

Civilization 240

Chapter 240 - One Hundred Thirty-Five: The Blue Bricks and Glass_2

"Then, this soil needs to be mixed with water, kneaded repeatedly, at least five times. This step is crucial! Whether the bricks will be solid or not depends on how well this step is done!"

Having said this, Tanali walked among the hundreds of laborers mixing the clay, waving her hands forcefully.

"Get to work, all of you! Is His Highness someone you can just stare at? Today, I want you to knead the clay seven times!"

The laborers, speechless, obediently bowed their heads and continued their work. Xiulote also nodded slightly; under Tanali's management, the laborers worked like well-directed limbs, organized and orderly.

"Next, sprinkle a layer of fine sand on the ground, then pack the soil into wooden molds to form the bricks. The bricks taken out must be dried in the shade to prevent cracking."

As she spoke, Tanali slapped a wooden shed vigorously. The thatch on the shed shook and fell down among the stacks of bricks on the ground.

"After more than a month, when the bricks have dried, they must be fired. Start with a strong fire for five or six days, then slow it down to a low fire. It takes about ten or more days in total; once every brick turns thoroughly red, you can slowly extinguish the fire. Then, they come out as beautiful and solid red bricks!"

At this moment, the head potter walked to a kiln that had already cooled, pointing forward. The youth looked carefully; busy laborers were extracting vibrant red bricks.

Xiulote looked slightly puzzled and turned to Tanali.

"Tanali, you have done well. However, I have seen blue bricks at the pyramid in the Holy City, which seem even more durable and robust."

Tanali pondered deeply for a moment before responding.

"Your Highness, the ancient temples were built with blue bricks, but the specific technique has been lost. I have tried several times and during the fire extinguishing, I sealed off the kiln, resulting in bricks that were a mix of blue and red, neither pretty nor much better than the red bricks."

Xiulote thought for a while. The red in bricks is due to a high-priced iron oxide, while the blue comes from a low-priced iron oxide. Blue bricks are essentially well-fired red bricks that undergo oxygen reduction to change color. To achieve this reduction, one must isolate oxygen. Sealing the kiln isolates some oxygen, hence the blue-red color; complete sealing would mean... perhaps pouring water on it... Water, upon heating, turns to steam, creating high internal pressure that naturally keeps the oxygen out.

Tanali watched His Highness, hmm, such a delicate youth, his contemplative expression resembled a beautiful hummingbird.

After a while, Xiulote's eyes brightened, and he smiled confidently.

"Tanali, when the bricks cool down after firing, first seal the air holes at the top of the kiln with clay, then build a water pool on top with soil and add water. Let the steam slowly seep into the kiln. After steaming it for a few days, let's see, those will be the blue bricks!"

Upon hearing this, Tanali looked doubtfully at His Highness.

"Your Highness, why add water during brick firing?"

Xiulote was momentarily at a loss for words. After thinking for a while, he replied.

"Firing bricks harnesses the power of the Fire God, transforming soil into stone. Adding water uses the power of the Rain Divine, preserving the bricks against weathering."

Moved by his words, Tanali saw the truth in the priest's tradition. She bowed deeply out of respect and prepared to attempt it.

Xiulote then thought again. Scaling up the brick kilns is a direction for improvement, but it requires increased charcoal production; the heat generated from burning at the bottom must keep up. In his memory, villages in later ages seemed to fire internally heated bricks by incorporating coal mud into the brick molds, firing from the inside out. If history had left this technical solution behind, it must have been tested through various real-world applications. The youth spoke again.

"Tanali, go and fetch some powdered charcoal from the place where it is made and try uniformly mixing it into the brick molds before firing again to see how it turns out."

Tanali thought for a moment, then looked up seriously.

"Your Highness, by adding charcoal, are we perhaps invoking the power of the God of Flora?"

Seeing the solemn expressions of both the head potter and the surrounding samurai, Xiulote opened his mouth to speak but could only nod solemnly.

Afterward, the youth looked at the wooden molds engraved with various patterns. These molds were used to press designs into the bricks, with the most common being the Feathered Serpent and the sun. Bricks specially prepared for the nobility were lavish, depicting various family emblems, symbolizing divine protection.

Having completed his inspection, Xiulote and the respectfully bowing Tanali parted ways. Then, the youth looked up, saw the sun slightly westward, still with plenty of time. He headed to the head stonemason Losano's glass workshop, located near the latest noble's mansion.

The so-called glass workshop currently consisted of several large earth kilns, sets of obsidian processing tools, a master stonemason, and a dozen stonemason apprentices.

Losano sat on the ground, cradling his legs with a furrowed brow, staring at the large pile of milky white quartz sand in front of him, at a loss. His stature was tall and muscular, his pose of embracing his legs reminiscent of a hibernating giant bear.

The master stonemason frowned in deep thought. Ever since some noble forcibly recruited him to the High Priest's Mansion, he had had to abandon the production of profitable obsidian tools in favor of researching something called "glass," an unfamiliar term he had never heard before. According to the noble's instructions, he found this hard, milky white sand near the Lake Region, along with large chunks of hard, scratch-proof stone. This stuff was plentiful in the mountains to the east, especially near the volcano. He had each apprentice haul a bag back to the workshop. Then, when it came time to fire it as instructed by the noble, problems arose.

"This stuff just won't melt! Is His Highness dreaming?!" Losano groaned while clutching his head loudly, his apprentices trembling quietly in a corner, not daring to make a sound.