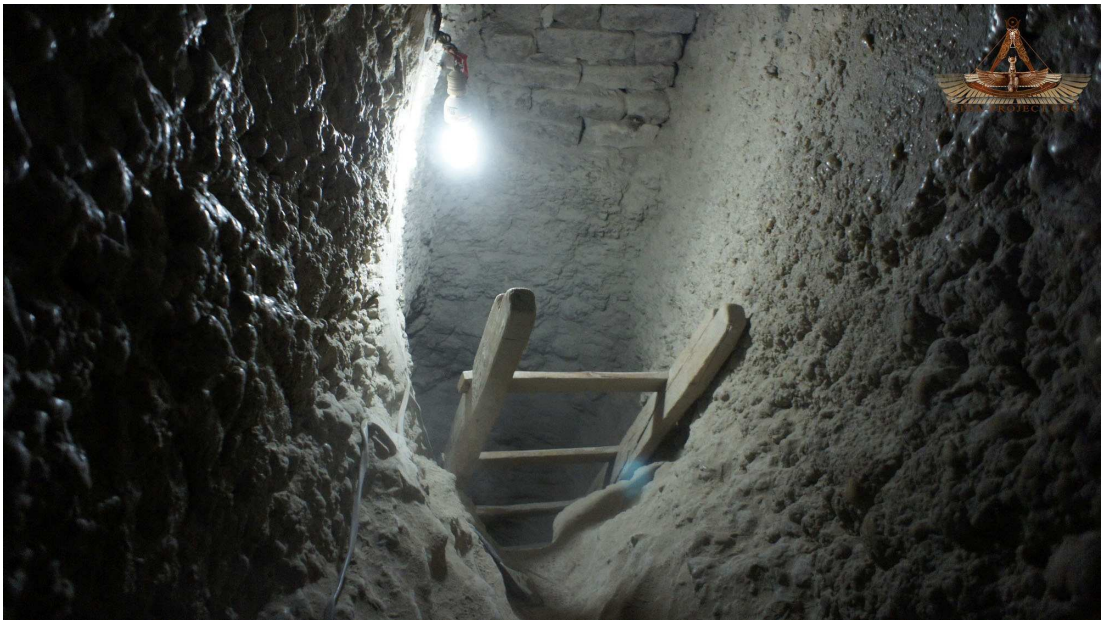
Wainwright says of the robber;

"He knew exactly the position of the chamber, and tunnelling from the south end for about twenty yards from the point nearest to the construction, he made straight for the end of the long north and south passage, which he struck unerringly, and forcing out one stone, apparently by means of a charcoal fire, he entered.---We found a large quantity of charcoal against the outside of the wall at the end of the tunnel, and the stones in the immediate neighbourhood all bore clear traces of fire, being scorched pink and grey. There were also a few bricks piled up against the outside of the wall, all burnt red on the side facing the tunnel."

Above we see the entrance to the robber's tunnel in the south face of the mastaba

Above we have a view inside the tunnel.

At the end of the tunnel a vertical shaft is to be found, note ladder.



Looking down the shaft, brick is visible on shafts north wall.

Looking down to the bottom of the shaft

At the bottom of the shaft, the tunnel travels a short distance north, were it meets the masonry of the N-S corridor; the black hole in the middle of the picture is the opening into the N-S corridor.

Looking north, through the robber's hole, note the depth of masonry in the wall.

In a recess at the far west of the chamber a red granite sarcophagus was found, Wainwright reports;

"The robbers had forced the lid off the sarcophagus, and had rolled it back on two mason's mallets of the usual Egyptian shape. The one still under the lid was as hard as stone from the pressure and the salt with which it was saturated.

The lever with which the lid was forced off was found at the north end of the chamber; it is merely a sont (acacia) branch about 6 feet long and about 2.5 inches diameter, sharpened at the end to a chisel edge. Mr Ayrton tells me this is just what was used for the same purpose in the tomb of Horemheb at Thebes.

There were two curious loose blocks of limestone in the tomb; one in the north and south passage, as it were a seat against the wall. This had doubtless been originally against the sarcophagus, like the other block now standing in that position, so that the lid could be laid upon them before

sliding it on to the sarcophagus. This latter stone appeared, from the angle of the lid above it, to have been used later by the thieves as a fulcrum for the lever."

In the image above from Petrie's report, we see the granite sarcophagus, with the lid slid at an angle, also visible is the limestone block that Wainwright mentions in his report. Inside the sarcophagus the broken up remains of a body were found, which will be discussed later.

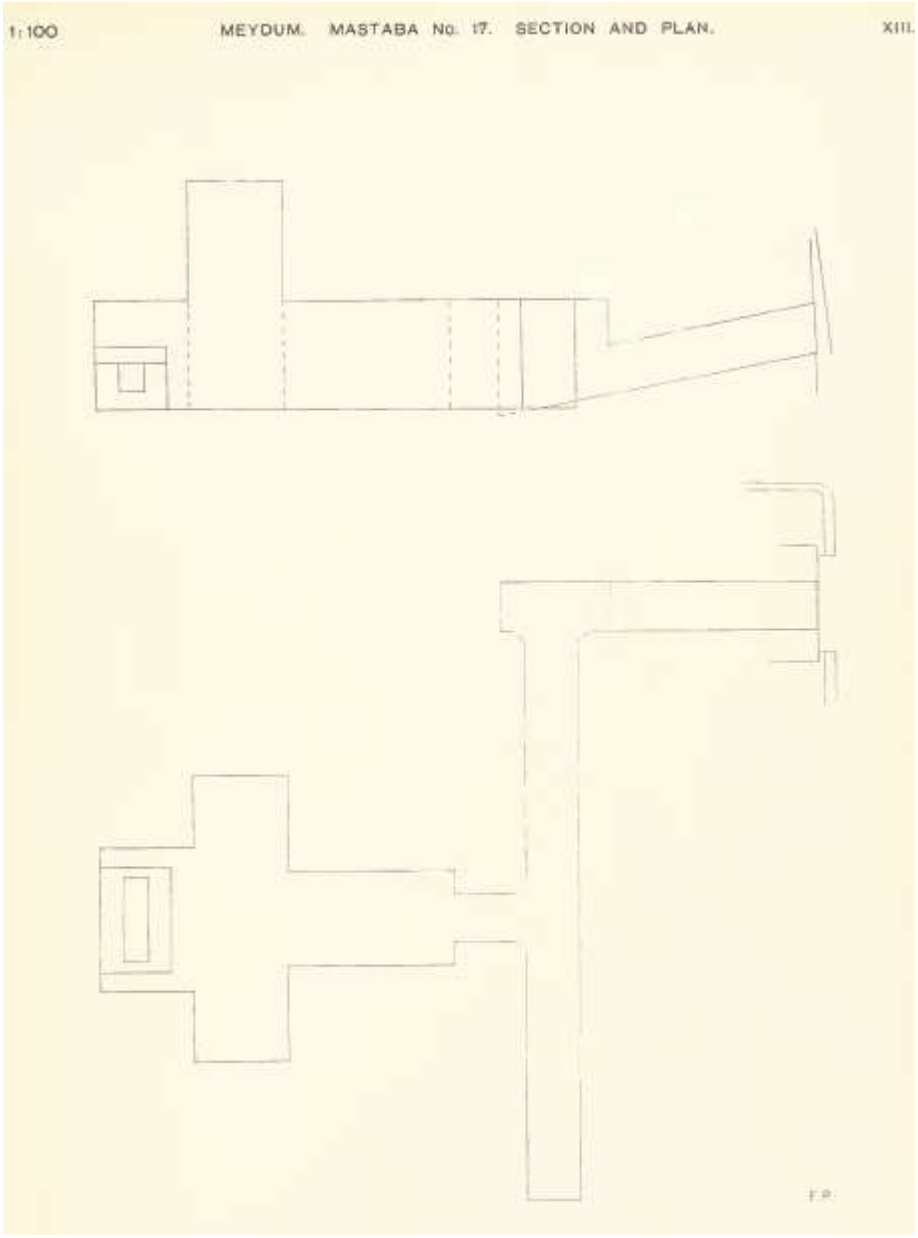
The view today of the sarcophagus, note the numerous limestone blocks present on the chamber floor.

In the view above looking north along the N-S corridor, we have a further 4 large blocks of limestone, with wooden boards on top to help people traverse.

In this view we are looking south towards the robbers hole.

The reader might be wondering were all these limestone blocks come from, considering Wainwright's statement that there was only 3 blocks in the chamber, which he believed were used to rest the sarcophagus lid on.

The only logical answer, is that these blocks are the plugging stones, that someone has removed from the descending passage, by who and when, I know not.



In the drawing above from Petrie's report we have more detailed elevations of the chamber. Wainwright gives measures for the chamber, apart from the descending passage, which he omits from his list of measures; however using a scale rule on this drawing, it suggests that the inclined descending passage is about two cubits square, and a length of about 14 cubits. The blocks we see today in the N-S corridor look fairly square and a lot less than

the width of this corridor, of 2 cubits 2 palms; blocks of approximately 2 cubits square that could be inserted to block the entrance passage, could number about 7 blocks; 4 of which reside in the N-S corridor. The broken blocks in the chamber, may be the remnants of the remaining plugs mixed in with the original 3 stones found by Wainwright.

In the image above we see some of the limestone blocks with clear cutting marks. These are clearly modern cut marks, as Wainwright describes the blocks that he discovered as being hammer-dressed and bearing no sign of any cutting tool on them. The two loose blocks that Wainwright found, he measured and gave the results as, height 36.6 & 36.8, breadth 20.8 & 20.4, thickness 15.1 & 15.2 inches. He provides no measure for the block found against the sarcophagus, but measuring from the photo, it appears to have a similar N-S distance of a cubit as the other two blocks. The height of these blocks is slightly shorter than the sarcophagus height, using mean heights; the blocks are 2.7 inches lower.

This does not mean that the blocks could not function as a rest for the lid; what orientation the blocks took for holding the lid is unknown, the original photograph suggests the breadth of the block is against the sarcophagus, but this maybe just the position the robbers placed it, in order to provide a good leverage effect to remove the lid. The sarcophagus side walls are very thick at about 20.1 inches, the internal width of the box is only slightly more at 22.2: the lids width at 56.5, means that if the lid was slid open enough to

align with the internal cavity and provide clear access, and the three blocks had their breadths against the sarcophagus, there would be an overhang of the lid of 21.2 inches; and as the lid is 56.5, the greater mass of 35.3 is supported by the sarcophagus and the three blocks. If the three blocks were rotated so that the shorter thickness was against the sarcophagus, the overhang reduces to 15.8 inches. It would be worth checking to see if the original three blocks mentioned by Wainwright are still present in the chamber.

Petrie described *"The Great Mastaba No. 17 is the largest known, except that of Nefermaat. It was certainly by far the best built mastaba in Egypt, and it is the earliest private stone tomb known, and contains the oldest stone coffin. The chamber is far grander than that of the pyramid of Sneferu."*

It is worth comparing these two mastabas; Wainwright had trouble deducing the measurements of Nefermaat's chamber due to the roughness of work, compared to the much finer work in mastaba 17. The chamber of Nefermaat's is paltry compared to the space provided in mastaba17; for example Nefermaat's chamber of 121.5 by 80.6 inches is less than the sarcophagus recess in mastaba 17, which is 123.5 by 82.6 inches. Nefermaat's chamber is greatly lacking in size and quality; whoever was buried in mastaba 17 was clearly a very important person, so important was he, that he could provide a chamber grander than the pyramid itself.

Wainwright gives a good description of the chamber, he says;

"The stones of which the chamber is built were smoothed by scraping with a flint scraper, the long sweeping marks and minute ridges being distinctly visible on examination. They had been tried by placing upon them a true surface, covered with red paint, and then smoothing off the high parts, which had been touched by the paint.

The walls are perfectly plain and uninscribed they shew many bad places, which have been stopped up with plaster. The stones of the walls were built up while still rough, and dressed down in place, for most of the end stones in the courses turn the corner, by about .7 inch, shewing that this amount has been dressed off them.

The rounded corners of two of the doorways, which are an unusual feature, were also worked after the chamber was built, for the vertical guiding lines in red paint are still visible."

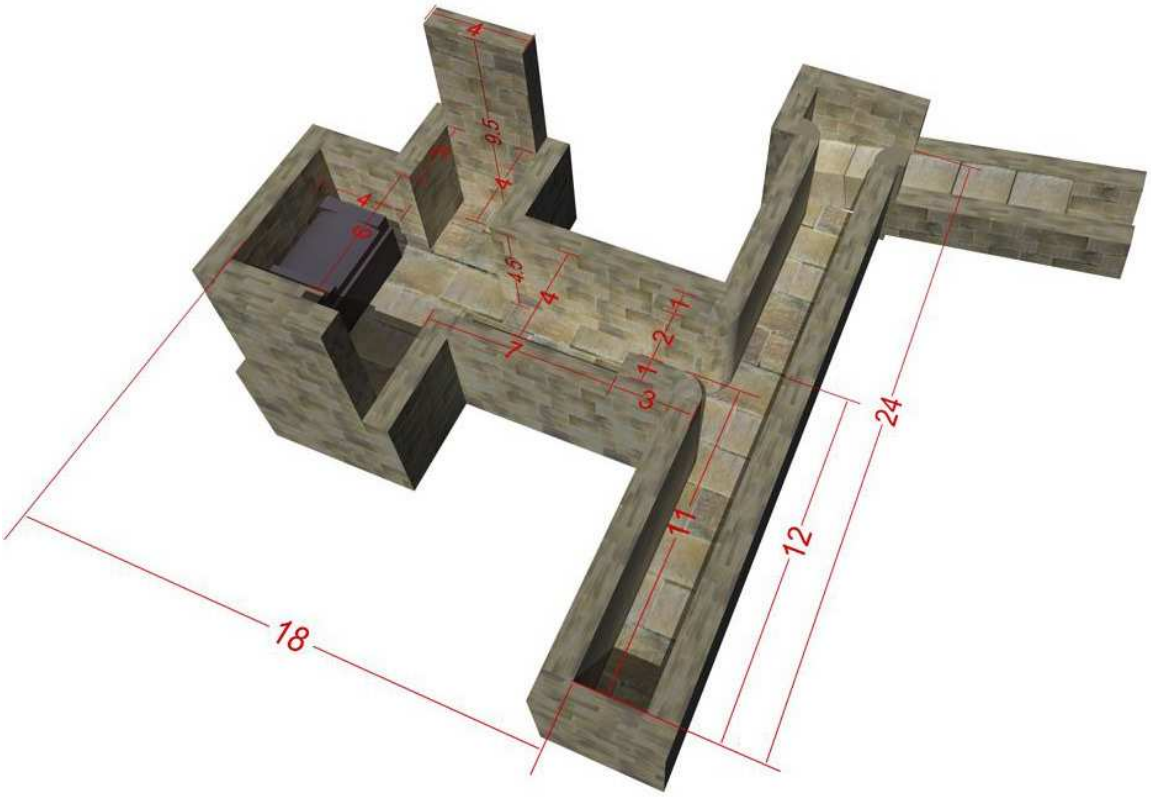
The rounded corners that Wainwright refers to are to be found were the long N-S corridor meets the plugged descending corridor, the other rounded doorway is found at the passage that exits the N-S corridor, halfway along its length. The rounded corners were not to assist the movement of the sarcophagus as it is far too large to travel along the corridors and had to have been fitted before the roofing of the chamber; but they may have been made to assist in the installation of larger grave goods.

A strange feature of the descending passage is that its height increases at its west end to match the height of the N-S corridor, this means we have a large space above the plugging stones, which seems illogical as a security device, indeed Petrie took advantage of this flaw, by breaking into this space and crawling over the plugging blocks into the N-S corridor. It appears this space was purposely constructed as a turning recess, for larger items brought down the descending passage, and the rounded corners would aid the introduction of some items into the N-S corridor: likewise the rounded corners found at the doorway halfway along the N-S corridor could help with clearance issues.

The long N-S corridor appears superfluous, what was its function? Logically it could have been omitted and we could have had the descending passage directly connect to the short passage that leads of the N-S corridor. The amount of work put into its construction shows it had some important function, be it even symbolic. The length of the N-S corridor, omitting the descending passage is 24 cubits, the middle and therefore E-W axis of the cruciform chamber is 12 cubits. The rounded doorway of the short passage is 2 cubits wide; therefore the north-south walls of the short passage are each 11 cubits from their respective ends of the N-S corridor. The height of the corridor is 4.5 cubits and consists of 6 courses of masonry; this does not mean that each course is ¾ of a cubit, as Wainwright mentions that there is 12 courses in the higher hall, that vary in thickness from 14 to 17.2 inches.

The short passage leading of the N-S corridor is 2 cubits wide and 3 cubits long. This short passage opens into what Wainwright calls the gallery, which is 4 cubits wide and 7 cubits long; the short passage, gallery and sarcophagus recess, all maintain the same ceiling height as the N-S corridor, or 4.5 cubits.

The gallery in turn opens into the hall which is 12 by 4 cubits with a height of 9.5 cubits. Opening of the hall, we finally have the sarcophagus recess, which is 6 cubits by 4 cubits.



In the image above we have the possible intended dimensions in cubits for the chamber. Unknown is the descending passage, from the drawings it appears to be a 2 cubit square passage, its length about 14 cubits and a shallow angle of about 14 degrees. The width of the N-S corridor appears to be 2 cubits 2 palms. Wainwright calculated the average cubit of the chamber to be 20.67 inches.

To get a better feel for the chamber, I will do a photo guide, starting from the robber's entrance.

The original robber's entrance, found at the south end of the N-S corridor

Looking along N-S corridor from the robber's entrance; 4 plugging blocks are to be found on the floor. Halfway along the corridor on the west wall we can see the rounded corner that is the start of the short passage. The wall at the far end is the north wall of the descending passage.

In the view above, we are looking south, with the short passage opening on the right. The nature of this junction has necessitated a single large roof stone to bridge the N-S corridor and the short passage.

Looking north, at the north wall of the descending passage, at this junction we also appear to have a single large stone roofing this junction. The smaller roofing blocks have an east-west orientation.

In this image, taken from the rounded entrance at the north end of the N-S corridor, we are looking into the west end of the descending corridor, which has been raised to match the ceiling of the N-S corridor. Petrie clearly states that the plug blocks extended all the way to abut against the visible wall above; even though there was a great space above the plugs at this junction. Note how some course levels are not the same, and how some of the blocks seem to turn a corner, due to the dressing down of these blocks.

The descending passage has a lot of debris, so it's hard to make out the masonry layout of the walls, but there is an indication that the wall blocks are vertical and not inclined to the slope of the passage. In the image above we see a triangular piece of stone inserted above horizontally laid blocks that follows the slope of the passage roof.

In this view looking east from the west end of the descending passage, we can see the last roofing block standing on edge, from this roofing block the passage rises in height to match that of the N-S corridor; whose rounded corner can be seen on the right. Petrie's breach into the descending passage can be seen on the left. Below, looking up descending passage and debris.

From the high hall, we are looking east into what Wainwright calls the gallery, then the narrow short passage, leading into the N-S corridor. After the large roof block that covers the T-shaped junction, the remaining large roof blocks along the gallery appear to have an N-S orientation.

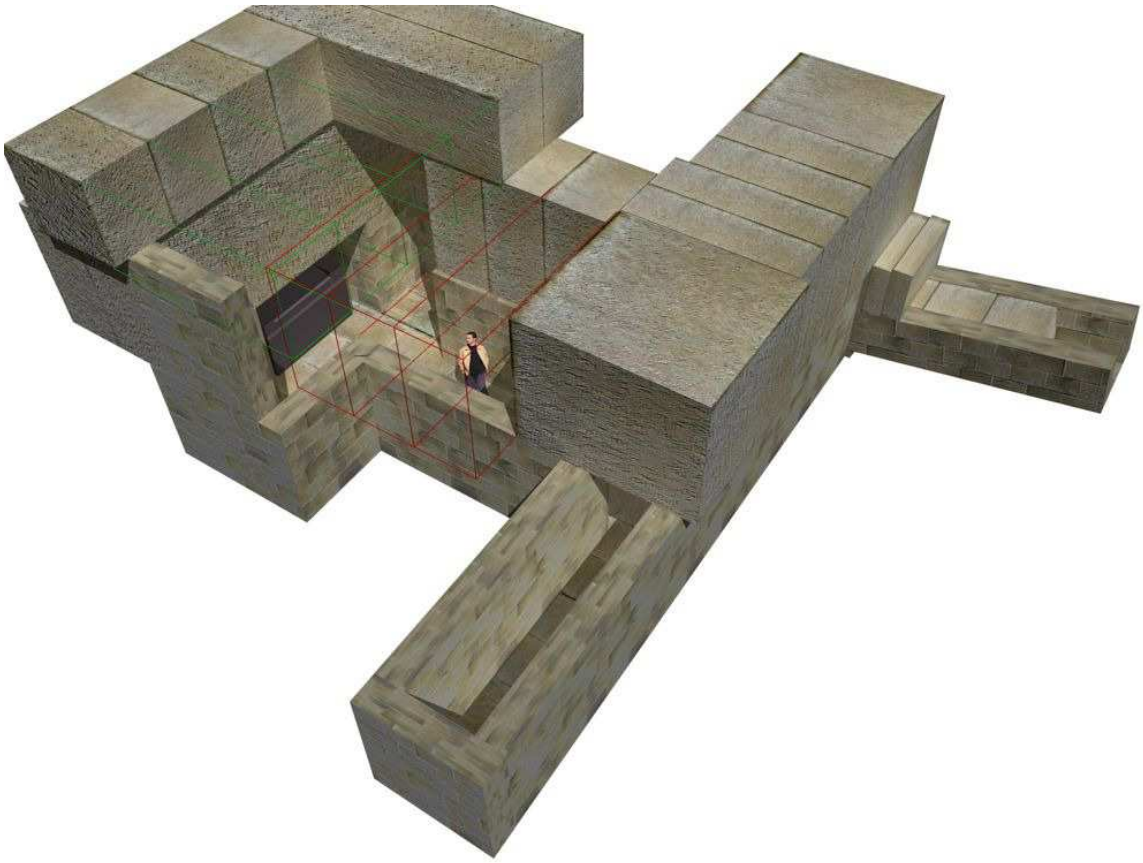
This view, taken from inside the sarcophagus recess, lid in foreground

This view from the gallery looking towards the sarcophagus

This view taken from the southern recess of the high hall shows its corresponding northern recess and sarcophagus recess. The ceiling height of the hall is an extra 5 cubits higher than the 4.5 cubit ceiling height for the rest of the chamber, giving the hall height as 9.5 cubits.

In this image we see the large roofing block spanning the sarcophagus recess; this was measured in inches as length 218, height 103.6, and thickness 50. Petrie calculated it as weighing some 38 tons. A similar block resides behind this one and these two blocks provide the roof for the sarcophagus recess. These large roofing blocks continue across the high hall and roof the gallery down to the junction of the short passage. The ceiling of the high hall is roofed with blocks with an E-W orientation.

Construction lines can be seen on some of the ceiling blocks, along with red marks highlighting the smoothing process



In the image above I have made an impression of how the roof block arrangement may have looked. The T-junctions seem to be covered with squarest blocks, while the rest of the chamber is covered in more rectangular blocks. It is not known if the weight of the roofing blocks is totally supported by the wall masonry, or if a portion is supported by the rock: the robbers breach suggests a good depth of masonry; however this depth of masonry is not recorded. Also not recorded is the floor of the chamber, no information is given as to its construction in the reports.

Ideally, a new more detailed survey of the mastaba is required; the original excavation reports are over 100 years ago, and are not particularly detailed. This is a problem that affects many structures in Egypt; unfortunately architectural analysis is not a particular priority of Egyptology and the situation is unlikely to improve.

The Sarcophagus

Petrie says *"The red granite sarcophagus in the recess is probably fifty years older than Khufu, and is thus the oldest known. As compared with the Khufu sarcophagus it is three times as thick; the length and height are the same, but the breadth is two-thirds larger. Its weight is 8.5 tons, and the lid 3.5 tons. Inside were the remains of the body, which, though broken up, shewed that it had been entirely unfleshed and each bone wrapped separately, and then recomposed."*

This is as much as Petrie says about the sarcophagus, the main details of the sarcophagus are provided in Wainwright's report. He says;

"In the sarcophagus all was confusion; the body had been broken up, and searched, in the part exposed by the diagonal rolling off of the lid, and among the human bones which we removed from the sarcophagus were found a portion of breastbone, the skull, and two other pieces of bone of a large bird, perhaps a goose, and part of a skull of a much smaller bird, perhaps a pigeon. This later was not white, as were the others but grey.

On examining the contents of the sarcophagus we were able to extract sufficient material to shew the nature of the burial. There was apparently no wooden coffin inside the sarcophagus, for although a number of pieces of wood were found lying with the body, they appeared too fragile to belong to a coffin, but were probably parts of a small box; none of the prepared pieces being over 13 inches long or 6/10th inch thick. Nor does there appear to have been room in the sarcophagus for a coffin, the hollow being 6 x 2 x 2 feet, or, more exactly, 73.25 x 23.5 x 23.6 inches; yet three of the pieces were exactly of the shape and size of the later coffin tenons, and one still had the cross-grain of the box side, in which it had been inserted, adhering to it."

There appears to be a discrepancy in Wainwright's measures for the sarcophagus; in the text above he gives 73.25 x 23.5 x 23.6 inches for the hollow, yet in the list of dimensions he gives at the end of his report, he gives, 73.2 x 22.2 x 23.5 inches for the hollow. The major difference is in the width of the hollow.

The Isida Project measured the thickness of the sides of the sarcophagus at just over 50.5cm, which suggests the later measures are correct as a width of 23.5 inches, assuming the hollow is exactly central, would give a thickness of 49.4cm. Ideally the sarcophagus requires a more detailed measurement in order to recover any intended dimensions of its design.

Wainwright gives the width as 62.4, which he took as 3 cubits of 20.80 inches; if for example we use this cubit for the hollow, to the nearest digit we get, length 3.5 cubits, breadth 1 cubit 2 digits, depth 1cubit 1 palm.

The lid for the greater part is curved along its length, and at its ends are two rectangular portions, which Wainwright gives as, *Length of ends 12.6 and .7 inches; thickness of ends 14.0 to .3 inches.* On these ends handling bosses have been left. The width of the lid does not match the width of the sarcophagus; the lid is 56.5 compared to 62.4, a difference of 5.9 inches or two palms. The length of the lid is slightly longer at 91.2 compared to 90.7 to .9

The quality of the sarcophagus as described by Wainwright;

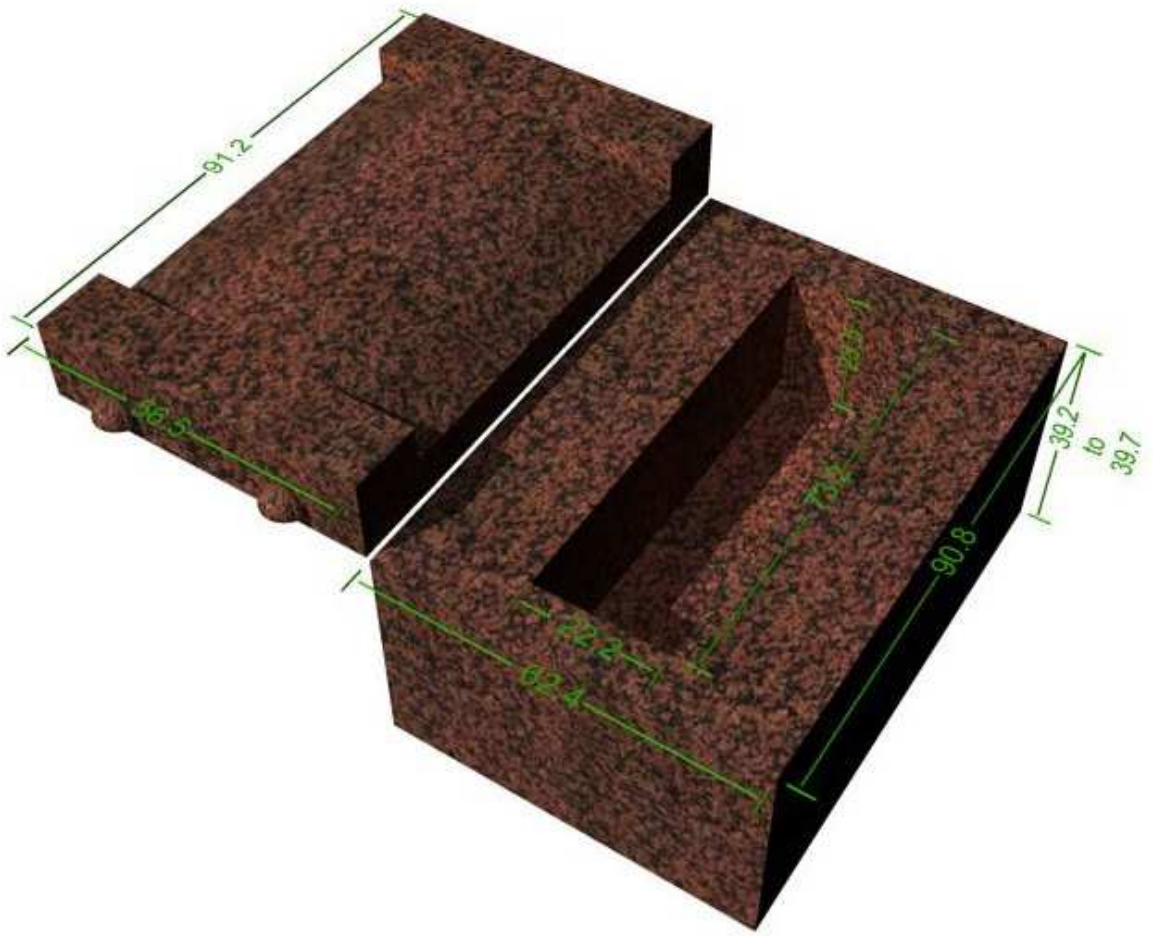
"The sarcophagus was of red granite, of very massive construction, with a cover of the usual early shape. The workmanship is fine; the accuracy of the flatness of the interior having an average error of not more than .025 inch over a surface of about 6 x 2 feet, and even this variation is in large wide curves. Over the smaller area at the ends, about 2 x 2 feet, the average error drops to only .02 inch.

The interior surface is hammer-dressed and partially polished, bearing numerous signs of working with a copper or bronze tool.

The perpendicular inner edges are drilled, while the edges between the bottom and the sides are hammered out, the angles not being sharp, but wide and rounded.

The interior, though quite smooth, is not so carefully worked as the interior. A great chip has been knocked off one corner of the sarcophagus, apparently in lowering it into place, as it has been cleared away."

The size of the hollow for the body is smaller than Khufu's granite box, which is 78.06 x 26.81 x 34.42, compared to 73.2 x 22.2 x 23.5 inches. Wainwright has given us some bone lengths, such as tibia and femur and from these; formulas have been developed to help provide a height for the occupant of the sarcophagus. These suggest the occupant is 1.72m or 67.7 inches. I myself am 1.67m or 66 inches, and have a width across the shoulders just under 18 inches: even if we allow for a wooden coffin, that could reduce the available space by 2 inches in each direction, there is still space for the occupant.



In the image above, I have placed Wainwright's inch measures; there is a variance of half an inch in outside height: the outside length is the mean of Wainwright's measures, which he gives as 90.7 to .9

The long side walls of the granite box are quite thick compared to the end walls, 20.1 compared to 8.8 inches; the floor of the box is some 16 inches thick.

There appears to be no additional security measures for securing the lid to the box, like we see for example in Khufu's, to prevent its removal; the weight of the lid being its only security.

The Remains

Wainwright reports the condition of the remains found in the sarcophagus as

"The body was buried with wooden model insignia, consisting of a mace and two crooks, of one of which only a portion remained. The sticks were apparently of cedar, and the crooks of sycamore, not bent round, but cut out of a straight board. The crook in one case was painted yellow; the other was too perished to shew any traces of colour. They are 20.8 inches – 1 cubit – in length, over all. There was also with the body a wood carving of the pendent tag of the kilt, 7.3 inches long, and the knot, 4.4 inches long, with which the kilt had been represented as fastened. From the thickness of cloth on the neck, the dead man had evidently been restored to his living shape, as had Ranefer, and he had been dressed with wooden models of the fastenings of the clothes, as had Nefermaat.

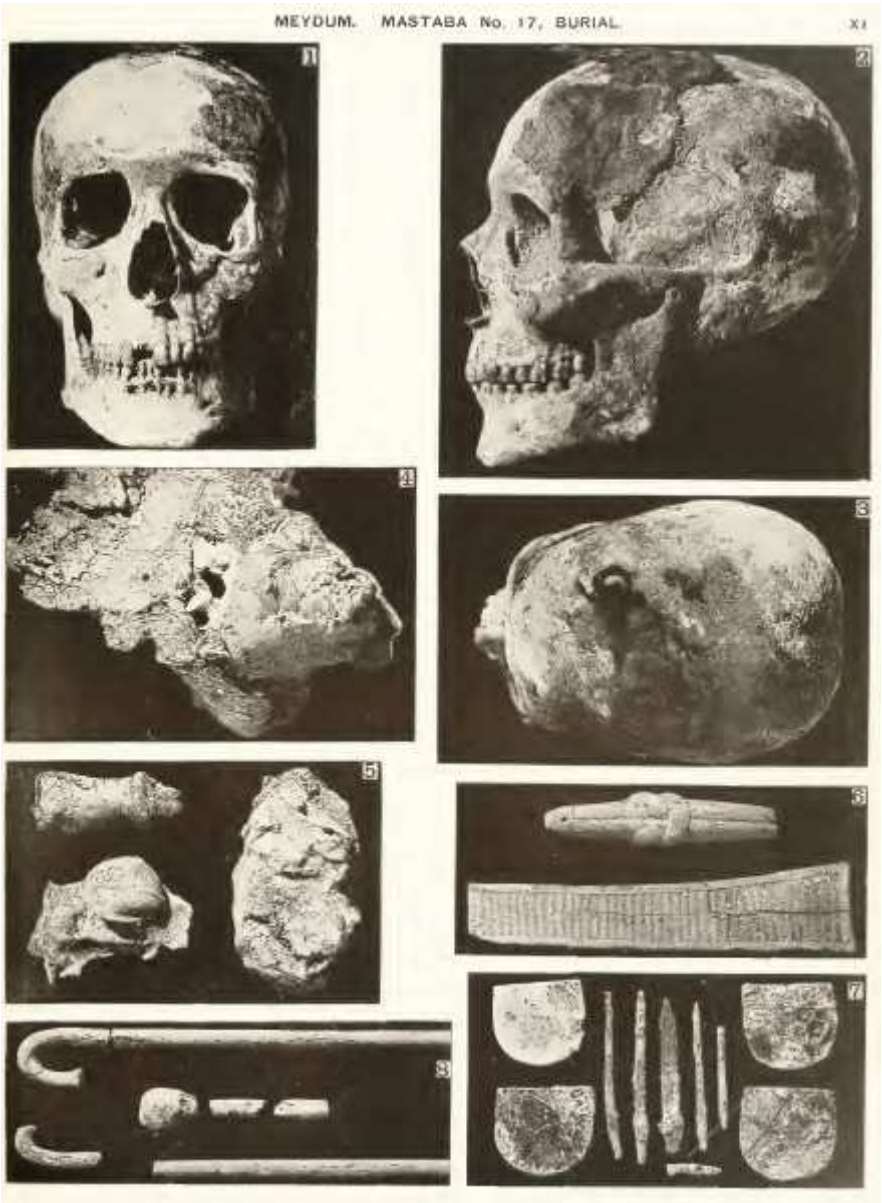
The condition of the body itself is of great interest, as although most of the wrappings had gone to dust, yet a considerable quantity remained in situ, strong enough to bear handling and examination. The main examples were on the left radius and ulna, which still bore wrappings to the thickness of about half an inch, and on the neck vertebrae wrappings about 1 inch thick still remained. On examination of the left radius and ulna, it was found that no particle of flesh or skin intervened anywhere between the wrappings and the bones, the linen lying directly on the bare bone. The two bones were correctly adjusted, and had been wrapped as one, the linen being so well wadded between them as absolutely to touch and to give the idea that each had been wrapped separately. There were also scraps of linen adhering in the hollows of the wrist sockets, and on the bearings of the elbow joint.

The right humerus still preserved bandages all over the joint, while the left humerus also had a quantity of thick bandages on it.

Many of the other bones also shewed clearly remains of linen adhering directly to the bone itself."

Wainwright goes on to describe the body in more detail; the eyes had been replaced with balls of paste, the septum of the nose was intact so the brain must have been removed through the foramen magnum. Three packages found in the sarcophagus were found to contain only vegetable matter, and those packages that were returned to the body only contained a part of the organ, the rest of the package being made up of vegetable matter and mud. These defleshed remains are not unique to mastaba17, as Wainwright reports on the body of Nefermaat;

"It is therefore perfectly clear that, as in the case of burial of No. 17, the body of Nefermaat had been unfleshed before wrapping. But in Nefermaat's case apparently each bone had not been wrapped separately before the final bandaging, as No. 17 had been, but the skeleton seems to have been bandaged as a whole."



Above, some of the items recovered from mastaba 17.

1-3 are views of the skull; Petrie reports that it was *"so broken up in travelling that it could not be restored"*.

4 *"is the mass of wrapping from the base of the skull, shewing the cervical vertebrae in the middle; the mass of padding from inside the jaw is to the right, the wrapping of the occiput to the left."*

5 *"shews the penis modelled in cloth, as a separate parcel not attached: below that the inner side of the covering of the eye with the globular pad from the orbit, formed of cloth pressed in by a lump of lime clay; to the right a packet of cloth simulating an embalmed organ."*

6 *"the wooden carving of a girdle tie and tag of cloth".*

7 *"the copper models of axes and chisels (at Manchester and Univ. Coll. Lond.)"*

8 *"crooks of wood and model mallet (with 6 at Univ. Coll. Lond.)".*

I have not been able to find any detailed papers on the burial practice we see in mastaba 17; dismembering of bodies can be traced back to pre-dynastic times, and one source I found, suggests this practice appears to disappear in the 5th dynasty. Whether this is some sort of excarnation ritual carried out, like can be seen in other cultures, I know not. Though it is interesting to note that the skin was not totally removed from the head, Wainwright says;

"Skin was clearly observable, as a pale brown parchment on the cheeks, and scalp, on which last there was a considerable quantity of curly black or very dark brown hair. But the skin had been removed from the brow all round the eyes."

The remains of large bird bones in the sarcophagus are also a bit of a mystery, the humorous side of me would like to think that some vulture had perhaps eaten too much. We are unlikely to learn more from the body of mastaba 17; my understanding is that the bones were sent to London and subsequently destroyed, courtesy of the Blitz.

Chamber Finds

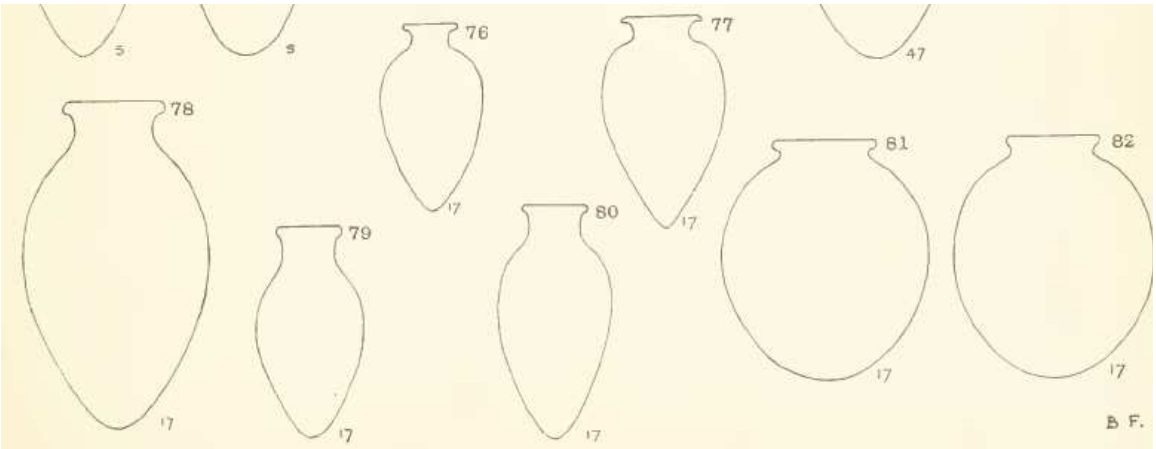
As one would expect, nothing much was recovered from the chamber, Wainwright states;

"Unfortunately the thieves had scattered everything; all the vases (pl. xxvi, 76, 77, 79-82), except one big one, were lying in the north and south passage, between the mouth of the gallery leading to the burial chamber and the south end of the passage, where the thieves had entered.

A few black mud stoppers were found of the usual conical shape, but none of them bore any inscriptions.

At the north end of the hall we found a single large vase (xxvi, 78), several ox-bones, and four model copper axe heads (pl. xi, bottom). In front of the coffin were lying many fragments of gold foil, several copper rods and model chisels, and another piece of ox-bone.

In the south end of the hall nothing was found: evidently the ransacking and division had taken place in the north half."



Above, the vase types found in the chamber.

Concluding Remarks

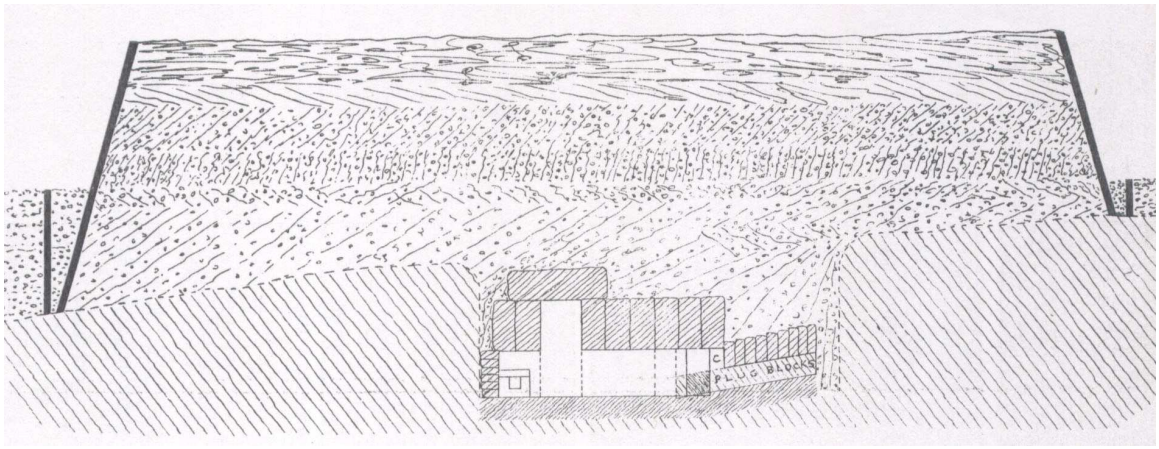
Mastaba 17 is a perplexing mystery; Egyptology tells us that a royal prince died early, before the raising of the superstructure had begun; the prince was entombed with his possessions, and afterwards the mastaba structure was piled on top, with no need for a traditional shaft through the mastaba to the chamber.

However, as a layperson, there are some aspects of the structure that concern me. There are quite a few large mastabas at Meidum and Dahshur, that Egyptology state are members of Sneferu's royal family; however these all pale into insignificance when compared to the unique chamber of mastaba17. What member of the royal family would have the largesse to have such a fine structure built for them; a chamber who as Petrie observed is far grander than the chambers in the pyramid itself. Further, if it was a prince who died early, why do we have such a well constructed mastaba placed on top; generally when kings died, the new king would complete any unfinished construction in a more economical way, basically doing as little as he thinks he can get away with. Yet according to Petrie 100,000 tons of stones and chips were carefully laid to construct this superstructure; therefore should we not see a smaller less well constructed superstructure, like the Nile mud found in Nefermaat's structure?

Great care was taken in the superstructures construction, from the brick walls with construction lines Petrie found at the corners, to the alignment of the structure, which is better than the pyramid itself. What remains of the limestone façade is also very fine work, in short, we see little in the way of economical shortcuts and inferior materials, does this sound right for a mere prince who died early? Whoever was in this chamber, was clearly a very important individual, who could command the resources needed after his death to complete the superstructure, and a structure that would have taken some considerable time to complete.

Another item of concern is the courtyard found in front of the descending passage entrance, here we appear to have carefully built retaining walls, with a strong batter, made of plastered brick; it doesn't exactly sound utilitarian, what was this courtyards function? The chamber construction appears complete, no evidence of any unfinished work in its masonry, as a result of an early death of its owner; yet there appears to be no evidence of any foundation or construction of a vertical shaft that would lead down to the

descending passage, what we have instead is some sort of plastered courtyard.



In the drawing above we can see how close the natural rock is to the entrance, there appears just enough room for a plugging block to be lowered against the rock face, though whether there is enough room to create a lined vertical shaft is questionable. This is a conundrum to me, here we have a finely built chamber, showing no signs of haste or incompletion, that appears totally devoid of any vertical shaft, not even a sign of the start of one, indeed the rock wall appears too close to construct a lined shaft. One could argue that the rock wall would be left and only the other three walls lined with perhaps masonry, though this sounds a bit cheap given the quality and grandeur shown in the rest of the chamber construction, and neither does it explain this plastered courtyard.

This leads me to think that this chamber may never have been intended to be part of a mastaba, but rather a structure that was intended to be hid under ground with no superstructure. This raises the next question; are there any chambers at Meidum that are hidden? Surprisingly, the answer appears to be yes, Petrie describes the three great western tombs about a furlong (around 200m) west of the pyramid, he says;

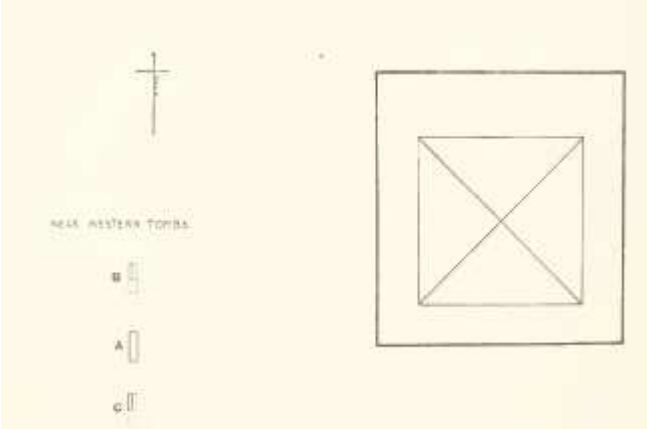
"The great tombs are of one type. A long trench was sunk into the ground, 80 feet long, 22 feet wide, and sloping down southwards to 36 feet deep, see pl. xv. In this was built a chamber, only a quarter of the breadth of the trench, with a sloping passage leading down to it, which was plugged with blocks of stone, see the model pl. xiv, 5. In one tomb, A, the sloping way to the stone passage was filled up, and a brick shaft substituted for access. This

tomb was cleared and planned in the work of 1891, see Medum vii, bottom left.

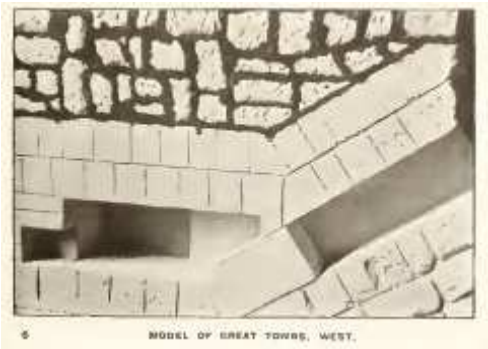
There are some inexplicable features about these tombs, which are unlike any that we know of elsewhere. First, there was no trace of superstructure, such as a mastaba or offering chamber. I had the ground very carefully trenched to the east of the pits, but no trace of brick or stone work could be found. It seems then that these were intended to be hidden tombs, filled up, and left like the rest of the desert surface. Second, there seems no reason for excavating a trench in the rock twice as wide as necessary for the chamber, and then filling it up with huge blocks of stone; this cannot be due to an afterthought, as all these tombs are alike. Third if filling it up there is no reason for always putting the chamber far to one side, and having a much wider mass of stone to the east of it. Fourth, the purpose of walling up with rough stones one side of the sloping approach, and not the other, is again quite inexplicable. This work may be well seen in pl. xiv,6, where the breastwork of large blocks over the tomb entrance is in front, and the small stone walling at the left hand, and carried over the breastwork. These peculiarities naturally suggested that there must be another chamber, or a recess for statuary or offerings, somewhere east of the known chambers. Accordingly in one tomb we trenched all the ground to the east, to see if any sloping way led down to a ka *chamber; we pulled out all the rude stone walling before the breastwork, to look for another entrance; and we removed all the filling of big blocks to the east of the chamber, but found them all continuous, and without any opening in the rock side of the pit. There seems then no possible reason for these strange and apparently useless features of construction. No objects were found in these tombs, except some late interments of the xxiind dynasty; the style and position of the tombs shew them to be of the age of Sneferu. There is an immense tomb of this type at three furlongs N.W. of the pyramid, but it seems to have been destroyed, and we only cleared the outline of the trench."*

The above tombs are just an example of some of the inexplicable tombs found at Meidum.

Obviously these tombs are not of the quality and size we see at mastaba17, but they do demonstrate a possible attempt at tomb concealment; some would surely be aware that as soon as a superstructure is placed above, you are basically saying that x marks the spot.

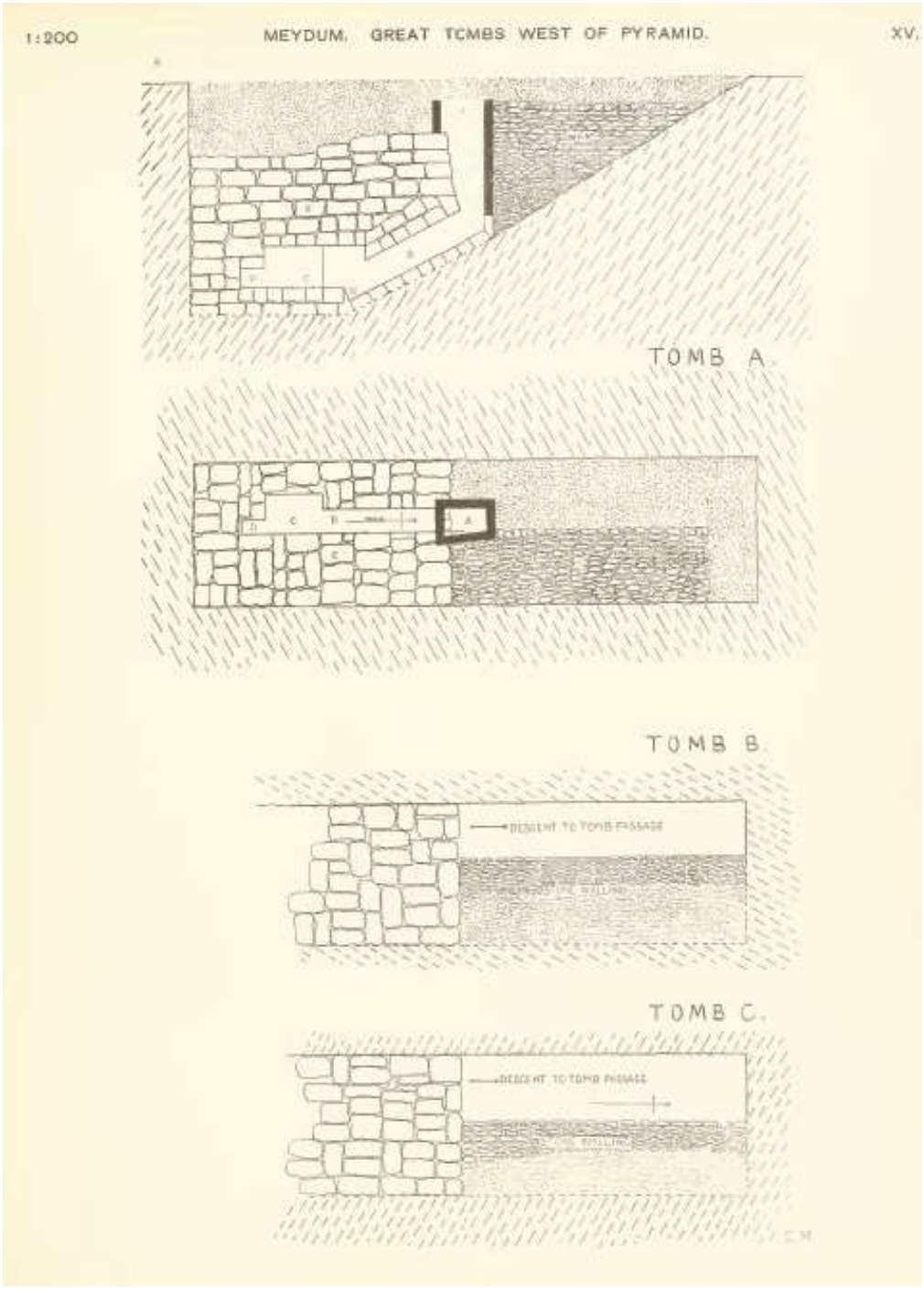


The above drawing shows the location of the great western tombs



Petrie's model of one of the great tombs

Entrance to great tomb, from Petrie's pl. xiv



Petrie's drawings of the 3 great tombs

Looking at the construction of the chamber in mastaba 17, I see something built more for a king than a prince; it might be that this chamber was a plan B for the king in the event that he died early, before the completion of the pyramid, yet the quality of the masonry seems better than that displayed in the chambers of the pyramid and therefore possibly constructed later in the project.

The two step phases appear to have been completed at the Meidum pyramid along with the final smooth phase, so there would appear to be no need for plan B, unless we go down the route of Herodotus who says *"And though the two kings* (Khufu & Khafre) *built the pyramids to serve as their tombs, in the event neither of them was buried in them;"*

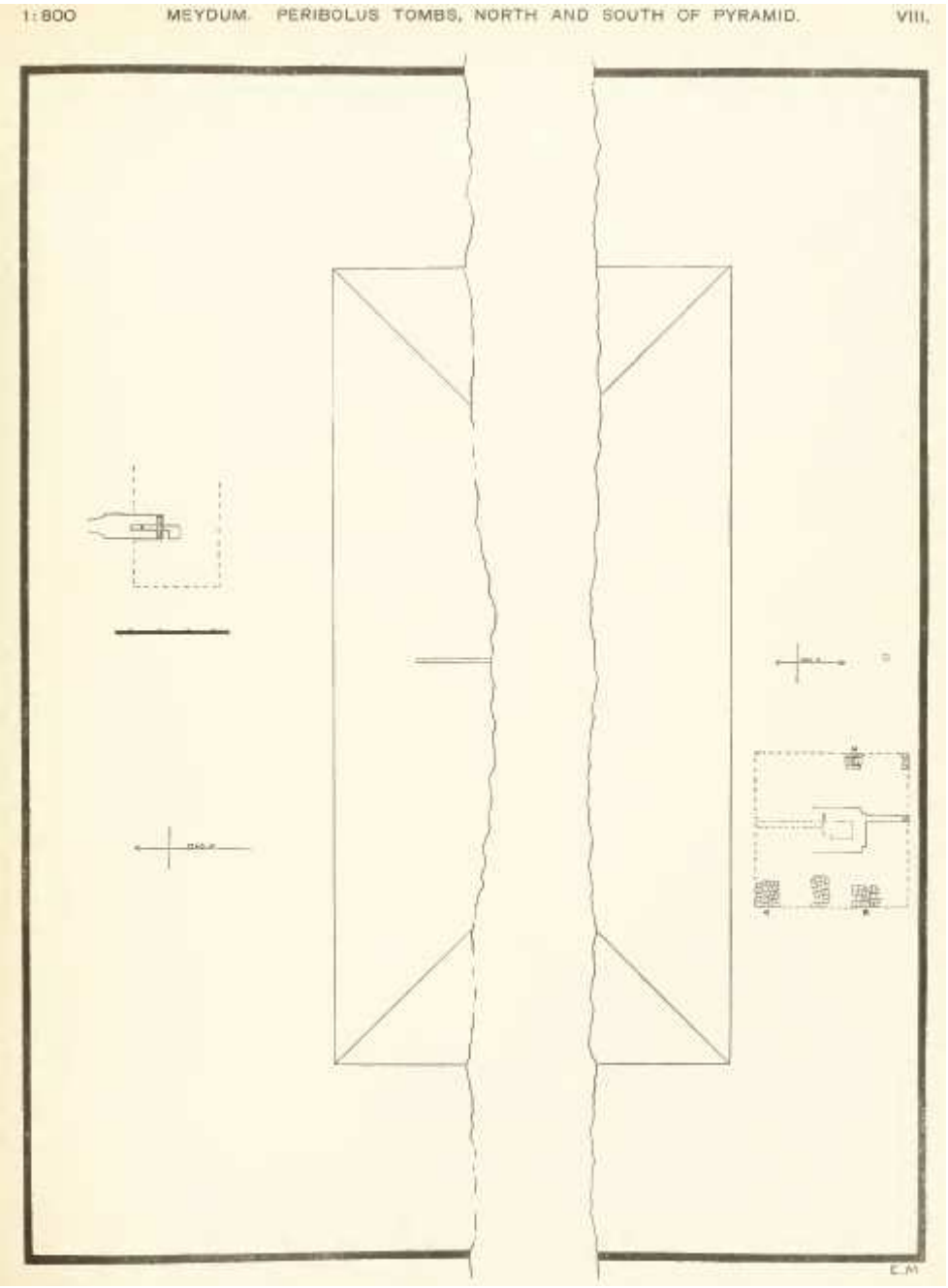
In my Meidum paper I demonstrated the possible portcullis method used in the shaft of the pyramid, which suggests that it was used; but was the pyramid built for the body or something else? Could the body of Huni perhaps be in mastaba 17 hidden beneath the desert surface, with no superstructure? Yet a superstructure was built upon the chamber and the signs suggest from the chippings that make up the mastaba that it was built by Sneferu.

In my Meidum and other papers I suggest that Sneferu's only involvement at Meidum was the upgrading of the site; someone who he must have held in high regard, to dispatch a force to convert a step pyramid into a smooth pyramid, along with a new temple, causeway etc, but could he have upgraded the hidden chamber below mastaba 17?

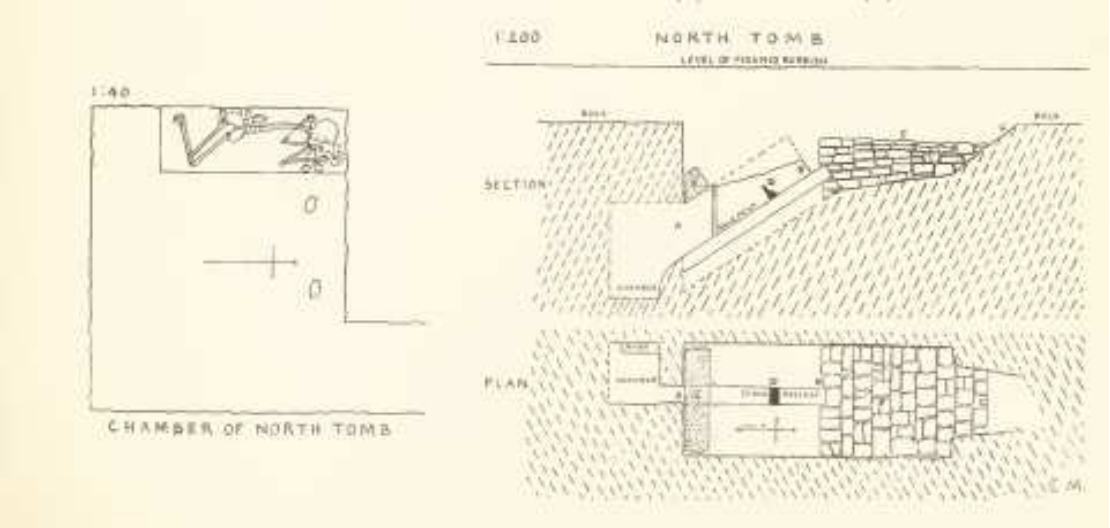
Are there any signs of tomb upgrades at Meidum? A possible candidate is the north tomb inside the pyramid enclosure wall, another tomb that seems inexplicable. Petrie says;

"On the north of the pyramid we found a strange form of tomb. A small mastaba, fifty feet wide, and probably a hundred feet long, stood in the peribolus enclosure, see pl. viii. On the north side near the ground a sloping passage led down, see pl. ix, base. The rock cutting for this was nearly fifteen feet wide, and the building of it was splendid, with great beams and blocks of fine white limestone. The passage was plugged with stone, below which a door slid in grooves. And yet after about twenty feet the end of all this fine work was reached, and only an ignoble little room cut in the soft muddy marl contained the burial; and the roof of this had readily fallen and

filled the chamber, in entire contrast to the splendid 14-foot beam of limestone which roofed the entrance to the chamber. Where sharp contrasts of work are found they are commonly supposed to be due to neglect. But here the rough crumbly chamber must have been cut first; and the massive stone passage was added in front of it, quite incongruously."



The location of the north tomb



The north tomb drawing from pl. ix

If the chamber in mastaba 17 was intended to be hidden without a superstructure, what could be the motive for erecting the mastaba on top? I doubt such an update would be done for a mere prince; but a king would seem more likely, given the quality of construction and accuracy of the superstructures alignment to north. Though any occupant of the tomb may not have been happy with this upgrade since it would only highlight the location of his tomb.

Who the occupant of mastaba 17 was, we may never know; I do not subscribe to the idea that Sneferu built three pyramid complexes, but rather a predecessor built the original step phases of Meidum, be it Huni or some other predecessor: this predecessor may have been buried in the pyramid or the chamber of mastaba17; or it may even be the case that the predecessor to Sneferu was buried in the pyramid and his predecessor was placed in the chamber of mastaba 17. This could be likely as we appear to have two unfinished step pyramids before Meidum (Sekhemkhets's at Saqquara, and the layer pyramid at Zawiyet el- Aryan), is it possible one of these kings was brought to Meidum for burial?

Meidum is surely one of the more mysterious pyramid complexes, unfortunately our picture of it is hazy, our primary resources of the site are often over 100 years old, and the detail in these excavation reports is often sketchy at best. Ideally structures like mastaba 17 etc should be revisited and a more detailed forensic approach taken, to ascertain its building sequence.

Unfortunately this is unlikely, archaeological resources are limited, and new finds appear regularly; such that sites often only get the one chance of excavation. That said, I think the Meidum site is a bit neglected, and it could well benefit from more modern excavation, in the hope that it can answer many of the perplexing questions that the site poses. Mastaba 17 is just one of these perplexing questions, there are many others; in my view it is one of the most impressive old kingdom structures. Buried and out of view to only the fittest of tourists who care to travel through the robber's tunnel, this often forgotten chamber definitely deserves more attention, and hopefully this layman's guide, will bring it to the attention of those who are less fit to make the robber's journey.