

XV

The Horizontal Corridor

Back to the Quadrivium, we may wonder why the stretch to be occupied by five wooden beams is so long and why the floor of the Grand Gallery starts in two stages, by sketching a step leaving a depression 2 cubits long, on the upstream-side of the highest beam.

Having the bridge installed, this floor vacancy had to be filled by five or six additional wooden beams, tapered at the end, parallel to the groove length and resting against the top beam of the mobile bridge (photo sequence **B14...B21**).

This little step may raise questions...

I see a dual purpose. The first is a functional one: a block of over five tons, resting on the bridge as it climbs upward, will inevitably cause the beams to sag due to the wood elasticity. This may cause an insurmountable small step at the bridge end. But the creation of a zone of tapered beams, resting on limestone surface, would solve the problem.

For the second reason you will have to wait a bit.

The floor stretch actually missing—from the end of the Ascending Corridor up to the beginning of the step—is exactly 10 cubits in length, a standardized measure.

Keep in mind, with the beam bridge in place, the heavy granite blocks can be pulled up to the Grand Gallery while, removing it, the path will be completely clear to the Queen's Chamber, so called arbitrarily by the first explorers of the modern era.

A question may arise: what kind of bulky object will have to go through this passage to require these complications?

The answer is obvious: the large statue intended for the niche in the Queen's Chamber!

The presence of this statue has often been called into question: in fact it has never been detected, since the first violators (at the time of Al Mamun) probably broke it into pieces to access the tiny niche behind it (?...!), starting then an horizontal excavation which did not give any result. The pieces of the statue were then allegedly taken outside along with the waste material of the excavation.

Many argue that the statue never existed, that the floor (missing) of the Queen's Chamber has been removed, and more...

Needless to say, I also have my beautiful set of hypotheses to propose, and I think I have made quite a convincing reconstruction. I hope it will be appreciated.

Let us begin by analyzing the various anomalies starting from the Quadrivium: first, the Horizontal Passage.

It came to us in almost perfect condition, well aligned and square, as it should be at the origin.

But it was constructed in a very unusual manner: its first half (starting from the Quadrivium and moving south) is constituted by two rows of blocks for each wall, all of them 2 cubits long exactly, well superimposed with their vertical joints aligned and corresponding to the ones on the opposite side of the corridor (fig. **G09**).

Dormion cries out that this is outrageous, since such a provision, from the structural point of view, is terribly vulnerable and certainly much less reliable than staggered block overlaps used elsewhere and everywhere in the pyramid, but mind you, also much more complicated to carry out.

I wonder if the deformability were not actually the goal of Hemiunu to construct this part...

The second part of the passage, however, was built in the classic way. Interestingly enough, the horizontal passage ends exactly 10 cubits away from the Queen's Chamber entrance with a step down by 1 cubit to match its floor level.

This step has a unique feature: the last block of the passage floor (which is the block of the step) dovetails into a protrusion from the bottom of an adjacent limestone block belonging to the west wall: the whole is smoothly finished according to the passage size (photo **G10**).

I will tell you why this protrusion is so important: something very heavy (the statue) has to be pushed down the passage—which floor was made by limestone blocks inserted between the two side walls. Due to this the floor could be dragged forward as the statue advanced.

This special fitting just averts the risk of a floor dragging.

If this is so, there are some conclusions to draw. First, the passage floor had to end exactly there and with a step; so it was expected that the floor of the Queen's Chamber was lower than the passage's.

Second, having to move the heavy statue inside the chamber, the plying of levers and crowbars would have required drilling holes into the room floor. I guess then that the real floor would have been placed later to reach the same level of the horizontal passage.

More: having to move so heavy an object, it is essential to have an adequate number of men. So when the statue was climbing up inside the Ascending

Corridor, where could all these men stand except in the central groove of the Grand Gallery?

I note it is impossible to operate from the Horizontal Passage because the Quadrivium has to be earth-filled to lay the statue on; this means the Queen's Chamber and the Grand Gallery were designed together, definitely against the bizarre hypothesis the Grand Gallery as a part of a project added *a posteriori*.

Entering the room, it is possible to see that the west vertical edge of the entrance is still protected by a slight "L-shaped" limestone protrusion never removed (photo **G11**).

I had first in mind that this protrusion had the purpose of protecting the statue during its transit but later, since the statue was made for sure of diorite or other hard rock, it was the corner itself requiring protection cause the positioning of the statue in transit... (?...!).

The room floor has a very complicated layout and the surface, even rough, shows traces of particular activities.

The whole room perimeter (with the exception of the east side which was rebuilt) shows a very rough edge, a cubit wide and about 1p high (photo **G12**), in which strategic large holes were drilled, suitable for inserting poles to be used as levers.

This edging frame is wide enough (1c) to allow a man standing up.

The central part of the floor, however, is partially smoothed, probably to help the statue moving.

This area shows processing marks in a curious zigzag shape and some other squiggles (?...!).

I forgot: the niche.

Inserted in the east wall, there is a remarkable niche built with the overhang technique, thus narrowing upwards. This niche had a smaller (?..!) one within it, hidden from the statue when installed in.

The great niche gives an idea of the size of the statue.

Having the niche floor a rectangular shape, I deduced that even the base of the statue must be the same, with one side bigger than the other, to allow it to pass along the passage with a few millimeters of gap between it and the corridor sides.

According to that, the statue had its whole trip lying on one side—the right-hand one to be accurate (?...!) —starting from the pyramid entrance.

Remember that it has to climb up along the Ascending Corridor, so it would be necessary to use the tow-blocks described elsewhere.

This method requires that the statue possess a rectangular base (a pedestal, in short) and it was taken inside with the head forward.

At the Quadrivium there was a suitable heap of earth to rest it.

After careful removal of this earth, it continued its journey along the Horizontal Corridor.

As I tried to imagine what the shape of this statue could be, I realized that, in order to slide on its side without breaking, it had to have a fairly big lateral surface to support it, not risking any damage on smoothing parts.

I came up with a throne with a backrest and sides to give support and create the right sliding surface. Of course, the real statue had to be contained within this throne box to never touch the ground.

Since a God seated on a throne seemed undignified, I thought that the statue would represent the pharaoh, and... click! Idea!

I do not claim this as a fact, though it is certainly an attractive hypothesis: there is, as I know, only a very small statuette representing Cheops, seated on a throne, having exactly the features I needed (photo **G13**).

Well, it's not outrageous to imagine that the statuette was actually a copy of the big one, resting somewhere, waiting for its journey in.

Of course, I do not mean to insist on this detail, but I will pretend that my statue was made exactly like that (the proportions, too, are consistent).

The small replica does not have any rectangular stone base; the original had but inserted into the room floor and precisely 1c high.

To summarize: a rough floor is necessary to move the statue by levers into the niche, then the side border will be removed and the final floor, 1c high, will be installed to align it to the passage floor.

I forgot: between the step and the entrance there are 10 cubits, to be earth-filled to allow lowering the statue into the room.

Let us return to the statue: Cheops seats on a very simple, square throne with a backrest and sides, exactly like the statue of the Cairo Museum. The rectangular base should be 1 cubit high, probably 2 cubits + 1.5 palm wide (116.25cm) and exactly 2 cubits deep (the corridor is 117cm high and 105cm wide).

Let's check the statue height: 1 cubit for the base, 3 cubits more to the top of the backrest, plus another 2 cubits for the head and the crown—a total of 6 cubits (315cm).

These measurements (including those of the base pedestal) suit the niche, but there are a lot of issues to deal with.

Before I forget: I chose the right side to slide the statue in because that way I can explain the curious Z-shaped marks in the chamber floor and some anomalies on the west side of the passage, both of which I will discuss a little later. The back of the throne then will slip against the west wall with a highest risk to the (protected) corner of the chamber, but the minimum for the statue. Another observation: all along the Horizontal Passage, placed in strategic positions, are crude holes dug for the usual reasons, but one, exactly halfway down the passage, has a very particular shape and dimensions; it is a circular hole, well-worked (therefore planned) having a diameter of about 20cm and centered in the width of the passage (?...!) (photo **G14**).

I'll talk about these holes elsewhere, for now it is enough to know that they are necessary to push from behind, even if this help will necessarily be modest; the statue will advance into the passage thanks to a front pulling by a rope tied around the king's head with very little dignity.

The journey through the passage must have been terrible and risky...

The size of the passage is just compatible with that of the statue; in fact, many times the back of the throne was stuck against the west wall.

In such cases small stonemasons had to scratch by chisel the wall and the backrest of the throne at the contact points. This explains the curious groups of chafing found on the sides of the passage (particularly on the west side (detail **G09**).

By risky journey, I mean the limited air supply: the pedestal has almost the same size of the passage, so only the air trapped in the Queen's Chamber and the passage section from the statue to it, was available.

Also keep in mind that from the north side just some pushing, perhaps by a wooden ram, was possible because the small space.

The statue would weigh at least 3000Kg. Using the usual friction coefficient 0.5, a force of 1500Kg will be necessary to move it, that means at least 40 men plus 2 stonemasons, a light-holder and a priest.

This is very fanciful but not nonsensical: only one person, absolutely trustworthy, has to know that, in the event of extreme hazard, the hidden ducts in the chamber could be open to get more air...

The architect knows very well that, if anything happens to the men inside, the passage would remain blocked, since the statue cannot be removed from behind; also the time is pressing (the Pharaoh has already been buried and any operation delay is unthinkable).

At last the statue is inside the chamber; however much more work is necessary to put the statue in its place.

I will not presume to reconstruct all the movements made by the statue inside the room, however...

First it must be put in an upright position and this can be done only by working along the length of the chamber, as per the east-west axis.

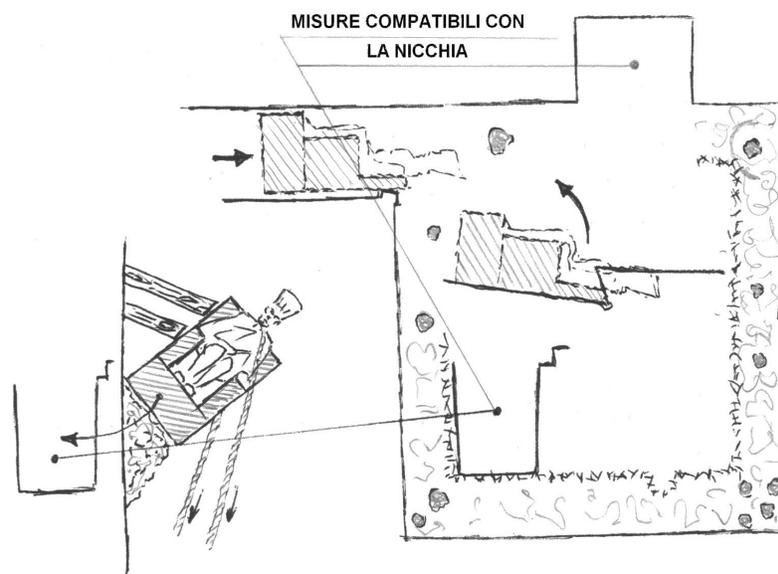
By the statue just entering the chamber, first it has to be moved to the center, that means pushing a little to the west and then south.

The floor in its central part has already been prepared smooth but stonemasons still need to work on it, by chiseling between the statue basement and the floor surface, while other workers pull the ropes or ply the levers embedded in lateral holes, or push the lower part of the statue from behind with a suitable wooden ram.

In this manner the south edge of the backrest reaches the center of the room, having left on the floor, by way of the chiseling, one of the two zigzag marks still visible.

I believe actually the short line of the Z mark is not straight but an arc of a circle, described by the throne backrest corner when the statue was being turned to assume the east-west direction.

Prior to the upright positioning of the statue, another suitable earth bedding will have to be prepared in a smoothly rectangular area of the floor.



Efrem Piccin

Figure 16: the Queen's Chamber

In fact, at the northwest corner of the room, there is a perfect imprint of the statue basement in the floor, an imprint compatible with the size of the niche and the section of the horizontal passage (fig. **G15**). One more detail: during the last rotation before the uprighting, the pedestal has probably hit the chamber north wall, leaving a deep mark halfway between the entrance and the north duct.

The mark seemed to be consistent with the pedestal measurements, but I had no way to know its height...

Recently my friend Jon Bodsworth measured the mark height from the floor and gave me a reassuring photo (photo **G16**).

The topmost part of this mark is located at 124cm above the floor and this is not consistent with the 116.25cm I had presumed for the pedestal height. But looking carefully at the picture, I realized that the floor here has been smoothed so there is no more trace of the edge (1p = 7.5cm high) surrounding the entire room (photo **G17** and **G18**). Adding to it the pedestal height, we have exactly a value of 123.75cm!

Referring to photo **G18**, we can perhaps deduce the last movements of the statue.

After being uprighted, the statue was in the northwest corner of the room, where left the rectangular imprint in the floor, with the pharaoh statue facing north.

The rectangular imprint includes a part of the removed perimeter edge.

Any statue displacement was carried out using the floor “scraping” method previously described.

It was necessary to rotate the statue with the Pharaoh facing west before to put it into the big niche.

The statue has to be rotated 90° and moved to the chamber entrance at the same time. This complex movement required all the available space near the entrance. For this reason the edge had been removed—but only at that time. This explains why the mark on the wall is higher than the statue basement.

The third part of the Z mark, along the north-south axis, but in a more central position, is maybe due to the positioning of the statue in front of the niche. One more move is missing: the installation of the statue into it.

The last part of the enterprise, but no less challenging: pushing can only do the job and it will not be easy.

The levering poles have to be placed a little away (the edging frame in front of the statue has been already removed) and the use of a battering ram may be helpful,

but mainly the work of a small stonemason scraping the floor continuously behind the statue is essential. The little niche behind the statue will allow him to complete his job until the statue will be installed.

A small forward tilting of the statue will enable him to go out...

Upon reading it over I find that everything is too stodgy; I doubt anyone will ever have the patience to read this part to the end. I'm sorry though, because I find it very convincing.

Of course: I am blowing my own horn... but I hope you are convinced that the statue did exist and was laid in place on time. Too bad the work had not been finished properly; in any event, with the coming of the violators, the result would have been the same.

An improperly sealing procedure often occurred in other funerary monuments too. In Cheops's pyramid the amount of unfinished things is truly remarkable, but that is all to our advantage.

Now we come to the first half of the Horizontal Passage built in so strange way. Of course, Hemiunu made a deliberate choice to construct this part as it is, having in mind a particular goal.

I add a detail: in recent times, someone has drilled three holes into the west wall blocks at the end of the "anomalous" tread of the passage, finding beyond the blocks a kind of cavity filled by sand, similar to the two small ones at the south and north side of the Zed...

One more detail from Dormion: some blocks of this part of the horizontal corridor have a wider gap in between (2-3mm). The external part has been filled by mortar, while the internal part by something black and rubbery, maybe coal tar or vegetal resin.

Also the first part of the floor is atypical: the blocks are narrow and often side by side, showing a poor structural rigidity, almost a propensity to warp (dis. **G19**).

These details may show the purpose of the architect.

Now imagine the statue placed into the niche, the Queen's Chamber floor leveled and the last one-cubit high layer installed. Everything is perfectly finished: the chamber, the passage floor and the statue at the same level; even the vertical edge protection at the entrance has been removed.

In my opinion, this chamber had to be the most secret and inaccessible one in the whole pyramid: the true secret heart.

Wanting to hide the room, all traces have to be erased. The exits of the two ducts arising from the Queen's Chamber have to be concealed: the statue is in position and their use was not necessary any more.

I will describe the concealing method later on, talking about the famous blocks with "handles", found inside the two ducts.

Even the horizontal corridor to the chamber shall disappear. I am deeply convinced that this operation had been long meditated upon by Hemiunu since the beginning of the project.

Having the Pharaoh already buried, everything must be done quickly, using parts already prepared well in advance.

The passage will be filled with limestone blocks, 2 cubits long, like those of the walls, but inserted staggered by 1 cubit respect to them. The filling will affect just the first half of it: if anyone will discover the deception, certainly continue up to the room, to find the beautiful statue only.

The length of the blocks will be short (2c) since they have to be pushed from behind. The size is very close to the corridor section and the risk to be stuck against the sidewalls or the ceiling has to be avoided.

Should someone, digging in the body of the pyramid, intersect these blocks, they should not be able to acknowledge the presence of a hidden back corridor.

The blocks were then stacked somewhere ready to climb.

The pedestal of the statue was only one cubit thick, while these blocks are two cubits. I want to notice this because the width of the corridor, fairly good for the statue, might not be good enough for the blocks, since long twice. Then in the event any minimal settling may occur, as Hemiunu fears, problems would arise. The modest "adaptability", provided by the two lateral sand pockets, will solve the problem.

If this part of the passage had been built in the staggered way and even a minimal lateral settling occurred, the filler blocks would not have entered the passage.

It would be a tragedy if a block had to get stuck: no men at the other side for chiseling, no chances to take it back; the only solution would be to demolish it and try again...

If we want a good deception, the blocks must have the same size of the passage, with a gap less than a centimeter; the risk of a block stuck inside by any small dent must be avoided.

The Hemiunu's system, however, might accommodate any late settling but keeping its width, twisting like a snake, while the block is being pushed from behind.

The sand on the flanks shall absorb any small lateral displacements, while the thin elastic sheath inside the joints would facilitate the torsional type.

I find this method absolutely brilliant. Personally, I would never have been able to predict in advance this kind of problem nor even have imagined a so clever solution.

The passage will be filled by inserting blocks till the Quadrivium included.

If you look carefully at a map of this part, the truth is plain to see: never, ever would the Horizontal Passage have been visible to prying eyes.

The floor of the Grand Gallery had to be completed with three additional blocks and connected to the Ascending Corridor without any noticeable interruption.

This explains the step at the bottom of the Grand Gallery: after the passage and the landing have been filled by shaped blocks ad hoc, on the top, along the slope, three blocks had to be installed, each 4 cubits long, twice the length of the step, blending perfectly with the rest of the floor.

Also the lateral niche had to be concealed: a tailored block, inserted from the side and jammed into it, would restore the continuity of the sidewalk (photo sequence **G20...G33**).

This "patching" work would be hidden by a new pavement stretch. It seems that Caviglia confirmed the remains of this stone on site.

Now yes, the descent of the entire block convoy, parked in the Grand Gallery, becomes plausible! The girder bridge was really impractical for this purpose.

It is unthinkable that any confidence should be placed in the stability of a so vulnerable device as the wooden bridge.

Hemiunu certainly had something better in mind.

I hope you will forgive me the necessary pause for effect. Now many other things can be explained, even the most obvious of all, I have so far remained silent.

One of the first things I did at the beginning, when I despaired in front of the first serious difficulties, was to measure the section length affected by the 25 blocks and compare it to the Ascending Corridor length, starting backwards from the bottleneck: the whole convoy would have been longer than the Ascending Corridor: the last three would still remain inside the Grand Gallery and the top one would be just above the step hidden by the third stone of the new flooring.

An extraordinary deception: to find the Passage, it would be necessary to dig in the Grand Gallery under the top granite block and then turn immediately to the south...

An excavation carried out elsewhere, even a vertical one, would simply have crossed the passage as a part of the pyramid body.

Even through the Service Shaft, bypassing the four granite blocks filling its vertical section, it would end to the right side of a large sealing block...

At the same time the three blocks would cover the floor and any side traces of the ten niches for installing the bridge beams, thus avoiding any interest to unusual details that may lead to further investigations (photo **G33**).

In the theoretical project, the closure of the pyramid would require many more operations than those discussed thus far (?...!), but I would point out what set out above is consistent with all the details.