

## XXII

### The "Mouth"

And now, as is said, the proof of the pudding is in the eating.

It is since the beginning of this book I delay the explanation of this part; I am sure anyone reading this far, will be curious to see how I will ward off the last hit, the most deadly one: the bottleneck keeping the first of three blocks in position, preventing it from falling into the corridor below.

This detail actually creates other problems.

As is obvious, in fact, if the blocks cannot fall through to the bottleneck, *a fortiori* they cannot even go up and this also applies to the sarcophagus, which transit, I have repeatedly assured, did indeed occur.

In fact, given this is 97.5cm wide (97.8cm according to other authors), it could never have passed through here, albeit by the difference of a few millimeters, the passage being limited to 97cm ...

It is precisely for this reason that experts claim that the sarcophagus was placed inside the King's Chamber when it was still devoid of its ceiling.

I intentionally left the description of this part for last; artfully creating a kind of "suspense" and a serious responsibility to me if my explanation, at this point, had to be unconvincing.

I would have discredited my work and myself totally.

I had already made a description of this part, but reading it again I found it even more indigestible than usual. Then I'll start again from the beginning, intending to refer to a model of which I hope I can add photos.

Since it was now 2008 and the book, as I have said, was a long time languishing in my computer, I decided to build in my house other models in addition to the one of the Antechamber of the Portcullises.

In particular, almost ended the wooden replica of the Grand Gallery, already built few years ago by my colleague Saraò (stone made, really wonderful).

Returning to the bottleneck: if I call it the "mouth," that is because obviously I think it may have been open, or at least, open at the time, only to be closed along with the pyramid.

Strangely, the explanation of its operation is absolutely in full view. I really cannot understand why no one has noticed it before.

If we look closely at the first of three granite blocks looking from the corridor below, we see that it is held in place by the action of two stones, both emerging from the ceiling, one high and one low.

The high one, called "A" by me (blocks A and B in fig. **M01**), is the one already described, which is responsible for holding block in strangling embrace from the side.

The lower one (B) instead, supports it from below but does not participate in the embrace, apparently limited to cooperating with the presence of two lateral growths that from below help to retain the block.

I have no doubt about the functioning of the upper stone: I shall describe it in brief, and I am sure it will be convincing to everyone. I find more difficult to "read" the bottom stone. An unfortunate recent restoration has melded (chalked and not cemented, I hope) all existing joints between the blocks in this area. My despair knows no bounds: how anyone could authorize vandalism like this is inconceivable to me.

Let us return to the upper block.

We need at least a good plan (pending the model): the Ascending Corridor has a slope of  $26.5^\circ$  like the Descending Corridor.

Above the intersection we will then have a large obtuse angle equal to  $127^\circ$ .

If now we draw a line perpendicular to the ceiling of the corridor below intersecting the Ascending Corridor, we observe that it will be formed at an angle of  $37^\circ$  (still photo **M01**).

I am convinced that the great block, I called "A" (length at least 6c, I think, thickness 4c, height 2c), which in the ceiling spans the block flanks, was originally stored within a niche (which depth was of at least 10c) oriented according to the angle of  $37^\circ$ , therefore perpendicular to the ceiling of the Descending Corridor.

Staying raised, in the standby position into its niche, it would leave a clear space beneath it at least four cubits long, a suitable passage to allow the ascent of the sarcophagus and blocks.

At the appropriate time the stone was lowered until it rested on the sides of the corridor below, waiting for the block convoy.

Lowering the stone an empty space will be created behind the stone "A" (see the yellow square in fig. **M02**).

The kind of embrace, by which the stone "A" holds in place the great granite plug, needs a complex processing of that stone. It will be shaped like a "U" upside down,

as it is, but not enough. The block will go through diagonally, so a particular shape of this stone is required.

The ability of Hemiunu, relative to his time, beyond the limits of the human: knowing how to design a joint of similar complexity, seeing it through the eyes of the mind, is something astounding.

Nowadays a decent designer could solve the problem with a simple orthogonal projection.

He would discover in this way what I have seen and every visitor may see: to get a good result, it is necessary the two vertical sides of the upside down U gorge were not parallel, but slightly converging in two dimensions, narrowing down and towards the north (photos **M03** and **M04**), so it ends up out beyond the walls of the lower corridor, as it really is.

If you look, with this new awareness, at photos **M05** and **M06**, it is possible to recognize, on the left side, about 30cm above the yellow handrail, the stone coming out the wall. Obviously, the same shape is present, symmetrically, on the other side (photos **M07** and **M08**).

I no doubt the truth of this explanation and the orthogonal projection of these details is perfect according to the measurements of the two lateral outgrowths (7-8cm per side, about 1p). The funniest thing is that the hands of generations of scholars and tourists have touched these two protrusions to the point as to form two dark patches, without ever realizing to be so close to the solution of an age-old mystery.

I have absolutely no doubt about the shape and the purpose of this stone.

If the clumsy restoration described above had not been done, I am convinced that, even now, it would be possible to roll back the device without causing any damage to it.

Due to the fact that between the first granite plug and the next two there is still a small gap of few inches, it might push back the first block to release himself from the side. Keeping it in a safe position, it would be possible gently push upward the stone embedded in the ceiling and see it go back into the cavity from which it has descended 4,500 years ago.

I imagine this intervention will never be realized (very understandable), but a confirmation of this could be possible working from the other side, precisely where the tourists enter to the Ascending Corridor. Maybe a GPR or an acoustic survey may reveal the presence of that cavity, or a modest hole made in the Ascending Corridor ceiling close to the three blocks, targeted intervention that does not

damage anything, since there has already been dug the whole passage for the tourists...

One more detail, though not very important: I've got to say that, since the sarcophagus and the statue passed from here, a little "modification" of the corridor ceiling by a rounding of the upper edge had become necessary.

Looking closely you can see how this work is also affecting the stone A, so done after its descent.

After the three granite blocks went up and before to put into operation the sealing device, the "mouth" was lowered from its niche, creating a step that would have prevented the insertion of the covering stone to hide the passage later...

About the B-stone I rather doubt, since it is impossible to understand the correct joining of the parts.

I considered at least three different hypotheses but, in the absence of any evidence, I will just show you what I believe to be the most likely.

When the first of the three granite blocks has come so far, going down slowly due to hydraulic device I have described, it has not been stopped by the bottleneck only, but also some additional latches, including two small stones inserted in the two prismatic side pockets (photo **N64**), now empty.

I think that someone (probably Al Mamun) has demolished the two stones with a sledgehammer marking in this way, even the sides of the great monolith (the pictures speak for themselves). Now if we observe the lower horizontal edge of the cap-block, we note that both its ends are supported on two growths belonging to B-stone, the one we are dealing with.

Although these two supports have collaborated in the correct positioning of the cap-block by working together with the two disappeared side stones, but I wonder if they are really belonging to the B-stone.

Looking closely, as far as I can see from the photos, it seems instead that the recent joint sealing, hopefully made by chalk, run all around the two supports by describing their perimeter, shaped like two M uppercase letters, so each edge-end of the block is housed right inside the M-saddle.

My idea is the following: the underlying stone is flat and not protruding inside of the corridor, just supporting the monolith.

The two M-shaped stones were inserted in two lateral niches thus creating two additional supports for the first monolith (fig. **M02** in yellow).

The four stop points will be obtained by inserting a pair of rectangular stones inside the two lateral cavities previously described and, at the bottom, the M-

shaped stones inserted in the already pre-existing spaces as a consequence of the fact that the stone below the granite block is shorter than the ceiling width of the Descending Corridor.

One more detail: the "U" shaped stone, during its descent, due to the clearance between the adjacent parts, could rest on the stone below by tilting slightly downward.

The two "M" shaped stones fulfills a dual purpose: forcing the "mouth" to be well approached with the adjacent stones and, at the same time, create two additional stop points for the sealing cap-block.

Since everything worked perfectly, it is possible that who carried out the plans had the detail missed and supposed the two M-stones as a part of the lower one, cause small damages seems to have the original size shortened.

Regard to this I enclose the sequence of photos. (M09...M12).

It would seem all right. My explanation works and I am acquitted for lack of clarity about the second stone from the negligence of those who carried out the restoration. I could be satisfied, but instead there's something that still bothers me and I think that is hidden under the plaster cover.

If we imagine all the stones arranged exactly as I said, the second one (B), just supporting the cap-block, it should also be the starting point of the journey up to the top of the blocks, as well as the sarcophagus and statue.

Any of these, down from the entrance, reaching the intersection, must somehow be overturned in order to continue on its journey uphill.

I had thought a special stone to be installed into the lower corridor suitable to carry out the overturning, but one more thing worries me: in order to pull the block uphill, a tow-stone, already described elsewhere, embracing it from behind had to be used, so in the B-stone should be present the groove, at least a palm (7.5cm) deep, necessary for the pulling ropes. Unfortunately, just there the stone is badly damaged and worse restored as I said...

Then I'll have to keep my doubts, even though, as I said, I would have to propose other hypotheses.

Alternatively, the stone "B", being of modest size, might be inserted later, just before the closing of the "mouth", so it could not have the carved groove the next one has.

In this case, the closing process would begin by first inserting the stone "B" resting on the sidewalls of the lower corridor, then the two "M" stones in the side cavities and last, from its niche, the stone "A", completing the "mouth".

In the model that I built I referred to this option, so it can be seen that the floor groove starts higher than the highlighted stone "B" (photos **M13** and **M14**.)

One more way: the stone "B" has been placed in position before bringing down the stone "A" but, in this case, the two "M" stones would be a part of a stone "B" edge to create a wider stop point for the granite cap-block.

I would recall that, at the "trial passages", in the corresponding part, there is an elevation of the floor such as to replicate a step.

The measurements in the plan are consistent about, so it would be possible to bring down the stone "B" and then place it in position after it has been rotated. Too bad, as I said, the recent restoration, which definitely concealed any discontinuities along the edges of the two "M" stones.

However, there are black and white photos from which it is possible to deduce how long someone has struck with a bat the block-cap in the vicinity of the two side pockets and along its lower edge.

It seems someone wanted to remove the obstacles, which apparently prevented the block to fall down. This is consistent with the third hypothesis (photo **N64**).

Again: Pochan (I think in the Napoleonic era) wrote about three steps, carved into the floor below the intersection, but the old restorations, as well as the modern plank, might have them removed or hidden.

The plans show a space enough to perform the required rotation however, an enlargement might have been necessary, so the steps, now disappeared, in the floor just below the intersection. I enclose here a sequence of photos taken to my recent model (photos **M15** to **M32**).

I hope it may help to better understand the whole procedure described above.

About these photos, you can see that the pictures **M31** and **M32** have been slightly retouched at the left just to hide the joints that allow the model to open, conspicuously absent in reality.