

I. Dynasty 451

Chapter 451: Marine Corps

“Hahaha...”

The serious atmosphere in the government office was broken by Xiao Ming’s laughter.

After negotiating for so long, he basically solved the Ryukyu problem without bloodshed and even found a trade route to Europe.

Stopping his laughter, Xiao Ming said to Claire, “I am glad you can accept this condition. If you sincerely trade with my lordship’s territory, I guarantee your future trade in East Asia will not be harmed. On the contrary, you will gain more profit.”

“I hope so. Our goal as the Dutch is trade and profit. As long as Your Highness can guarantee this, that is enough,” Claire also said with a smile.

Nodding, Xiao Ming continued, “Since that is the case, why don’t we sign a trade agreement now to formalize our commitments?”

After saying this, he asked Yang Chengye to prepare paper and pen to write down the results of the negotiation into an agreement regulating the behavior of both sides. Claire did not object.

Then they discussed some details, and finally formed the agreement.

The agreement clearly stated:

First, the Dutch return the Ryukyu main island to the Great Yu Empire, under the lordship of the Great Yu's Qi Prince. In return, the Qi Prince guarantees the safety of the Dutch Trading Company's base at Zeeland Castle and the smoothness of the trade routes.

Second, the Dutch Trading Company and Qingzhou Chamber of Commerce jointly establish a foreign trade department in Dengzhou. From now on, all trade must be approved by this office.

Third, Zeeland Castle keeps 2,000 musketeers and four warships, and the Qi Prince's territory may station an equal number of troops there for joint control. Both sides are responsible for their own military supplies.

Fourth, when Zeeland Castle is attacked by foreign enemies, Qi territory must cooperate with the Dutch Trading Company to resist. At sea, both sides have an obligation to protect their ships from foreign piracy.

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Line by line, they wrote these terms. Soon, the paper was filled with words. After writing the agreement in Great Yu's script, Xiao Ming also wrote another copy in Dutch script. This action almost made Claire's jaw drop.

"Your Highness Qi Prince, how do you know our language?" Claire asked.

Xiao Ming said, "Then why does Rod know our Great Yu language?"

"But he only speaks, he cannot write," Claire said. Rod's past was not honorable. In fact, Rod used to be a pirate who learned Great Yu's language when he was young by following pirates from various countries.

"That is unfortunate. I learned this knowledge from a very knowledgeable missionary," Xiao Ming used this excuse to answer.

"A missionary? So you learned about the flintlock guns and cannons from him?" Claire was surprised.

Xiao Ming nodded. Since they were cooperating, he needed to give them a reason.

"This must have been a very knowledgeable missionary," Claire said with a bitter smile. He now really wanted to shoot that missionary.

Xiao Ming chuckled softly and handed the agreement to Claire. In fact, he picked up knowledge quickly, especially memorized things like languages. Since these memorized facts are stored in the technology crystal, words or even sentences pop into his mind immediately.

"Now we should sign. Once this agreement takes effect, war can be avoided," Xiao Ming said.

Claire's expression became serious. He took a deep breath and took out a quill from his pocket, signing his name on the agreement.

Ryukyu Island was developed by the Dutch Trading Company, so it was the company's property. He had the right to handle the company's assets, as long as the company's trade was not harmed.

After signing, Claire pushed the agreement to Xiao Ming and said, "Now it's your turn."

Xiao Ming took the agreement and signed his name as well. The agreement was now officially in effect. He nodded with satisfaction and said, "I wish our cooperation goes well."

Claire's expression was complicated. This agreement was a complete victory for the Qi Prince, but a humiliating defeat for them. It meant the era of Dutch dominance over East Asian trade routes had ended, just as they had lost their maritime supremacy in Europe.

"I hope Your Highness will keep the promises on this agreement. Otherwise, we Dutch will fight to the last soldier," Claire warned.

Xiao Ming looked serious and solemnly said, "I always keep my promises."

Nodding, Claire stood up and said, "In that case, we will wait for Your Highness's arrival at Zeeland Castle."

“Alright.”

Xiao Ming originally wanted Claire to stay for a meal, but considering Claire’s humiliating mood, he let it go. After all, even losers have their dignity.

After seeing Claire off, Yang Chengye, who participated in the negotiation, looked at Xiao Ming with admiration and said, “I didn’t expect Your Highness to be so learned. I really respect you!”

“Stop flattering me and do more work. Now that the agreement is signed, Dengzhou will become the commercial port for Dutch trade. From now on, goods coming from the Netherlands will be unloaded here, and our goods will be loaded onto Dutch ships here,” Xiao Ming said.

Since Xiao Ming mentioned this before, Yang Chengye had been looking forward to this day. Now two months had passed, and it finally showed progress.

He said, “I will order the courtyard next to the government office to be cleared for the foreign trade department.” After saying this, Yang Chengye eagerly went to do it. He was now more eager than Xiao Ming.

Shaking his head, Xiao Ming walked toward the government office. Now that the agreement was signed, there were still many things to handle. First, he had to take over Ryukyu Island and the fortress named Nikes opposite Zeeland Castle on the island.

After that, his troops would be stationed at Zeeland Castle to jointly monitor the coastal trade routes with the Dutch.

Thinking of this, he immediately sent for Yue Yun. Since controlling the trade routes was naturally Yue Yun's responsibility.

Not long after returning to the office, Yue Yun arrived. During this time, he had been leading the fleet in training. Hearing Xiao Ming was in Dengzhou, he came to inquire about Ryukyu matters.

"The Dutch surrendered? That is boring!" Yue Yun looked disappointed. Now he was like a fighting rooster searching for an opponent everywhere.

"Not really surrender. From now on, we will be partners, but cooperation also means staying alert. That is the meaning of stationing troops," Xiao Ming said. "So you will send some warships to Ryukyu. I will also train a batch of marine corps for you."

"Marine corps?" Yue Yun's eyes lit up. This was the type of unit he had always dreamed of.

Chapter 452: The Goryeo Navy

In a refined residence, red corridors encircled the courtyard.

In the middle of the courtyard was a clear pond, with schools of koi fish swimming leisurely.

Looking at Yue Yun's joyful face, Xiao Ming nodded slightly. His plan to build a marine corps was not on a whim but a preparation to compete with the West for colonies.

From the 15th to 16th centuries, Western countries established specially trained landing forces for overseas expansion. By the mid-17th century, England had established a marine infantry regiment.

Afterwards, Russia, Portugal, France, Spain, and others all set up marine corps or naval infantry units. Using these marine corps for amphibious operations, they captured many colonies.

Now Xiao Ming wanted to build a force that could follow the navy to fight anywhere. He said to Yue Yun, "Campaigning abroad is very hard. You need to select soldiers who are willing to go on expeditions. These soldiers must have the fanaticism of pirates and absolute loyalty."

"Yes, Your Highness," Yue Yun answered seriously.

After discussing this, Xiao Ming explained in detail how to take over Ryukyu. To control the trade routes, he had to send a fleet to garrison Ryukyu. Without military force, merchant ships could not be safe.

Following Xiao Ming's orders, Yue Yun happily returned to the naval base. At this time, Fei Yue'er just came out of the government office.

"Your Highness, this residence is quite exquisite," Fei Yue'er looked down at the koi swimming in the water. "I suppose the previous owner of this residence was a wealthy person."

"You guessed right. This residence once belonged to the Su family, a local powerful clan in Dengzhou. Two years ago, the Su family took part in a rebellion. The main conspirators were executed, followers were exiled, and this residence was left vacant. Yang Chengye thought it was a pity and chose this place as my government office."

"I see. I had heard news that Your Highness defeated the rebellion of the powerful clans in the six prefectures," Fei Yue'er said. "The powerful clans of Great Yu are very strong now, so it must have been extremely dangerous at the time. Your Highness's ability to fight them alone shows great wisdom and courage."

Recalling the events two years ago, Xiao Ming sighed lightly. "I had no choice then, and my lordship's clans were originally weak in power. Only then could I successfully wipe out all the clans. Otherwise, my territory would not have developed so smoothly."

"Your Highness speaks wisely. Although I am a weak woman, I have read some history books. In history, the rise and fall of states is often caused by powerful clans dividing land, leaving common people with no land to farm," Fei Yue'er said calmly.

Xiao Ming smiled. He did not believe in the old saying that women's virtue is their only talent. To him, a virtuous and educated wife was far better than a woman who only cared about household gossip.

He said, "You see far. But now Great Yu is already gravely ill. Powerful clans are like parasitic worms, turning Great Yu into a living hell. The rebellion of the Azure Dragon King may have been secretly supported by the Chu King, but the real reason is the people cannot live anymore. Now to change things, a bloody storm is inevitable."

Fei Yue'er sighed, as she had only remembered this because of the residence.

Seeing that Xiao Ming looked heavy-hearted, she quickly changed the topic. "Has the negotiation with the Dutch ended?"

“It is done. From now on, Ryukyu belongs to us,” Xiao Ming smiled.

Fei Yue’er smiled happily, glad Xiao Ming had achieved his wish. Then she asked, “Your Highness, since the negotiation went so smoothly, what are we going to do now that we stay in Dengzhou?”

After thinking for a moment, Xiao Ming said, “I plan to take you on a tour at sea.”

“At sea?” Fei Yue’er instantly became excited. She had lived in Chang’an for a long time and only heard of the vast sea but never seen it.

At this, their conversation became livelier. Xiao Ming carefully described the beauty of the ocean.

Thanks to the technology crystal, beautiful images appeared in Fei Yue’er’s mind. Taking the opportunity, Xiao Ming told her about sea creatures, which made Fei Yue’er sometimes amazed, sometimes excited, and sometimes afraid.

Now that the negotiation was complete, Xiao Ming no longer hurried with state affairs. One purpose of this visit to Dengzhou was negotiation, the other was to check on the coastal defense, fishing, and salt fields in recent months.

After resting one night at the government office, the next day Xiao Ming took Fei Yue’er to the naval port. Yesterday he had told Yue Yun about today’s sailing.

“Your Highness, Your Highness’s consort, please!” Yue Yun respectfully invited Xiao Ming and Fei Yue’er to board the Qi Wang (Prince Qi) ship. He had been preparing this since yesterday.

The two boarded the deck. At that moment, Xiao Ming asked, “Are there any fishing boats going out today? I want to taste seafood.”

Upon hearing this, Yue Yun laughed heartily. “Your Highness, the fishing boats go out every day, and today is no different. I plan to take you and the consort out with the fishing boats so you can eat fresh seafood on board.”

“Wonderful.”

Xiao Ming was in a good mood. The natural environment of this era was basically undamaged, especially the sea. He was looking forward to tasting pure natural flavors.

With all preparations done, the Qi Wang set sail with the bell, followed by five warships. Yue Yun arranged these warships to protect Xiao Ming. He also felt pressured to accompany the prince and consort at sea.

In front of the warships were five large fishing boats converted from merchant ships. These were operated by fishermen recruited in Dengzhou. To maximize their fishing, Yang Chengye had recruited experienced fishermen.

These fishermen had rich experience and knew the fish distribution in each sea area.

“Your Highness, ever since these fishermen started using trawl nets, each trip they bring back a full load of fish. The fishermen now respect Your Highness greatly.”

Today was for fun, so Yue Yun was relaxed and chatted with Xiao Ming.

“Is that so? Then I can rest easy. Dengzhou’s fishing industry seems fine,” Xiao Ming laughed.

Fei Yue’er seemed not to hear their conversation. She was focused on admiring the blue sea, occasionally looking up at the seagulls circling above the warships.

The dolphins leaping in the blue ocean made Fei Yue’er’s eyes widen in amazement.

After leaving the naval port, the fishing boats headed north. According to Yue Yun, the abalones on the northern part of Chang Island were very delicious. They were heading there to catch abalones.

Xiao Ming was unfamiliar with Chang Island. It was a small island north of Dengzhou.

After sailing for half an hour, an island gradually appeared ahead, exciting everyone.

But just as the fleet was about to sail around the island to continue north, six warships suddenly appeared at the island’s turning point.

“The Goryeo navy!”

Yue Yun’s expression suddenly turned cold.

Chapter 453: The Trap

“What is going on?”

Looking at the six warships that appeared, Xiao Ming asked.

Seeing the six warships, the fishing boats ahead panicked like mice seeing a cat, turning sharply to try to escape.

Yue Yun’s eyes showed hatred and a hint of bloodlust. He said to Xiao Ming, “Your Highness, these warships come from Bisha City—Goryeo warships. We have often been bullied by Goryeo warships when fishing. They are very aggressive; whenever they see our fishing boats, they chase them. Many fishermen have been killed, and boats burned. They claim this sea belongs to Goryeo and forbid us from fishing here.”

“The history books say Goryeo are barbarians and lowly people. It’s true. Back when they were a vassal state of Great Yu, they were very respectful to us. Now that they have sided with the barbarians, they are so fierce against us,” Fei Yue’er said, her brow showing anger.

Xiao Ming looked at Fei Yue’er with some surprise. People said she was a strong woman, and in this patriotic feeling, she truly was unmatched by most women.

Yue Yun was also impressed by Fei Yue'er's words, his eyes filled with respect.

"Your Highness's consort is right. Now that our fleet has some scale, I want to be the first to deal with Goryeo and make them understand who really owns this sea," Xiao Ming's eyes narrowed.

At this moment, the six Goryeo warships seemed to have spotted Xiao Ming's group. Instead of retreating, they charged forward.

"Consort, it's dangerous here. You should go hide in the cabin for now," Xiao Ming said to Fei Yue'er.

He had been in a good mood today, but these Goryeo warships ruined it.

Fei Yue'er understood that staying on deck now would only distract Xiao Ming. She nodded and went to the cabin. She was not worried about the fleet's safety because she knew how strong it was.

Using a telescope, Xiao Ming looked at the Goryeo warships opposite. They were typical Goryeo "board house" ships.

These board house ships were huge, carrying nearly a hundred men. Their sailing speed was slow, but in battle, only dozens of sailors were needed to operate them flexibly. Goryeo's navy commonly used these as their main warships at this time.

Watching carefully, Xiao Ming saw over a hundred Goryeo soldiers on the deck, some holding bows and arrows, some swords and knives. Some archers were shooting at the fishing boats.

The board house ships did not use sails as their main power; instead, wooden oars in the lower hull were rowed by crewmen, chasing the fishing boats.

“Your Highness, shall we attack now?” Yue Yun asked.

Xiao Ming was confused. “Are these Goryeo soldiers crazy? Don’t they see our warships? Why are they so arrogant?”

“Your Highness, they probably think we are also fishing boats. Dengzhou has never had warships before, and there are few soldiers on our deck. They don’t wear armor or carry weapons,” Yue Yun explained.

Xiao Ming nodded. “Then let’s play along and pretend to be fishing boats. Wait for my command.”

“Yes, Your Highness.”

The fishing boats ahead hurried closer to Xiao Ming’s warships under the Goryeo’s chase. The Goryeo warships kept chasing. Xiao Ming ordered all gunners on the warships to prepare, and the crew on deck to load their flintlock guns and hide behind the ship’s side, waiting for orders.

On the board house ship, a general wearing scale armor and helmet was inspecting the unusually large Great Yu ship.

They had never seen such a ship before. The large hull and many sails were unlike any ships in Wokoku (Japan) or Great Yu.

“General Park, these fishing boats seem scared stiff,” a deputy general said with a smile. “Why have Great Yu fishing boats gotten so big? It would be a shame to burn them now. Let’s just capture them and the king might reward us.”

Park Jeong-ho frowned deeply. They had been ordered to oversee fishing boats gathering abalone on Chang Island to offer to the king. Their boats were gathering abalone on the island’s side.

Just then, a fisherman gathering abalone in the water told them that fishing boats were coming from the south, so they hurried over, certain they were Great Yu boats.

For them, Chang Island was a special abalone supply area for the Goryeo royal family. They absolutely forbade Great Yu fishermen from fishing here, even though Chang Island was over 200 miles from Goryeo and only 30 miles from Great Yu.

“Something’s off. These fishing boats are too big, and the boats in front have all fled. Why don’t they run?” Park Jeong-ho dismissed the deputy’s suggestion.

The defeat of the Golden Horde by Great Yu was now well-known. This area seemed to be the territory of that Qi Prince of Great Yu, which worried him.

A vassal prince who defeated the Golden Horde was a serious threat to Goryeo. His land was just across the sea from Goryeo.

“General Park, since when have you gotten so timid? Everyone knows what Great Yu is like. Don’t overthink. Look, none of the people on that ship wear armor or carry weapons. It must be fishing or merchant boats. If you don’t attack, I’ll have to lead the soldiers myself,” the deputy said with a strange tone.

Park Jeong-ho’s face turned very ugly. This deputy was from the royal city with a strong background. Though his rank was lower, he always disobeyed orders.

“Deputy Kim, for safety, we should send vanguards to probe,” Park Jeong-ho said reluctantly, not wanting to risk soldiers’ lives.

Deputy Kim snorted, “Fine, send four warships to catch them.”

He ordered the warships to attack.

Four warships rowed forward. The board house ship approached the Great Yu ship. As they got closer, they saw people on the ship hiding in fear, which relaxed their guard again.

As they neared, on command, Goryeo soldiers on the board house ship threw hooks to catch the Great Yu ship.

“Kill!”

With the ship hooked, the Goryeo soldiers got excited, as it was almost like capturing the huge ship.

But their excitement quickly turned to fear.

“Boom! Boom!”

Loud explosions rang out. The board house ship suddenly tilted on its side, as if about to capsize.

The loud noise almost deafened the Goryeo soldiers on board.

As they struggled to keep balance, suddenly a row of men stood up on the Great Yu ship’s side. Flames and loud noises followed, and the Goryeo soldiers fell in groups.

Chapter 454: Captured

“A trap! This is a trap!”

From afar on the board house ship, Deputy General Kim’s legs trembled. The thunderous sounds threw him into panic.

Park Jeong-ho's face turned pale, but he kept calm and shouted, "Retreat!"

The four warships that had attacked were rocking like rootless floating plants in the water, caught in flames and roaring noises.

"Is this what they call cannons?" Park squinted. The war between Great Yu and the Golden Horde had reached Goryeo, and they had learned about cannons.

"No matter what, we are definitely no match. Escape quickly," Deputy General Kim shouted. "Row, row fast!"

Cannon and gunfire continued. After one round of shooting, the artillery crew reloaded for a second round.

But after just one round, the rowers in the board house ship's hull were almost all dead or wounded.

"Boom! Boom!"

Another volley of shots. Solid cannonballs pierced the wooden planks of the board house ship like slicing tofu. Inside, the cannonballs destroyed everything.

The terrified Goryeo rowers were thrown by the cannonballs again and again. Blood spilled over the entire ship's floor like ink.

"Bang! Bang!"

Gunfire continued on the deck. The Goryeo soldiers were in a panic, constantly killed by flintlock guns. Some were so scared they jumped into the sea. Others ran and hid. Some even knelt on the deck and chose to surrender.

“Surrenderers will not be killed!”

Yue Yun shouted to the soldiers on the board house ship and raised a flag that read, “Surrenderers will not be killed.”

Seeing the flag, more Goryeo soldiers knelt on the deck, surrendering.

Goryeo had long used Great Yu’s written language. Although they spoke differently, some literate soldiers could still understand the writing.

After repeated bombardments, the board house ship had lost all power and could only wait for death.

“Your Highness, two ships have escaped,” Yue Yun said. “Shall we pursue?”

“No need. Let them go back and spread the news. I want the Goryeo king to live in constant fear,” Xiao Ming said with a faint smile. To him, Goryeo was just a fat sheep.

He planned to turn Goryeo into a place for exporting his goods and a source of slaves. But now was not the time to start a full war. The urgent matter was Ryukyu.

Ryukyu now had large amounts of sugarcane and was a place where triple-season rice could be grown. This was vital to Xiao Ming because it meant a high-yield food area.

According to Claire, Taiwan's indigenous mountain tribes, plus 200,000 people migrated from Great Yu to Ryukyu Island, mostly living in southern Ryukyu under Dutch control.

For Xiao Ming, 200,000 was not a large population, and most were difficult-to-control mountain tribes. However, he did not care, because once he controlled Ryukyu, he could encourage Great Yu's mainland people to immigrate there.

After all, the local people were under royal control. If he could get Xiao Wenxuan's approval to move about 100,000 people, this place could continuously provide him with grain.

While Xiao Ming was thinking, Yue Yun was already directing soldiers to imprison the surrendered Goryeo soldiers on the ship.

Most of the board house ship's rowers were dead or wounded, and the ship had lost power. Even if the Goryeo soldiers refused to surrender, they would starve at sea.

"Move, hurry!"

Crew armed with flintlocks forced the Goryeo soldiers into the hull for guarding.

There were over 400 soldiers on the four board house ships originally, but now less than 100 were alive. Most died from artillery and flintlock gunfire.

The surrendered soldiers looked like frightened rabbits, dazed and trembling.

Although the four board house ships had not sunk after the bombardment, Xiao Ming said, “Later, pull these ships back. Fix them up for fishing; they are still useful.”

“Yes, Your Highness,” Yue Yun said with a smile.

The battle was completely one-sided. When Xiao Ming came to his senses, it was basically over without difficulty.

After counting, none of his soldiers were injured. They only wasted some ammunition.

After the battle, Xiao Ming lost his mood for tasting seafood. He let the fishing boats continue fishing, and he and Yue Yun dragged the board house ships back to the naval port.

After disembarking, Fei Yue'er still looked pale. The cannons had scared her badly.

"Are you okay?" Xiao Ming asked, choosing to return to Dengzhou out of concern for Fei Yue'er's feelings.

"I'm fine, Your Highness," Fei Yue'er gave a faint smile, not wanting to worry him.

Although she did not see the battle, the cannon sounds and soldiers' desperate screams made her fully realize how brutal the fight was.

Just those sounds alone made her heart tremble.

Fei Yue'er's expression made Xiao Ming realize she was comforting him, but he also knew that as his consort, she would have to face such storms sooner or later, so she could remain calm in future crises.

After settling Fei Yue'er to rest at the government office, Xiao Ming returned to the naval port.

"Your Highness, all the prisoners are here," Yue Yun said, pointing at the kneeling Goryeo soldiers.

Xiao Ming nodded and asked, "Who among you can speak Great Yu's language?"

Because Goryeo was once a vassal state of Great Yu, many Goryeo people spoke the language.

As soon as he finished, a man who looked like a general said, "I-I can!"

Yue Yun immediately brought the Goryeo soldier dressed in general's clothes to Xiao Ming.

Knowing the enemy and yourself leads to victory. Xiao Ming never underestimated any enemy because many failures had happened due to neglect.

He asked, "Who is your current king?"

"Our king's family name is Li," the Goryeo general said trembling.

Xiao Ming asked again, "How many sailors do you have? How many warships?"

"Fifteen thousand sailors and 120 warships," the Goryeo general said again.

Yue Yun was somewhat surprised. "Your Highness, Goryeo's navy is quite large."

Xiao Ming nodded. This was also why he did not start war rashly. He then asked, "Are they all this type of ship?"

“No, no. Besides these ships, we also have a type called ‘turtle ships’,” the Goryeo general said.

“Turtle ships? What are those?” Yue Yun asked.

Before the general could answer, Xiao Ming explained, “They are ships used to ram enemy warships.”

Chapter 455: Chrysanthemum Island

“Your Highness, what shall we do with these prisoners?”

After some questioning, the Goryeo general revealed everything he knew. At this point, Yue Yun ordered the soldiers to put away their bayonets.

“How have they treated our fishermen?” Xiao Ming’s expression turned cold.

“Anyone they catch is made a slave,” Yue Yun said angrily. He already knew that many coastal pirates were actually Goryeo soldiers in disguise, which made him hate Goryeo even more.

“I’ve said before, ‘Anyone they catch is made a slave,’” Xiao Ming said.

“Yes,” Yue Yun sneered coldly and motioned. Soldiers carrying bayonets fixed on their flintlocks drove the Goryeo prisoners toward the salt fields.

Feeling some relief, Yue Yun continued, “Your Highness, since the barbarians crossed the pass, Goryeo has frequently bullied our Great Yu people and forcibly taken over surrounding fishing grounds. Now that our fleet is taking shape, it’s time to teach these two-faced Goryeo people a lesson.”

“That’s exactly what I’m thinking. From now on, you must send warships to patrol the sea. Attack any Goryeo or Wokou ships encountered,” Xiao Ming said coldly.

The coastal pirate problem had long troubled Great Yu. Whether real Wokou, Goryeo disguised as Wokou, or Great Yu merchants disguised as Wokou, all caused serious threats to coastal cities and trade routes.

Now that he had signed a trade agreement with the Dutch, his merchant ships would soon transport goods to southern Great Yu via sea and land. At this moment, he had to ensure their safety.

That was why he made this decision.

Yue Yun nodded excitedly. He had long dreamed of this day. Now the era of Great Yu’s dominance over the seas was finally coming.

They discussed details of the warship patrols.

Actually, the idea was simple. Just like today, warships patrolled mainly to fight pirates and protect trade routes.

Because the ocean was vast, it was unrealistic for all warships to act together. So Xiao Ming divided the fleet into groups of two or three warships.

Each group was responsible for patrolling a specific sea area. This way, his current fleet could cover East Asian routes completely and firmly control the sea lanes.

Of course, warship patrols were only the beginning. Soon, he would monopolize sea trade, becoming like the Dutch—the maritime “coachmen” of East Asia. Only his merchant ships could carry goods between different countries and earn profits.

But this goal was still difficult to achieve now. Without a fierce war, he probably could not force Goryeo and Wokou to acknowledge his naval supremacy.

Though he wanted to start war now, the reality was that the number of warships was still too small.

Galleon ships were not all-powerful and not very agile at sea. Facing hundreds of enemy warships was still dangerous. So he was waiting for twenty-four third-class sailing warships to be launched this year.

With that, he would have thirty-nine warships. Such a fleet could fight flexibly in naval battles and not worry about the Dutch betraying him behind his back.

“Those not of our tribe always have different hearts,” Xiao Ming thought. He would never trust the Dutch just because of a signed agreement. Between nations, only interests are eternal.

After deciding on patrol routes, Yue Yun planned to implement them soon. For now, the fleet's main function was to protect trade routes.

Leaving the naval port, Xiao Ming returned to the government office. On the way, he began thinking about his next East Asia strategy.

If he still lived in modern times, Xiao Ming wouldn't worry about so much. But now, as a Great Yu prince, he had to find a bright future for his territory.

After encountering Goryeo warships at sea, Xiao Ming became even more determined to attack Goryeo and destroy their navy.

It was not just to teach Goryeo a lesson but because attacking Goryeo was an important step to suppress the barbarians.

Without destroying Goryeo's navy, he could not station troops on Juehua Island to directly attack the barbarians' heartland.

Juehua Island, also called Chrysanthemum Island, was the largest island in modern Liaodong Bay. During the Ming dynasty, the navy on Juehua Island was led by guerrilla commander Jin Guan.

Its roles were: guard the island's grain and equipment; assist the army in recovering lost Liaodong territory; and support Ningyuan city's defense.

Historical records said: “Building the eight-li fortress is key to Ningyuan’s defense, guarding the 40,000 men of Baling who defend Ningyuan’s front, forming a pincer with Juehua Island. If enemies attack the city, island troops burn the floating bridge and strike from behind.”

Later, the Jin army fought the Ming in the Battle of Huajue Island over this place, showing its strategic importance.

Now Xiao Ming also valued this place. To attack the barbarians’ heartland with fortress-based advance strategy, this island would be perfect.

On land, the northern barbarians were still Qingzhou’s biggest threat. Though Xiao Ming was developing the navy, arrangements against the barbarians never stopped.

In the last Jizhou battle, Beishan’s fate was unknown. Afterwards, the barbarians seemed to quiet down.

This surface calm made Xiao Ming more uneasy. Storms always come after calm. He didn’t want to imagine the worst.

It was because of this worry and worst-case planning that sea trade routes were especially important. If his territory lost external support, sea trade would be his last lifeline.

Back at the government office, Fei Yue’er was feeding fish by the pond. Her relaxed expression showed she had calmed down.

"Your Highness," Fei Yue'er smiled and stood when she saw Xiao Ming return.

Xiao Ming approached and asked, "Did today's events scare you?"

"You underestimate me, Your Highness. I wasn't scared, just seasick," Fei Yue'er said with some embarrassment.

"Seasick?" Xiao Ming was speechless. "Why didn't you tell me before going out?"

"I didn't want to spoil your mood. Besides, I lived in Chang'an and never saw the sea. I really wanted to come see it with you," Fei Yue'er said.

Xiao Ming patted Fei Yue'er's head. "No wonder you said little and looked pale all the way. I thought the naval battle scared you."

Fei Yue'er became more embarrassed. "Your Highness faces barbarians fearlessly in Qingzhou. As your wife, how could I let the soldiers laugh at me?"

Xiao Ming nodded. Fei Yue'er was increasingly looking like a proper princess consort.

The two laughed. Just then, a servant came in and said, "Your Highness, Commander Yang requests to see you. The fishing boats have returned."

Chapter 456: The Fishermen's Gratitude

Yang Chengye was standing outside the temporary command post, holding a basket of fish.

Inside the basket were abalone freshly caught by the fishermen from Chang Island.

Before the barbarians entered the border, Chang Island had always been a fishing ground for the fishermen of Dengzhou. But later, the island was often visited by the Goryeo navy because of its famous Chang Island abalone.

These abalones were known for their delicious taste. The abalones caught along the coast were often sent to the royal palace as tribute. In the past, Chang Island abalone was frequently selected as tribute for the palace.

The emperor and consorts of the Great Yu Empire loved eating it, and the king and consorts of Goryeo also loved it. Before, fishermen from both sides often clashed near Chang Island. But after Goryeo became a vassal state of the barbarians, they no longer held back. Their navy directly drove away and killed fishermen from Great Yu.

The fishermen of Dengzhou felt very sorrowful but had no way to fight back. Dengzhou had no proper navy of its own. Now, for the first time in a long while, they finally saw the Chang Island abalone again.

Behind Yang Chengye were the fishermen who went out to sea this time. After delivering the abalone to the government office, they insisted on coming with Yang Chengye to personally thank Prince Qi.

These years, the fishermen had lived a very frustrated life. Their door opened to the sea, but they were bullied by either the Japanese pirates or the Goryeo people. Today's naval battle made the fishermen so emotional that tears filled their eyes. Now, for the first time, they felt protected.

"Inspector Yang, please," a servant came back from Xiao Ming and said.

Yang Chengye then said to the crowd, "Everyone, follow me inside. His Highness is inside."

The fishermen nodded and followed Yang Chengye into the temporary command post. By the pool inside, he saw Xiao Ming waiting.

"I pay my respects, Your Highness."

"Greetings to Prince Qi."

As Yang Chengye bowed, the fishermen were about to kneel and bow. At this moment, Xiao Ming stepped forward and helped the elderly man at the front stand up. He said, "Though our Great Yu Empire has often been bullied by foreign tribes and is slowly weakening, since our founding emperor established the country, the people have never had to kneel before the royal family. Everyone, please stand up."

The elderly man in front was thin and dry, his skin darkened from the sea wind over the years. His wrinkled face showed a trace of sorrow. But now his expression was full of emotion.

“Your Highness, we brought you abalone from Chang Island. In the past, this abalone was a tribute to the court. For many years, we dared not go near Chang Island. Thank you, Your Highness, for standing up for us fishermen of Dengzhou.”

“Sir, you flatter me too much. Protecting the people of my fief and letting everyone freely fish at sea is my duty. There is no need to thank me,” Xiao Ming smiled.

The old man rubbed his dry hands together.

“Even so, only Your Highness can give us fishermen protection. Everyone is very grateful in their hearts. We had to come personally to express our feelings.”

“Your feelings are well received. It is everyone’s duty, from officials to commoners, to protect the country. If you hadn’t sent your sons into the navy, I wouldn’t have soldiers to command the warships. So, if anyone should be thanked, I should thank you,” Xiao Ming said kindly.

The fishermen all smiled simply at this.

The elderly man looked pleased. He turned to those behind him and said, “They say Your Highness loves the people like his own children. Seeing this today proves it true. From now on, we will have better days.”

The other fishermen nodded.

Yang Chengye's eyes sparkled with excitement. The fishermen in Dengzhou were a tough group, fighting pirates at sea and trading illegal salt. They were very bold.

During his years governing Dengzhou, these fishermen had given him the most trouble. When recruiting them for the fisheries, many had mocked him. Some even said his fishing boats weren't enough to fill Goryeo's teeth.

Now, seeing the Dengzhou fleet slicing through Goryeo's warships like cutting vegetables, the fishermen were so excited they almost jumped up.

"Old Dong, we have shown Your Highness the abalone. Now it's time to let Your Highness try it," Yang Chengye laughed.

"Yes, yes," the old man called Old Dong smiled. "Your Highness, with that, we won't keep you any longer. We take our leave."

"Everyone, take care," Xiao Ming smiled and cupped his hands in farewell. The people had their own sense of justice. That they came personally to thank Xiao Ming showed he was winning hearts in Dengzhou.

The people's reaction was the true measure of governance.

After the people left, Yang Chengye said to Xiao Ming, "Congratulations, Your Highness. You have won both the people's hearts and the abalone."

Xiao Ming's expression turned strange at this. He felt the words were odd. Looking at Yang Chengye's serious face, he said, "Don't flatter me. Today's good atmosphere in Dengzhou is also thanks to you. Stay tonight and enjoy the Chang Island abalone with me."

Hearing this, Yang Chengye's mouth watered. This was his favorite food. That was why he chose to serve in Dengzhou.

Unable to resist such temptation, he nodded. "Your Highness, besides the abalone, the fishermen caught a lot of fish this time. They will be sent soon. It's not easy for Your Highness to come to Dengzhou. Enjoy the sea's delicacies. But we have to thank you. Without your dragnet, the fishing boats couldn't have caught so many fish. The fishermen respect Your Highness deeply. They say if they had a large fishing boat with a dragnet, a whole village would have enough food."

Xiao Ming nodded. The dragnet was the modern way of fishing at sea. It was a net shaped like a pouch that he had taught Yang Chengye about.

This net was dragged by the fishing boat sailing at sea. Now his boats all used these nets made of rope. One trip out could catch a lot of fish.

Compared with traditional fishing methods like angling or casting nets, dragnet fishing raised efficiency by dozens of times.

"In that case, you can tell them, my merchant ships will have clear prices. If they want to buy, I can sell to them," Xiao Ming said after thinking for a moment.

“Sell to fishermen?” Yang Chengye asked in disbelief.

“Yes, the development of Dengzhou’s fisheries depends on many fishermen. The strength of the people is powerful. My few fishing boats alone cannot meet the Great Yu Empire’s market,” Xiao Ming explained.

For him, the next step was to revitalize the fief’s economy. To make the economy active, private capital had to be opened up.

Fishing had to be open. Other product manufacturing must be open as well. Only when there are profits and personal benefits will people throw their full enthusiasm into business. Only then would Qingzhou’s commerce truly come alive.

When commerce grows, the people will have money.

Having money can promote consumption.

Consumption will promote further industrial development.

At the same time, it will provide the fief with a large amount of tax revenue.

Chapter 457: The Return of Bei Shan

A mouthwatering aroma spread through the kitchen of the temporary command post.

The Chang Island abalone was being carefully cooked by the chef into a delicious dish. Yang Chengye and Xiao Ming were chatting casually, but the smell was so tempting that no one could resist.

Whether studying or handling government affairs, balancing work and rest was the right way. It wasn't that Xiao Ming had become lazy, but that he understood the balance between life and work: play when it's time to play, eat when it's time to eat.

After about half an hour, a maid finally brought out the braised abalone from the kitchen.

"Smells amazing!"

When Yang Chengye saw the braised abalone, his eyes nearly popped out. He had never seen abalone cooked this way before. Usually, he just boiled it in water.

This time, the kitchen prepared twenty abalones in total. In modern terms, abalone is called "the gold of the dining table," the crown of sea delicacies, showing just how delicious it was.

Xiao Ming understood why these abalones were court tributes—the abalones caught by these fishermen were all one-headed abalones.

As is well known, the fewer the heads on an abalone, the more precious it is, because it means the abalone is heavier. Even a four-headed abalone is considered top grade nowadays. These Chang Island abalones were on another level entirely.

Such supreme abalone was rarely even seen at state banquets.

"The environment of this era really is good," Xiao Ming sighed. Only such a natural environment could produce such abalone.

Gulp.

Yang Chengye swallowed his saliva.

Xiao Ming shook his head and gave ten of the abalones to Yang Chengye. "Take these and share them around."

"Thank you, Your Highness." Yang Chengye felt a bit embarrassed. The maid had already packed the abalones into a food box.

Taking the box, Yang Chengye thanked him and hurried back, his heart already itching with anticipation.

After Yang Chengye left, Xiao Ming rubbed his hands and told the maid to bring the abalones to his chamber, where Fei Yue'er was waiting.

"Princess, the delicacy has arrived," Xiao Ming said with a smile.

Fei Yue'er had never eaten sea delicacies before and was very curious. She asked, "Your Highness, can we really eat this?"

"Of course, not only can you eat it, it's very delicious." Xiao Ming picked up an abalone and brought it to her lips.

After taking a small bite, Fei Yue'er chewed carefully, her expression becoming more and more amazed. For the next bite, she took a big piece and started eating by herself.

Xiao Ming smiled and began eating quickly himself. The Chang Island abalones were large enough to satisfy them both.

At the same time, he thought that sending such delicacies to the palace would surely please Xiao Wenxuan. That might make discussing the immigration issue easier.

Meanwhile, Yang Chengye was sneaking with the food box back to the government office, but he hadn't gone far before bumping into Yue Yun, who was returning from the military harbor.

Seeing Yang Chengye, Yue Yun frowned and greeted him, "Inspector Yang, have you seen Old Dong? That old man didn't leave a single Chang Island abalone for me."

"Old Dong seems to have left already," Yang Chengye said, hiding the food box behind his back, sweat forming on his forehead as he had his own little plan.

Yue Yun looked disappointed, muttering, "What a pity."

Then he turned to leave but suddenly stopped, sniffing the air. Yue Yun immediately noticed something unusual about Yang Chengye.

"Inspector Yang, this smell doesn't fool me. You're secretly hiding abalone. Just wait, I'll report this to His Highness." He leaned forward and saw the food box behind Yang Chengye.

Yang Chengye cursed silently and had no choice but to honestly take out the box and say, "This was a gift from His Highness. You and I know about it. Don't tell anyone else."

They exchanged a glance and laughed like foxes. Who could resist tribute-grade abalone?

...

At Bisha City, Park Jeong-ho led the only two remaining warships back. The terrifying Great Yu warships from Chang Island still haunted their minds like a nightmare.

The soldiers on the ships got off one by one, all looking dazed like sleepwalkers.

"General Park, we have to report this to the king now. Otherwise, we will be blamed for failing to bring back the tribute. Don't forget, this abalone was meant to be given to Bei Shan Taiji to help with his health," Vice General Kim said nervously.

Park Jeong-ho frowned deeply. He knew how serious the situation was. Offending Bei Shan was worse than offending the king. Bisha City remained under Goryeo control only because they had flattered Bei Shan well. Otherwise, they would have had to retreat to the peninsula.

Looking at Vice General Kim, whose face was pale with fear, Park sighed bitterly. "What we should worry about now isn't the tribute, but the safety of Goryeo. Didn't you see those Great Yu warships breathing fire? They are now just outside Goryeo's waters. We will lose the Chang Island fishing grounds. We must see the king and tell him everything we saw."

"You're right. It's not our fault. The Great Yu warships are just too strong. The king won't blame us, and Bei Shan Taiji won't either," Vice General Kim tried to excuse himself.

While they were talking, a cavalry unit approached them. Seeing the riders, their faces changed. These were troops from the Golden Horde. Now both Bei Shan Taiji and the Goryeo king were in Bisha City.

It was on Bei Shan's orders that the Goryeo king had come from Hanseong to Bisha.

"Did you bring back the tribute for the Taiji?" The lead barbarian soldier asked coldly.

Vice General Kim's legs trembled so much he couldn't speak. Park Jeong-ho paused, then said, "No, we were attacked by Great Yu warships."

Smack.

As soon as Park finished speaking, the barbarian cavalry whipped his face hard. A blood streak appeared on Park's face and he staggered back three steps.

Seeing this, Vice General Kim immediately knelt on the ground in fear.

"What is going on?" At that moment, two men arrived at the Bisha City dock surrounded by soldiers.

Seeing them, Vice General Kim crawled like a rolling gourd to the feet of the Goryeo king, begging, "Have mercy, Your Majesty..."

The Goryeo king was a slightly obese middle-aged man. Beside him stood Bei Shan.

"The Taiji, these dogs didn't bring back the tribute. They deserve to die," the cavalry commander said.

The Goryeo king's face turned extremely ugly. He forced a flattering smile toward Bei Shan, then angrily said, "Park Jeong-ho, what happened? You couldn't even handle such a small matter. What punishment do you deserve?"

"Your Majesty, it's not our fault. We encountered the Great Yu navy. Their warships flew Prince Qi's flag. It is likely Prince Qi's army," Park Jeong-ho explained.

“Prince Qi!” Bei Shan hissed these words, his eyes burning with murderous intent.

Chapter 458: Bei Shan’s Ambition

The wound on his middle finger still throbbed faintly.

Bei Shan vividly remembered the humiliation suffered in the battle of Jizhou. The last disastrous defeat caused the Blood Wolf tribe to lose more than half its forces, and losing Shanhaiguan enraged his father, the Khan, like thunder.

If it weren’t for his mother and the leader of the Tula tribe pleading for mercy, he would have had to pay with his life rather than just lose three fingers on his left hand.

Afterwards, he was ordered to hand over command of the army and now had to live in Goryeo, officially supervising this vassal state.

“Forget it. It’s not his fault. The Great Yu’s Prince Qi is not so easy to deal with,” Bei Shan forcibly suppressed his anger. His eyes shifted. With his sharp sense of war, he felt that a new conflict was drawing closer.

The Goryeo king said to Park Jeong-ho, “Bei Shan Taiji is kind-hearted and has spared you. You should thank him and withdraw.”

Vice General Kim kowtowed repeatedly, and Park Jeong-ho bowed down on his knees.

Turning his head to look thoughtfully at Bei Shan, the Goryeo king sighed in relief. He really did not want to punish his generals over this. After all, they were still his men.

Bei Shan then looked toward the southern sea and asked the Goryeo king, "How long does it take to sail from here to Dengzhou?"

"Taiji, Dengzhou is very close. It takes only one day by boat to reach," the Goryeo king answered cautiously.

"One day?" Bei Shan's eyes gleamed strangely. Then he asked, "How many soldiers can your navy transport at once?"

"Ten thousand is still possible." The Goryeo king suddenly had a very bad feeling.

Bei Shan nodded lightly and said, "Too few. From now on, Goryeo must use every method to speed up shipbuilding and prepare for the Golden Horde's campaign against Great Yu."

The Goryeo king shuddered in his heart and nervously asked, "Is the Great Khan preparing to march south?"

"The north grows colder every year. Many of our cattle and sheep freeze to death annually. Rest and recuperation is nonsense. If we don't go south soon, our people will starve to death," Bei Shan sneered.

Although his rashness caused the defeat in Jizhou and the loss of Shanhaiguan, he had continuously pushed for the Golden Horde to move south. Now the tribal leaders on the steppe finally realized the correctness of his plan and were preparing for the southern campaign.

Unfortunately, he could no longer lead the army himself and had to let other Taijis set foot on Great Yu's soil first.

Even so, he never let go of his hatred for Xiao Ming. He waited for the day to take revenge, and now he saw hope and had devised a brilliant plan.

...

Dengzhou.

Xiao Ming truly enjoyed the pure natural seafood of this era, licking his lips with satisfaction.

The fishermen were sent out to catch abalone not just for his own enjoyment. His real purpose was to find trade goods for Dengzhou. Without a doubt, these sea delicacies would become another source of income after salt.

His fief needed development and money everywhere: Qingzhou's industry, Youzhou's farming and herding, and Dengzhou relying on the sea. These were the three places he valued most.

After tasting the abalone, in the following days Xiao Ming sampled other kinds of seafood in Dengzhou.

He was not idle during this time, inspecting the coastal defenses. After he last left Dengzhou, soldiers from the construction camp had arrived and built hundreds of artillery batteries along the military harbor. These batteries would be equipped with heavy cannons to defend against attacks from the sea.

Besides the harbor, Yang Chengye had chosen some coastlines vulnerable to large-scale landings and built shore defense batteries. Dengzhou's strategic position was very important and had to be heavily defended.

Xiao Ming also inspected the salt fields. With the help of the construction camp, cement-floored salt fields had been established. When he arrived, hundreds of salt pans were drying salt as far as the eye could see.

Salt workers moved busily around. Salt in some pans had piled into white mountains. Seeing these, Xiao Ming smiled happily.

"Your Highness, since using seawater salt evaporation, our salt production has increased by over a hundred times. Now, selling salt outside the fief is no problem. Moreover, after filtering and refining, our sea salt quality surpasses domestic salt. You could say our salt has reached tribute-level quality," Yao Wenyan said excitedly.

Yang Chengye smiled, "Your Highness, Yao Wenyan's words are true. In the past, our Dengzhou salt was even sent to the palace as tribute."

Xiao Ming nodded with satisfaction and felt reassured. He said, "In that case, I will have the merchants come to Dengzhou to buy and sell the salt."

Yang Chengye and Yao Wen yuan were overjoyed, hoping to increase Dengzhou's revenue through salt sales.

Half a month passed quietly as Xiao Ming toured and inspected Dengzhou. The next day, Xiao Ming and Fei Yue'er set off back to Qingzhou. He had handled all matters in Dengzhou and planned to have the merchants transport salt from there.

His ambition was great: to have Dengzhou's salt dominate the Great Yu market.

After traveling for three days, Xiao Ming and Fei Yue'er arrived in Qingzhou. As they entered the city, Lin Wentao hurried over upon hearing the news.

Xiao Ming told Fei Yue'er to return ahead and asked, "What is it, Lin Wentao? Is there a problem with the steam engine?"

Lin Wentao smiled, "Your Highness, the steam engine is fine. But in just one month, I have upgraded the Newcomen steam engine into a compound steam engine."

"Compound steam engine?" Xiao Ming was surprised. Since Lin Wentao developed the Newcomen steam engine, he had sensed the compound steam engine was near, but he didn't expect the upgrade to come so quickly.

This made sense. The Newcomen steam engine's invention solved issues with the cylinder, piston, and connecting rod. The compound steam engine was just a small modification of the Newcomen.

Overall, to make the steam engine run efficiently, the piston had to move back and forth continuously. First, hot steam enters the cylinder, pushing the piston up.

Then the piston needs to move down. To do that, the steam in the cylinder must condense quickly to reduce volume and pressure.

Before Watt improved steam engines, the Newcomen engine injected cold water into the cylinder. But this cooled the cylinder, causing the next hot steam to lose heat and lowering efficiency.

Watt, when repairing such engines, noticed this flaw and thought: since we want the steam to cool but not the cylinder, let the steam exit the cylinder first, then cool it outside.

After all, the cylinder and condenser are connected, so the pressure in the cylinder can still drop.

Chapter 459: The Compound Steam Engine

“How did you modify it?”

The changes in Dengzhou lifted Xiao Ming’s spirits throughout the journey. Now that progress had been made with the compound steam engine, he was overjoyed. The industrial revolution was right before him. How could he not be excited? He was already thinking about applying the steam engine to various industries.

As they walked toward Bowen Academy, Lin Wentao explained, “Your Highness, it’s actually simple. I connected two ports on the cylinder: one for intake at the front, and one for exhaust. When the piston moves to the top, the intake closes and the exhaust opens. Outside the exhaust is a condenser waiting

for the hot steam. The steam instantly condenses, is sucked out of the cylinder, creating near vacuum inside, which pulls the piston down.”

He paused, then continued, “Repeating this cycle makes the piston move up and down continuously. Once connected with the crank and connecting rod, it becomes rotary motion. I tested it — the compound steam engine is five times as efficient as the Newcomen steam engine.”

“Good, Lin Wentao. Your physics academy has done a great service. Qingzhou will undergo huge changes thanks to you. I must admit, this time chemistry academy really lost to you, hahaha,” Xiao Ming laughed.

Lin Wentao then said, “But Your Highness, the cylinder boring is really slow. Producing compound steam engines is very slow. Could the first steam engine be used for boring on the lathe? This would greatly increase the lathe’s efficiency. The hydraulic workshop’s lathe depends heavily on water flow and is inefficient.”

“Of course. Now your physics academy doesn’t need to do anything else. Work closely with the machinery department to build a steam engine production line. Whether it’s money or manpower, I’d even sell my manor to provide it,” Xiao Ming declared boldly.

What his fief lacked most was population. The steam engine’s development would greatly ease that problem.

“Thank you, Your Highness.” Lin Wentao was so happy he could barely contain himself.

The two arrived at Bowen Academy. Inside the physics lab were two steam engines: a Newcomen steam engine and a compound steam engine. Craftsmen like Zhang Liu were observing their movements. One engine moved pistons up and down; the other had crankshaft motion.

“Your Highness, Lin Wentao is quite capable. We just helped him produce the Newcomen steam engine, and now they want us to assemble another one,” Zhang Liu smiled. “We’re currently researching how to combine the boring lathe with the steam engine.”

Seeing the real steam engines in the lab, Xiao Ming felt as if he had come to industrial revolution-era England.

Lin Wentao said, “Your Highness, this compound steam engine is not just my credit but the collective effort of all physics academy students. We researched, discussed, and solved problems together to create it.”

“Looks like everyone is improving. This is exactly what I want to see,” Xiao Ming said as he looked around the physics academy members. “I think I should award you all a group honor medal.”

“Thank you, Your Highness,” the students said excitedly.

While everyone laughed, Xiao Ming suddenly noticed a glass model of a steam engine on the lab’s central podium. Below it was an alcohol lamp.

He walked over and asked Lin Wentao, “Did you have the glass workshop make this glass steam engine?”

“Yes, Your Highness. Glass is easier to shape, so we made this model after the compound steam engine,” Lin Wentao said. “Then the machinery department reproduced the steam engine based on this model.”

“Good idea. In the future, all devices can start with a glass model,” Xiao Ming said as he turned toward the real compound steam engine—a machine made purely of steel and copper, radiating a full-metallic feel characteristic of the steel age.

This single steam engine already gave him the basis to catch up with European civilization.

Now the Great Yu Empire’s first steam engine was officially born in Qingzhou. The next challenge was mass production and application across industries.

At this era, steam engine motion had only two types: one using connecting rods for linear motion, the other using a flywheel for rotary motion.

To speed up applying the steam engine to machine tools, Xiao Ming decided to hold an on-site lesson. He gathered all students and craftsmen from the machinery department to explain connecting rod motion, crankshaft motion, and flywheel use.

“The connecting rod consists of three parts. The part connected to the piston pin is called the small end; the part connected to the crankshaft is the big end. The rod connecting the two is the rod body. The small end is usually a thin-walled circular ring. To reduce wear between it and the piston pin, a thin-walled bronze bushing is pressed inside the small end hole. Holes or grooves are drilled in the small end and bushing so splashed oil can reach the lubricated surfaces.”

Pausing, Xiao Ming continued, “The rod body is a long member that bears a large force during work. To prevent bending, you should make the rod with an I-shaped cross section, because I-sections have

enough strength. Next is the flywheel, a disk structure that allows the steam engine to produce rotary motion...”

While Xiao Ming lectured, the students and craftsmen visualized the connecting rod, crankshaft, flywheel, and the steam engine driving these components moving clearly in their minds.

Given Qingzhou’s current industrial base, steel supply for the steam engine was no problem. The quality of connecting rods, crankshafts, and flywheels was naturally no issue either. So Xiao Ming only needed to instruct Lin Wentao and Zhang Liu on how to use these components. How to manufacture them? They would figure it out.

After the explanation, everyone gained a basic understanding of the steam engine’s use. Many had known the steam engine must be developed, but few understood its purpose until now.

“Your Highness, we understand. When we return, we will start producing flywheels,” Zhang Liu said. Xiao Ming had explained clearly—applying a certain torque to the flywheel via the connecting rod and crankshaft would make it rotate.

Chapter 460: Another Surprise

Bowen Academy was in a state of special joy because of the birth of the compound steam engine.

Xiao Ming’s collective commendation of the physics academy further ignited the students’ enthusiasm. The entire academy was as lively as a festival, with discussions about the compound steam engine everywhere.

Of course, the happiest was Xiao Ming himself. After leaving Bowen Academy, he smiled all the way back to the manor, knowing that an industrial era revolution was about to happen in Qingzhou.

“What good news makes Your Highness so happy?” Fei Yue’er asked with a smile when he returned. Though she didn’t know why, seeing Xiao Ming so happy made her smile too.

Xiao Ming said, “Princess, you might not understand what a steam engine is. Come, I will tell you about it.”

He then explained how Bowen Academy had developed the steam engine and used a technology crystal to give Fei Yue’er a brief science lesson. After his detailed explanation, she gradually understood.

“If what Your Highness says is true, this steam engine is extremely important for Qingzhou and even Great Yu. One steam engine can replace more than a hundred people. That’s terrifying,” Fei Yue’er exclaimed.

Xiao Ming nodded. “Exactly. The fief has few people. Now with steam engines, one person can manage machines that replace a hundred workers. Especially in the textile industry, massive changes are about to happen.”

Fei Yue’er became more interested and asked, “Your Highness, what does this have to do with the textile industry?”

“Because there is a kind of textile machine that only works properly with a steam engine,” Xiao Ming said.

After the Industrial Revolution began, steam engines were first applied in textiles. He thought it was time to introduce the spinning jenny.

With the steam engine plus the spinning jenny, Qingzhou's textile industry would undergo a complete transformation driven by these two machines.

Great Yu had long been a land where men worked the fields and women wove cloth. Talking about textiles, Fei Yue'er became excited and said, "Your Highness, the new-style textile machine you made for Qingzhou is already amazing. Is there an even better textile machine?"

"Of course. There is a power loom that uses a flying shuttle. It's also a multi-spindle spinning machine with eight spindles. It can spin cotton as well as wool and hemp," Xiao Ming said.

Fei Yue'er was surprised. "It can spin wool and hemp too?"

Xiao Ming nodded. "That's just the basic model. After improvements, the machine can have up to forty spindles. Imagine one steam engine powering a forty-spindle machine running day and night—how much cloth could it produce?"

Fei Yue'er thought for a moment, eyes wide in shock. She looked at Xiao Ming and said, "Your Highness, if that's true, how will common people sell cloth in the future? Their handwoven cloth will be more expensive and cannot compete with our cloth. This could cause resentment among the people."

Fei Yue'er's warning made Xiao Ming frown.

He clearly remembered how the original spinning jenny was smashed by citizens who feared losing their jobs because it severely disrupted self-sufficient economies.

Now he would face the same problem. But he knew that history's progress cannot stop because of temporary misunderstandings.

He said, "Even so, the textile industry must change. They don't understand now, but soon they will."

Fei Yue'er nodded with concern.

Seeing Xiao Ming lost in thought, she wisely said no more and returned to her chamber.

Sighing, Xiao Ming rubbed his forehead. The steam engine's appearance was indeed a joy, but Fei Yue'er's unintended reminder caused him some pain.

Great Yu's whole country was a small-scale self-sufficient farming economy. Women wove cloth to sell, men farmed and raised cattle.

The steam engine's arrival meant Qingzhou could move toward an industrial society. But such drastic change easily causes chaos. If he let things run wild, capital would rapidly push his fief toward capitalism and urbanization.

He could not predict what chaos would arise, nor could he bear the disorder such change might cause.

After much hesitation, Xiao Ming decided not to open steam engines to merchants for now. This was the safest method.

Great Yu was different from pre-Industrial Revolution England. Here, land was the lifeblood of the people and could not be disturbed for now. Plus, the commoners lacked the knowledge to understand industrial change.

So, he planned to have the government establish steam engine workshops, preventing too intense change. When the people accepted steam engines and factories and realized working in factories could sustain them, then he would gradually open steam engines to merchants.

Also, he could keep the steam engine's secret longer, avoiding premature exposure.

Having figured this out, Xiao Ming exhaled lightly. Being a vassal prince was not easy. Any change had to be handled carefully. He still relied on the people and could not suddenly switch to support capitalists.

Once industrial knowledge was widespread, he believed the industrial revolution could land softly.

As he was thinking, a servant reported, "Your Highness, Song Changping from the military workshop has arrived. He says he brought you a rifled gun."

"Rifled gun?" Xiao Ming was stunned.

Since his trip to Dengzhou, technology in Qingzhou had really exploded. Not only was the compound steam engine developed, now there was even a rifled gun. Just as he expected, as knowledge spread, his fief was moving toward a technological explosion.

“Let him in,” Xiao Ming said excitedly. He was eager to see how Song Changping produced the rifled gun.

Soon Song Changping entered holding a flintlock rifle. He said, “Your Highness, this is a new rifle from the military workshop—a rifled gun, produced by imitating the books Your Highness provided.”

Xiao Ming took the rifle and looked inside the barrel. It wasn’t a spiral rifling but had many closely spaced slanted grooves. At a glance, they looked similar to standard spiral rifling.

After examining the grooves, Xiao Ming already had plans. He asked, “Honestly, how long did you spend rifling this gun with a hooked tool?”

Song Changping was taken aback but smiled wryly. “Nothing can be hidden from Your Highness. Yes, this rifled gun was made using a hooked tool. It took me several days to produce one qualified rifled barrel. But even so, loading bullets is very difficult, and its speed only reaches about one-third that of a smoothbore musket.”