

Year One
Science Reader

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THE FAITHFULNESS OF THE NILE

Chapter 1: The Arrival of Hapi

It was hot and dry. For months there had been no rain, and ever-so-slowly the great Nile River had begun to dry up. The ground was thirsty, and each day the farmers of Egypt looked anxiously at the sad condition of the river. Then they looked to the left and right—on each side of the river desert sands stretched as far as the eye could see. To the Egyptians, the Nile was more than just a river. It was their source of life.

“Don’t lose faith,” an old farmer said, putting his arm around his grandson. The boy’s name was Khunanup. “In all my years,” the grandfather continued, “Hapi has never once abandoned us completely. Although, sometimes he can be a bit unpredictable.”

Hapi was the name of the yearly flooding of the Nile River, which the ancient Egyptians worshiped as a god. In their hieroglyphs, they painted Hapi as a blue man with a big belly, a sagging chest, and a fake beard.

Now, all of a sudden, Khunanup and his grandfather heard a shout go up among the farmers: “Hapi is coming! Hapi is coming!” They whooped with joy and smiled from ear to ear. Khunanup ran to the banks of the river to see Hapi for himself, but instead of a big blue man, he saw something very different—the waters of the Nile were beginning to rise. The flood was on the way. There would be crops and food that year. Because Hapi had arrived, there would be a celebration that very night!

This made Khunanup very happy indeed.

Chapter 2: The Source of the Nile

Over the course of the next few months, from May to August, the Nile River continued to rise higher and higher. This was the flood season, and it was Khunanup’s favorite time of year. There were music, boatrides, thanksgiving in the temples, prayers for a good harvest, and, of course, a grand feast including roasted fish, and honey-soaked bread for dessert. Khunanup and his family were peasants, so eating meat and honey was a very special treat.

“I have a question,” Khunanup said, once he had eaten until he felt like he was about to burst. “I know that this is a festival to celebrate the arrival of Hapi, but how did Hapi get here? It hasn’t rained in months, yet the Nile River continues to grow with more and more water. Where does all that water come from?”

For a moment there was silence as each person considered the question. Then, three different people spoke up, each with a different answer:

The first to answer was a man named Asim. “The flood,” he said, “is caused by the tears of the goddess Isis, who is crying over the death of her husband Osiris.”

The second to answer was a man named Sadiki. “If you want to know the true source of the Nile, you must travel upstream to the city of Aswan on the southern border of Egypt. There, you will find that the river flows out of a cave. Inside this cave is a bottomless pool of water. This is where Hapi lives, and that is where the Nile River has its beginning.”



The third to answer was a man named Khons. “You say that the river comes from down below us in the ground,” he said, “but I say that the true source of the Nile is up above us in the air.”

“The air?” exclaimed Khunanup, amazed at what he had just heard. “What do you mean?”

“I mean,” Khons replied, “that the Nile is a heaven-sent stream. And now, if you care to hear it, I will tell you its story. I got it from my grandfather, who got it from his grandfather, who got it from his second cousin twice removed, and *that* cousin was an ambassador to the Ethiopians, who told him all about it.”

Chapter 3: The Roof of Africa

Looking around the room, Khons saw that he had the attention of the entire assembly. Then he took a sip of his beer, leaned back from the eating mat with a contented sigh, and opened his mouth to speak.

“Imagine, if you will,” he said, “a place far above the sweeping grasslands, fertile river valleys, and burning deserts of Africa—up in the highlands of Ethiopia. This is a place so high above the level of the sea that it is known as the Roof of Africa. Here, the mountains are among the most beautiful in the world and many strange and wonderful creatures live up here on the very doorstep of the heavens. This is where the journey of Hapi has its true beginning.”

Now Khons lowered his voice and spoke dramatically. “Can you feel the wind blowing in from the East?” he asked. “These are the monsoon winds arriving from the Eastern Ocean and carrying with them countless quantities of water vapor. When the wind hits the mountains, the air rises, cools, and squeezes out its precious cargo of water like a giant rag. At first, tiny droplets appear, so small that they are carried along with the wind high above our heads. These are the clouds, formed of millions of droplets of floating water. As the clouds fill out, they get darker and the drops get bigger. Can you smell that air? Farmers like us would know that smell anywhere. It is the smell of the coming rain.

Cue the lightning! Cue the thunder! Our story has begun! High up in the air, higher even than the roof of Africa, a raindrop has formed and is plummeting towards the earth. That raindrop will become a part of Hapi, so it is true to say that with the raindrop, Hapi is on his way.”

Chapter 4: From Rill to Lake

“What happens next?” Everyone wanted to know. Khons paused to choose a piece of dried fruit from the platter. He tossed the morsel into his mouth and continued his story around it. (No one had ever explained to him that it is rude to talk with your mouth full.)

“The raindrop, which I shall now call Hapi, landed on the ground with a plop,” he said. “Now he had a decision to make. Where should he go next? Should he bounce back up into the sky? Should he spin around in circles? Should he perform a few of the latest dance steps? Absolutely not. That would go against the nature of water. Therefore, instead of dancing, Hapi did the only sensible thing: he began to flow downhill.

At first Hapi was very small, but soon he was joined by more water as he flowed down the hill. The water joined hands and formed a small, temporary waterway called a rill. Turning the corner at the bottom of a mountain meadow, Hapi’s rill joined up with another rill and together they formed a larger, more permanent waterway called a stream. Faster and faster they flowed, splashing against the tree trunks and dis-



lodging bits of earth along the way. At one point, Hapi looked up and saw a ladybug surfing on a piece of grass. It was so funny that he laughed out loud. If you had been there that day, you might even have heard the sound of Hapi's laughter for yourself. It sounded a bit like this: *burble burble!* Streams that make noises like this are sometimes called laughing brooks, bubbling brooks, or even babbling brooks.

Well, the next thing you know, Hapi's stream emptied into a lake. Plop plop plop! More raindrops were arriving all the time. The lake began to swell up with water. It was also full of fish. Hapi saw one with a strange nose that looked like the trunk of an elephant. Then, he noticed another with whiskers on its face like a cat. He was observing a third fish when all of a sudden it puffed up, filling its body with water until it was the size of a water balloon. It was only when Hapi turned around and looked behind him that he understood what had scared that fish! A huge Nile River crocodile cruised silently by, its eyes half-submerged in the water, scanning the lake for its next meal. It was this crocodile (clearly a Nile crocodile) that gave Hapi the clue he needed in order to figure out which lake this was. It was Lake Tana, the source of the Blue Nile. Starting here, Hapi would leave the lake and begin his nine-hundred-mile-long journey to the sea."

Chapter 5: Downhill and Underhill

Khons continued with his story. "Leaving Lake Tana," he said, "Hapi took great care to always behave according to the nature of water. He always flowed downhill, along the path of least resistance. At first, this led him down from the highlands of Ethiopia and along a winding path among pleasant green hills until, at last, he arrived at the desert. If there was one thing that Hapi didn't care for, it was the burning sands of the desert. If Hapi wasn't careful and spent too much time under the sun's hot rays, he ran the risk of evaporation—being turned into a wisp of water vapor floating through the air. Hapi didn't want that at all, and so, turning up his nose at the red sand, he hid himself underground. There, in total darkness underneath the sand, Hapi traveled for some days."

"What?!" exclaimed Khunanup. "Is it really true that water can flow underground?"

"Of course," replied Khons. "Use your head, boy—where do you think the water in your well comes from? It's called groundwater. If, for some reason, the Nile River was ever polluted and we needed more water to drink, we could always dig more wells in the ground in order to reach the groundwater. In some places, the groundwater is very easy to reach, but in others it is buried deep in the ground. This is why it's important to choose wisely where to start digging a well. Don't bother to begin one without asking me first—you'll save yourself a world of trouble." (Khons was a well-digger by trade, and he was a good one, so he liked to show off just a little.)

Khunanup's mother was also Khons's cousin. She poked him in the ribs. "Never mind your wells and your digging. Tell us the rest of the story about Hapi!"

"All right, all right," Khons grumbled, but there was a twinkle in his eye. He continued, "Hapi would have stayed underground forever if it wasn't for the gigantic slab of limestone that blocked his path and forced him back to the surface of the Earth. Too much pressure underground can do that to water, you know. It gets all backed up and has to go somewhere! Hapi found himself shooting up again into the light of day. He blinked in the sunshine and looked around at his new surroundings.



Hundreds of pairs of eyes stared back at him from the riverbank. Great numbers of wild creatures of the Ethiopian wildlands gathered here at this oasis in the desert to drink the life-giving water. Giraffes bowed their towering necks in gratitude to the river. Beside them, Wild Orynx grazed on the shrubs which grew there in abundance. Hippos splashed about in the shallows, disturbing a pair of flamingos that took flight amidst a flurry of strawberry pink feathers. Bees buzzed among the blooms of waterlilies and papyrus and Hapi found himself tickled almost to death by the little black wiggling bodies of ten thousand tadpoles. He laughed again— *burble burble!* The animals honked and whinnied and roared and cheeped and buzzed back at him. Not all of the animals were friends with each other, but they all had made a peace treaty in order to share a place at oasis. Only on rare occasion was that peace treaty broken, for example when . . . Uh oh, here came the lions!

Hapi didn't have time to watch what happened next. He was whisked on his way by the current and plunged deep into an emerald green forest, which he could see because once more he was traveling above the ground. The wonders of nature which he witnessed as he passed through that wild and unexplored land are so many and so marvelous that they could fill a whole scroll."

Chapter 6: A Digger and A Carrier

As Khunanup and the others listened, spellbound, Khons paused for another sip of beer and continued with his story.

"After many days of overland travel, Hapi began to hear a sound in the distance growing louder every minute. By the time he realized what it was, it was too late. He was about to freefall over some rocks! Hapi was part of a *Wattteerrrrffaaaaallll!* The Ethiopians traveling with him on this part of the river, which they call the First Cataract, had already parked their Papyrus boats on the shore and folded them up so they could be carried on their backs to the bottom of the waterfall. Hapi, on the other hand, performed a beautiful swan dive into the pool below. *SPLASH!* The force that he had when he hit the bottom of the river was so great that he knocked loose a piece of mud and carried it with him. *SPLISH!* The current was moving so fast that he slammed into another piece of mud and knocked it loose using the first piece like a shovel.

It sounds chaotic, but actually, this was a job that Hapi was very good at doing and it is called erosion. You see, Hapi was a digger and a carrier, and the mud that he carried was going to make for a very special gift for Egypt."

"What?!" interrupted Khunanup at last. He had been listening to the story very patiently, but now he felt that he couldn't help himself. "Are you kidding me? Hapi's gift is mud? What kind of gift is that!?"

Khons just chuckled. "Mud might not sound like a very special gift, but just ask any of the farmers gathered here and they will tell you how valuable it actually is for our crops."

Khunanup felt and looked sheepish. He had often helped his father to spread around the rich black mud, and he knew how fast it made the crops grow. Only, when Khons put it that way, it sounded so funny.

"Don't get any ideas, Khunanup," said his mother (but her black eyes twinkled). "I certainly don't think of mud as a gift when you track it into the house!"

Everybody laughed at that. Now, at last, Khons was coming to the end of his tale.



“Once Hapi passed over the first cataract, he had officially arrived in Egypt. It was just before dawn in early Summer, and up on the horizon, the brightest star in the sky could be seen for the first time all year. When this star is seen in Egypt, it is a sign that Hapi is on the move.

There was a sigh of satisfaction, and then the villagers heartily applauded Khons. He bowed, and he could not help adding . . .

Chapter 7: Irrigation

“Now, if you ask me for my opinion as the village’s best water engineer (I don’t say that about myself, but other people do), one of the most interesting things about Hapi is what happens to him when he gets into one of our Nilometers.” Khons suddenly fixed Khunanup with his slightly-bulging eyes. “Surely you’ve heard of those. Tell us, boy: what is a Nilometer?”

Khunanup had indeed heard all about the Nilometer. . . from Khons. The old well digger thought it was the most wonderful invention ever made, and he never tired of explaining it to everybody in the village. Khunanup opened his mouth and quickly recited, “The Nilometer is a special water chamber marked like a measuring tape which is used in order to measure the exact depth of Hapi’s floodwaters. Knowing how big the flood is going to be is important information for our farmers. If the water rises 16 cubits high, that means that the flood has arrived at the perfect level. If it rises to 18 cubits, that is too high and can overflow the fields and carry away houses. If the water only rises to 14 cubits, on the other hand, it isn’t enough for the crops, and all of Egypt is in danger of suffering the horrors of famine.”

The word ‘famine’ made all the villagers shudder. Khunanup shuddered too as he finished speaking. He had heard stories of terrible famines in the past. During one of them, a Hebrew slave (who became Pharaoh’s right-hand man) had helped to save Egypt by building foodbanks and filling them with grain just in time. Ever since, Egyptian farmers had learned to do everything they could to be prepared for a famine . . . just in case.

Khunanup knew that his people had invented many clever tools besides the Nilometer—they had many special tools for harvesting the Nile’s water and its gift of mud. They built canals to move the water to reach more of their crops. When they needed to move water to places higher up on the riverbank, they built corkscrew pumps and a kind of lever-system for lifting water called a shadoof. They built dams around our fields in order to trap the water in reservoirs until it had time to drop its special gift of mud. Taken altogether, the process of moving water and sediment around to the places where it could do the most good was called irrigation (as anybody who had Khons for a neighbor could tell you).

Now, the word sediment means mud which ‘settles’ to the bottom of water when it is at rest. The sediment which Hapi brought to Egypt each year, and which the farmers moved around until it spread like a layer of rich dark frosting on their fields, was full of nutritious plant food. Mud made the Egyptian barley grow tall and green, and it made their cucumbers grow fat and crunchy and their squash grow sweet and buttery. In fact, Khunanup thought dreamily, the great Egyptian civilization was only made possible because of Hapi and his faithful gift of sediment. For this reason, his country was known throughout the world as the “Gift of the Nile.”

Khons rose from his river-reed eating mat and raised his clay cup, “A toast of gratitude to Hapi! May he always be faithful!”



Everyone lifted their cups to drink. Then, up spoke a new voice from the crowd. It was Khon's wife, Pili, a grey-haired woman who worked as a midwife, helping the other women deliver their babies. "There is a story told among the Hebrews," she said, "of another gift brought by the river. Long ago, there was a baby born as a slave. One day, in order to save him from evil men, the baby's mother made a basket for him from papyrus reeds and set him in the river, which carried him safely to Pharaoh's own palace where the baby was raised as a king."

"That is amazing!" said Khunanup.

"It is," said Pili, "But instead of praising Hapi, the Hebrews praised their own God instead, for they insist that He alone is the God of the world. They even think that He created and controls the Nile! Furthermore, as they believe, floodwaters may fail, but the faithfulness of their God endures forever."

"Bah, these Hebrews are crazy," said Khons. He tipped back his cup to catch the last drops of beer.

"It's only another story," said somebody in the crowd.

Khunanup thought about all the different explanations and stories about the Nile that he had heard this evening. He wondered, somewhere deep inside himself, which one was true. He wished he knew.