



## **Six Letters from Hemienu**

Posted by: Shemsu Sesen (Keith Payne) – July 2010

### **Letter 1: The Selection of the Building Site**

From the Greatest of the Five of the House of Thoth, Chief Justice, Grand Vizier and Overseer of All the King's Works, Hemienu, Holder of the King's Seal, to the administrators, nomarchs and controllers of the Two Lands, Life, Prosperity, Health!

All of Upper and Lower Egypt Rejoice! A place has been chosen for the pyramid—to be called *Khufu on the Horizon*—and temples of our pharaoh, Khufu, May He Live! May He Prosper! May He Be Healthy!

Many of you have travelled with me the length of the Nile and have surveyed numerous sites, providing good counsel. Many days and nights have we held court on the land and on my barge, and many passionate cases have been tendered. Your service to our king will be remembered by all people, for all time.

I have decided against Saqqara and Dashur and have chosen instead the site in the north, at Rostau. My reasons for this are several. First, there is a vast quantity of good yellow limestone from which to build the inner structures of the pyramid and temples. Second, there is a gentle slope which begins in the low area, suitable for a quay, and which connects the best location for the main quarry to the top of the plateau. A donkey released at the summit will follow this same natural ramp down to an easy path to the Nile. Donkeys have uncanny judgment in these matters and we should heed his guidance.

Of equal consideration are the plateau's qualities of expanse and orientation. It is an elevated plane with room enough for at least three, possibly more, large pyramids and numerous precincts for necropolises. Its elevation and orientation would make these monuments visible from Saqqara and Dashur and provide a desirable view when approached from the capital at Memphis. In particular, I have decided upon the site that we identified as the lesser quarry, on the northeast extreme of the plateau. This location is not the highest, but I have good reasons for my choice.

By constructing the first pyramid at the northeast corner, the natural ramp provided by the slope is left open to allow future building higher up on the plateau. Building on the highest point first would block access to the northeast corner. To make the best use of the space, the plateau should be developed in the northeast first, with successive pharaohs building their pyramids along a southwest trajectory. This will assure that the natural ramp remains open to future construction on the summit.

Building the pyramid actually *inside* the lesser quarry is advantageous in other ways as well, not the least of which is [100 acres] set of suitable limestone that needn't be transported once cut. Another advantage is the lay of the land, which slopes upward to the west. When the corners of the site are surveyed and the outline of the pyramid is leveled, the elevated section inside the perimeter will be left intact. By shaping this hill to fit within the construction, one tenth of the pyramid's core will already be complete.

The main quarry at the bottom of the slope holds [ $\frac{3}{4}$  mile long and  $\frac{1}{4}$  mile wide] set of limestone, which together with the on-site quarry will provide more than enough blocks to construct the greatest pyramid complex ever built. *Khufu on the Horizon* will be greater even than *Snefru is Shining*. All of Upper and Lower Egypt will unite for our pharaoh, Son of Re, Protected of Khnum, Khufu, May He Live! May He Prosper! May He Be Healthy!

## **Letter 2: Expedition to the Sinai Copper Mines**

To Iahbty-Semyt [Eastern Desert], Administrator of the Eastern Desert, and to Biah-Ahky [Copper Miner], Overseer of the Expedition to Sinai, Peace upon your goings!

There can be no doubt, *Khufu on the Horizon* is the greatest project ever undertaken by the people of Egypt, but this great work will require more resources than we have on hand. There is enough copper for chisels and other tools to begin operations, but as work picks up we will need much more than we have now. By way of investment, I have apportioned such supplies as you will need to lead a mining expedition to the Sinai.

Copper picks, saws, and drilling tubes have been made available, along with the powdered quartzite needed to make the drills and saws cut. I call this an investment because these resources are in need all throughout Egypt as the great work begins. In return the pharaoh will need [250 tons] deben of processed copper over the course of your operations. Your work will be hard, but your afterlife will hold every luxury.

To avoid the transport of unnecessary waste materials, all smelting will take place at the mines. You will be provided with mud brick to build the kilns and dolerite pounders for crushing the ore. Moulds will be provided for pouring the copper into 500 deben (13.5 kg) ingots. Arrangements have been made for the regular delivery of wood to fire the kilns, which same parties will return with the finished ingots.

The number of donkeys and carts, baskets, and other equipment required has been left to your expert discretion, you need only inform the Overseer of Provisions of your needs. A company of soldiers will be attached to your expedition to protect you in your journey, and will remain with you throughout operations to defend against the wild people of the desert.

Your route will take you across the Eastern Desert to the port at Sewew, where transportation across the Red Sea to the port at Markha has been arranged. From Markha you will continue on donkey to the mines at Wadi Maghara, where the greenest veins of ore—the easiest to smelt—are to be found. If in the course of your work turquoise is discovered and may be extracted with ease, please do so, but not at the expense of mining the ore.

It is your task to select fifty of your best miners, no slaves or prisoners, for this expedition. In addition, twenty-five quarry workers will accompany you as far as Sewew, where they shall remain to gather dolerite, which is abundant in that land and is needed for the granite quarry at Aswan. It is imperative that

you depart as soon as your equipment, supplies, and provisions may be gathered. The quarries at Rostau and Tura require more copper as soon as you can deliver it. May Isis watch over you.

### **Letter 3: The Recruitment of the Unskilled and Semi-Skilled Labor Force**

To Ahwet-Tepey [Chief of the Flock], Administrator of the Corvée, Life and Peace!

An important task is given you, for you are my eyes and voice throughout the Two Lands. You are to send recruiters to every nome, from Theb-Ka in the Delta to Ta-Seti at Elephantine. These recruiters will identify those men whose privilege will be to pay their bak debt working to raise *Khufu on the Horizon* from the Plateau of Rostau. All the strongest men of the realm are summoned to pit their endurance and athleticism against one another for the glory of the king and the honor of their towns and families!

These recruiters will arrange the schedule of rotation and provide the men with their work assignments. Men will be needed for the quarries at Aswan and Tura, as well as the main quarry at Rostau and the lesser quarry where the pyramid will be raised. Men will also be needed to provide supporting services to the great work, both at home and in the quarries.

There will jobs for hearty men of few skills who will work under direct supervision. For these jobs select young men who are stout of body and spirited in nature. These men they will be working in teams with others from their families and villages, competing in their labor with men from all over Egypt for glory and honor. Tell these men they will travel, gain experience and character, and will come to be all they are capable of being. And they will eat better every day in service to the king than they do on festival days at home!

When selecting these men bear in mind the sort of labor they will be doing. Their backs will move the levers that free the blocks in the quarries, pull the laden sleds, and load, unload, and arrange the great blocks of *Khufu on the Horizon*. Their arms will clear the debris and bust rocks for filler material. They will crush gypsum and pour mortar. Their legs will carry water for the work, wood for the fires, and tools to and from the sharpeners and the stoncutters. They will work in quarries, on docks, and on the pyramid itself.

Of course, some men will need to remain behind on their farms to do their part for *Khufu on the Horizon*. These men will till the earth, fish the Nile, and tend their flocks and herds as they have always done. Their bak debt will be paid on hooves and in barrels and grain sacks. Cattle and goats, and the drovers to deliver them. Fish and fowl. Emmer and Barley, garlic and leeks. Onions, radishes, cucumbers, dates, honey, and figs. Salt and herbs. All for the glory of Egypt, all for the glory of the Pharaoh, all for the sake of Ma'at!

Your recruiters must also seek men with useful talents or the ability to learn quickly. Unlike the unskilled men, who will be constantly told *come here* and *go there*, these men will have regular assignments such as positioning levers, rough shaping stone, and sharpening tools. They will operate machines which have been designed to lift and turn the laden sleds. They will cook the meals in the barracks and assist the bakers and brewers.

These are coveted positions to which they will return for their season of bak labor year after year, with prospects for advancement. They are opportunities to learn a trade, and a clever man may find himself apprenticed to a master. For this reason your recruiters should know that bribes and nepotism will not be

tolerated. Any man who corrupts this great work will find himself and his family made destitute, his lands seized, and his place in the afterlife forfeit.

Your men need not worry about skilled artisans and craftsmen, as these will be recruited by their nomarchs and overseers. Your recruiters need only concern themselves with mobilizing the main body of the corvée to the pharaoh's service. Arrange rotations, send the right men where they are needed most, and coordinate with the Royal Treasury and the Overseer of Provisions to assure that the granaries and storehouses remain stocked.

It is important for your men to work with haste, but of especial importance that those who will be recruiting from Lower Egypt, particularly the nomes of Khensu, Ka-Khem, Heq-At, and lower Aneb-Hetch—those nomes closest to Rostau—immediately send workers to the plateau to begin construction of the city where the permanent residents and rotating labor force both will dwell. This city will grow over time, but even in Year 1 there will be need for barracks, granaries, bakeries, breweries, and other facilities necessary to support the great work.

I wish you peace! May you live, prosper, and be healthy!

#### **Letter 4: Recruitment of the Skilled Labor Force**

To the Nomarchs and Overseers of Upper and Lower Egypt—Life, Prosperity, and Health!

Let word go out to all nomes and territories—men and women of wisdom and ability, your skills are required at the site and in the quarries of *Khufu on the Horizon!*

To the nomarchs, send proclamations to all corners of your domain advising that Pharaoh Khufu (May He Live! May He Prosper! May He be Healthy!) requires the immediate services of potters, weavers, metallurgists and smiths, woodworkers, carpenters, drovers, millers, butchers, bakers, and brewers. Come to Rostau to serve your bak debt. If you chose to remain, opportunities abound for you to make your fortunes, and those of your sons and daughters. There will be commerce and industry the year round.

To Sha-Asha [Commander of Many], the Overseer of Craftsmen, there is immediate need at Rostau for journeymen of all professions—mudbrick makers, thatchers, carpenters, wood workers, potters, smiths, rope makers and weavers. A worker's city is to be constructed straight away—barracks, administrative buildings, granaries, bakeries, breweries, work yards, smithies, and foundries. The unskilled labor are being gathered and transported to the site as you read this.

To Henem-Meha [United With the Cubit], Overseer of the King's Quarries and Inspector of Masons, there is need at Rostau to build containment walls for the workers' city, to construct a quay at the foot of the plateau, and to dig a four mile long channel to connect the quay to the Nile. The access road from the quay to the northeast quarry, the site of the pyramid, must be paved.

In addition, operations are to commence at the quarry at Tura, eight miles upstream from Rostau, from which the fine white limestone for the pyramid and temple facings will be cut and dressed. Work is also to begin at the granite quarry at Aswan.

There is need in all places for surveyors, stone cutters, breakers and ledgemen, masons, dredgers, drillers, pounders, and grinders. Your teams will be provided with related specialists, such as carpenters and smiths, as they require. The unskilled and semi-skilled help are being dispatched.

To Qai-Sesh [High Scribe], Magistrate, Overseer of the Scribes, and Overseer of the Priests of Re, to you I bid Life, Prosperity, and Health! In all work centers, but especially at Rostau, there is need of architects and master surveyors, engineers, overseers of labor, priests to advise and bless construction and to sanctify grounds, astrologers, lawyers, physicians and herbalists, counters and inspectors, logisticians, provisioners, and scribes of all varieties.

With all haste let word go out! As the Nile rises in Akhet, let all Egypt rise to the great work of *Khufu on the Horizon!* As the crops emerge in Peret, let the wise and skilled of Upper and Lower Egypt emerge and come forth to the pharaoh's service! As grain is harvested in Shemu, nomarchs and overseers: gather the bounty of Egypt's craftsmen, artisans, and experts in all things!

### **Letter Five: to the quarry at Tura**

To Iner-Sedjenajeninmer [Friend of Limestone], Quarry Master and Overseer of the Expedition at Tura, Long Life!

Soon the professional craftsmen, semi-skilled workmen, and main force of no less than 500 men will begin arriving at Tura for the commencement of work. The luminous white limestone of Tura shines in the sun like the surface of the Nile, unlike the dull and course yellow limestone of Rostau. For this reason the Tura limestone will be the finished outer facing of *Khufu on the Horizon*, as well as the mortuary and valley temples, ka and queens' pyramids, and the finished causeway. All of Khufu's (Life! Prosperity! Health!) pyramid complex will shine like a diadem on the brow of Isis!

But those who say take leisure, that the outer casing stones will not be needed until the core is erected, are in serious error and know nothing of what my father Snefru (May He Have Life in the East!) achieved. *If the outer surface of a smooth-sided pyramid is not laid first, the corners will not meet at the top.* Small errors at the beginning grow to colossal failures in the end. The angle and its maintenance are determined by the surface, not the core. For these reasons, the limestone of Tura will be needed before the first course of *Khufu on the Horizon* can be laid.

This need is compounded by the qualities of the limestone of Tura. The limestone you will be working with is soft when it is first quarried and cuts easily in straight lines. This makes extraction, precise shaping, and polishing very easy. But as soon as the surfaces are exposed to the air they begin to calcify and form a hard shell. This increases their durability, but means that all shaping and polishing must be completed at the quarry before they are ever shipped. This means, of course, that some blocks will sustain damage in transport, but these can be easily patched and mortared.

Dressing the blocks will require a high degree of exactitude. To finish the stone before the surface hardens the workers will need to move fast. You will be provided with enough copper to assure that as each chisel dulls there will be another to replace it. Runners will be in constant motion, carrying away dulled tools and returning with sharpened ones. Each tool will have to be reheated to be sharpened, so other runner will keep the fire of the smithies stoked. Coordination of your workforce will be essential.

As the blocks are cut, they must each be lined up side by side exactly as they will be installed on the pyramid. Once the face is cut to a perfect angle of 14/11 seked, the angle of the pyramid, it must be

polished with quartzite powder. To assure an ideal fit, a toothless copper saw with quartzite grit will need to be passed between each block to perfect their sides to their one another.

Each block will be numbered to ensure that it is placed correctly when installed. By installing the outer layer of Tura limestone first, the surveyors and architects will be able to observe that all the angles are correct, which if your work is exact, they will be. With the facing stones in place, a [20 meter] cubits-thick supporting layer of well calibrated Rostau limestone will be erected. The internal ramp will be built into this sturdy layer. The rough core filling, as well as all chambers, passageways, and some machinery necessary for construction, will be contained behind the support layer.

Course by course, this is how *Khufu on the Horizon* will come into being. Iner-Sedjenajeninmer, you have been chosen to oversee the work at Tura because of your qualifications, and the pharaoh is counting on you. As you cut, shape, and perfect each numbered course of blocks, you will be essentially building the pyramid first at Tura and then shipping it to Rostau. The rest of the pyramid will be built within what you provide. It is imperative that you know this. Great will be your reward, and you will dwell with the pharaoh forever. Friend of the King, go in peace!

## **Letter Six: To the quarry at Aswan**

To Emratab-Neb [Master of Granite], Quarry Master and Overseer of the Expedition to Aswan, Prosperity!

A workforce of no less than 500 men, including quarry workers, supportive staff, and all manner of experts has been dispatched to Aswan. Although we will not have need for granite until Year 12, work must begin immediately. The qualities of the stone and the logistics required to deliver it to Rostau will make your work slow and tedious and even more reliant on the seasons than other quarry work. Rest assured, all of these difficulties have been resolved, but your mastery and patience will be demanded in equal measure. The pharaoh asks much of you, and great will be the glory.

The granite you will be quarrying is too hard for chisels, so expect a minimum of copper to be rationed to your operation. Instead you will be receiving large quantities of dolerite, which is harder than the granite of Aswan. Wooden wedges driven into natural cracks and those opened with dolerite mallets can be soaked with water, causing them to expand and free the stone. Once extracted, the granite can be shaped into great beams with dolerite pounders.

Dolerite is being collected by a mission sent to Sewew for that purpose, and culled from the Faiyum region where it is also plentiful. Additionally, teams have been sent forth to the cataracts, where the Nile gives up dolerite shaped into spheres. These special pounders will allow your most expert stone cutters to shape the hard granite into the specific forms required.

These great beams will weigh up than 60 tons, some of them considerably more. They will be used to protect vulnerable chambers within the pyramid, to bear and direct the pressure of incredible amounts of weight, and to span wide reaches with minimal support, where limestone would crack under its own mass. They will likewise be used for structural purposes in the temples connected to *Khufu on the Horizon*.

More than 3,500 tons of granite will need to be quarried, shaped, and shipped from Aswan for this great work, more than has been used in the entirety of Egypt's past. The beams will make the twenty-day journey down the Nile on mighty barges. An expedition has been sent to Lebanon to acquire cedar for the manufacture of these barges, and the Overseer of Shipwrights and Chandlers, who has already begun work on the lesser barges for the Tura limestone, has the plans for these vessels at the ready.

Along with the other experts being sent to Aswan, you will receive a team of dredgers who will oversee the digging of trenches in the flood lands during the season of Shemu, when the plains are dry. These trenches will be deep enough to hold the barges so that their decks are level with the land. As granite beams are completed they will be loaded onto great sleds, wood for which is also being procured from Lebanon, and these sleds will be towed onto the barges and left there. When the plains flood in the season of Akhet, the barges will be lifted by the Nile and carried to Rostau on the rapid currents of the inundation.

As you can see, you will need every day of the following twelve years to maintain the schedule required by the construction. The quarrying will be slow, and the dressing of the stone many times more so. Beams should be shipped in the Akhet immediately following their completion, to be stored on site at Rostau.

If you understand this project correctly, then you know that the center of all this effort is the 10 by 20 cubits chamber in which the king's body will rest. Everything else, from the bottom of the causeway to the tip of pyramidion, is there to physically and spiritually support that sacred space. The granite beams you will be sending to the plateau are what make this sacred space possible. Without them, the great work will fail. You labor for the king, for Ma'at, and for the glory of all Egypt.

Works referenced and indirectly cited will be included in the final draft.

